APPENDICES

APPENDIX A

Final Technical Memorandum, Data Gap Investigation to Support the Feasibility Study, Former Guterl Specialty Steel Corporation, Lockport, New York.

Prepared by Shaw Environmental & Infrastructure, Inc.

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

FINAL
TECHNICAL MEMORANDUM

Data Gap Investigation to Support the Feasibility Study
Former Guterl Specialty Steel Corporation
Formerly Utilized Sites Remedial Action Program (FUSRAP) Site
Lockport, New York

U.S. Army Corps of Engineers
Buffalo District
12 May 2015

Table of Contents

List of Tables iii
List of Figures iii
List of Appendices v
Acronyms and Abbreviations vi

Executive Summary 1
ES.1 Project Introduction 1
ES.2 Project Scope 1
ES.3 Geology, Hydrogeology, and Analytical Results 2
ES.4 Conclusions 5
1.0 Project Introduction 1-1
1.1 Purpose and Scope 1-1
1.2 Project Specific Data Quality Objectives 1-1
1.3 Field Project Personnel/Organization 1-2
1.4 Report Organization 1-2
2.0 Project Scope 2-1
2.1 Task 8.2 – Monitoring Well Installation 2-1
2.2 Task 8.3 – Aquifer Testing 2-2
2.3 Task 8.4 – Spring/Summer 2011 Groundwater Sampling and Analysis 2-2
2.4 Seep Sampling 2-3
2.5 Task 8.5 – City of Lockport Sewer Sampling and Analysis 2-3
2.6 Task 8.6 – Disposal of Investigation Derived Waste Generated During Current Field Investigation 2-4
3.0 Field Procedures 3-1
3.1 Utility Clearances 3-1
3.2 Boring and Well Installation 3-1
3.3 Geotechnical Sample Collection 3-2
3.4 Monitoring Well Development 3-2
3.5 Aquifer Tests 3-3
3.6 Groundwater Sampling 3-4
3.7 Seep Sample Collection 3-6
3.8 Off-Site Sewer Sample Collection 3-6
3.9 Analytical Program 3-6
3.10 Investigation Derived Waste Disposition 3-7
4.0 Geology, Hydrogeology, and Analytical Results 4-1
4.1 Regional Geology and Hydrogeology 4-1
4.1.1 Site Geology 4-2
4.1.2 Site Hydrogeology 4-4
4.1.2.1 Groundwater Flow 4-5
4.1.2.2 Hydraulic Conductivity 4-6
4.2 Extent of Contamination 4-7
4.3 Geotechnical Results 4-8

4.4 Uranium Geochemistry 4-9
4.4.1 Uranium Solubility and Speciation 4-10
4.4.2 Oxidation Reduction Conditions 4-11
4.4.3 Uranium Mobility 4-14
4.5 Sanitary Sewer Sampling Results 4-15
5.0 Revised Conceptual Site Model 5-1
6.0 Conclusions 6-1
7.0 References 7-1

List of Tables

(presented after Text)

Table 2-1 Field Parameters

Table 3-1 IDW Sample Results - Solids
Table 3-2 IDW Sample Results - Liquids

Table 4-1 Monitoring Well Construction, Elevation and Gauging Data Summary
Table 4-2 Hydraulic Conductivity Data Summary
Table 4-3 Groundwater Analytical Results – Uranium (Unfiltered and Filtered)
Table 4-4 Bulk Density and Effective Porosity
Table 4-5 Kd Analysis
Table 4-6 Groundwater Analytical Results - Isotopic Uranium
Table 4-7 Groundwater Analytical Results - VOCs
Table 4-8 Groundwater Analytical Results - Metals (Unfiltered and Filtered)
Table 4-9 Groundwater Analytical Results - Anions
Table 4-10 Sewer Sample Results - Solid
Table 4-11 Sewer Sample Results - Liquid

List of Figures

(presented after Tables)

Figure 1-1 Site Location Map

Figure 2-1 Site Plan with Monitoring Well Locations (September 2011)
Figure 2-2 Sanitary Sewer Sample Locations, July 2011

Figure 4-1 Soil Overburden Thickness Map
Figure 4-2 Top of Rock Surface Elevation Contour Map
Figure 4-3 Geologic Cross Section Locator Map
Figure 4-4 Cross Section A-A'
Figure 4-5 Cross Section B-B'
Figure 4-6 Cross Section C-C'
Figure 4-7 Cross Section D-D'
Figure 4-8 Cross Section E-E'
Figure 4-9 Half-Mile Radius Rose Diagram and One-Mile Radius Rose Diagram
Figure 4-10 Groundwater Levels Relative to Bedrock Surface
Figure 4-11 Groundwater Vertical Gradients
Figure 4-12 Potentiometric Surface Map – Shallow Wells, August 3, 2011
Figure 4-13 Potentiometric Surface Map – Deep Wells, August 3, 2011
Figure 4-14 Hydraulic Conductivity Distribution Map – Shallow Bedrock Wells
Figure 4-15 Hydraulic Conductivity Distribution Map – Deep Bedrock Wells
Figure 4-16 Total Uranium in Shallow Groundwater (August 2011)
Figure 4-17 Total Uranium in Deep Groundwater (August 2011)
Figure 4-18 Total Uranium (Filtered) in Groundwater (September 2009)
Figure 4-19 Total Uranium (Filtered) in Groundwater (September 2010)
Figure 4-20 ICP vs. ISO. Converted Isotopic Uranium vs. ICP-MS Uranium Results for 2011 Filtered Groundwater Samples
Figure 4-21 ^{234}U vs. ^{238}U Activities in 2011 Filtered Groundwater Samples
Figure 4-22 Unfiltered Uranium vs. Filtered/Unfiltered Ratios in 2011 Groundwater Samples
Figure 4-23 Uranium Eh-pH Diagram
Figure 4-24 VOCs in Shallow Groundwater (August 2011)
Figure 4-25 VOCs in Deep Groundwater (August 2011)
Figure 4-26 Stiff Diagrams for Shallow Wells (August 2011)
Figure 4-27 Stiff Diagrams for Deep Wells (August 2011)
Figure 4-28 Dissolved Oxygen vs. Eh
Figure 4-29 Unfiltered Iron vs. Filtered/Unfiltered Ratios in 2011
Figure 4-30 Sanitary Sewer Sampling Results, July 2011

Figure 5-1 Revised Conceptual Site Model

List of Appendices

Appendix A Daily Reports and Field Notes (Provided on CD)

Appendix B Photographs (Provided on same CD as Appendix A)

Appendix C Boring Logs (Provided on same CD as Appendix A)

Appendix D Well Development Records (Provided on same CD as Appendix A)

Appendix E Slug Test Data Plots (Provided on same CD as Appendix A)

Appendix F Sample Collection Logs (Provided on same CD as Appendix A)

Appendix G Analytical Data (Provided on same CD as Appendix A)

Appendix H Data Validation Reports (Provided on same CD as Appendix A)

Appendix I IDW Bill of Lading (Provided on same CD as Appendix A)

Appendix J Geotechnical Report (Provided on same CD as Appendix A)

Appendix K Historical Documents (Provided on same CD as Appendix A)

Appendix L Evaluation of Uranium Concentration Trends

Acronyms and Abbreviations

µg/L	micrograms per liter
µm	micrometer
AGC	Army Geospatial Center
ASTM	American Society for Testing and Materials
ATI	Allegheny Technologies Inc.
bgs	below ground surface
CSM	conceptual site model
DGI	Data Gap Investigation
DO	dissolved oxygen
DQOs	data quality objectives
Eh	true redox potential
EM	Engineer Manual
FS	Feasibility Study
FSP	Field Sampling Plan
ft	feet or foot
FUSRAP	Formerly Utilized Sites Remedial Action Program
g/cm^3	grams per cubic centimeter
Guterl Steel Site	Guterl Specialty Steel Corporation Site
GWB	Geochemist's Workbench
HASP	Health and Safety Plan
ICP/MS	Inductively Coupled Plasma/Mass Spectrometer
ID	inside diameter
IDW	Investigation Derived Waste
IIWA	Immediate Investigative Work Assignment
Kd	partition coefficient
Kg	kilogram(s)
mg/L	milligrams per liter
mL/g	milliliter per gram
mrem	millirem
msl	mean sea level
mV	millivolts
NYSDEC	New York State Department of Environmental Conservation
ORP	oxidation reduction potential
pCi/g	picoCuries per gram
pCi/L	picoCuries per liter
PID	photoionization detector
PVC	polyvinyl chloride
QAPP	Quality Assurance Project Plan
redox	oxidation reduction
RI	Remedial Investigation
RQD	Rock Quality Designation
RPP	Radiological Protection Plan
Shaw	Shaw Environmental & Infrastructure, Inc.

Acronyms and Abbreviations Continued

Simonds	Simonds Saw and Steel Company
Th	thorium
U	uranium
U.S.	United States
USACE	United States Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VOCs	volatile organic compounds

Executive Summary

ES.1 Project Introduction

This Data Gap Investigation (DGI) Technical Memorandum has been prepared by Shaw Environmental & Infrastructure, Inc. (Shaw) for the former Guterl Specialty Steel Corporation Formerly Utilized Sites Remedial Action Program (FUSRAP) Site (Guterl Steel Site) in Lockport, New York.

The purposes of this investigation were to:

- Provide the additional data needed to assess the extent of impact to groundwater at the Guterl Steel Site by uranium.
- Further delineate the Guterl Steel Site conditions which control the mobility and fate and transport of the contaminants in groundwater.

ES.2 Project Scope

The following tasks were performed as part of the DGI:

Monitoring Well Installation

To delineate the vertical and horizontal extent of groundwater contamination and to characterize bedrock and hydrogeologic conditions at the Guterl Steel Site, 12 deep bedrock wells and 5 additional shallow wells were installed. Continuous overburden sampling and bedrock coring were performed for each monitoring well location.

Aquifer Testing

Aquifer testing for hydraulic conductivity was conducted at each of the 17 newly installed monitoring wells. Depending upon the hydraulic conditions encountered, either a set of manual falling and rising head tests or a pneumatic rising head test were performed.

Spring/Summer 2011 Groundwater Sampling and Analysis

A total of 51 wells and 2 seep locations were sampled. Laboratory analysis of groundwater samples from 51 monitoring wells and 2 seep locations was conducted for the following parameters:

- Total uranium – filtered and unfiltered
- Isotopic uranium – filtered and unfiltered
- Target Analyte List (metals) – filtered and unfiltered

- Anions (chloride, fluoride, sulfate, nitrate, nitrite, and ortho-phosphate) – unfiltered
- General chemistry (alkalinity, total dissolved solids) – unfiltered

Laboratory analysis of unfiltered groundwater samples from 35 locations was conducted for volatile organic compounds (VOCs). These locations included 16 existing wells that have historical VOC impacts, all 17 newly installed wells, and the 2 seep locations.

Radiological groundwater data validation was performed by a third party validator, Kestrel Environmental Technologies, Inc.

City of Lockport Sewer Sampling and Analysis

Off-site sewer samples were collected from the City of Lockport industrial sewer line downgradient of the site as follows:

- One sludge/sediment sample and one wastewater sample were collected from two sanitary sewer manholes.
- Each sludge/sediment and wastewater sample was analyzed for isotopic uranium (U) and isotopic thorium (Th).

Disposal of Investigation Derived Waste Generated During Current Field Investigation

Investigation Derived Waste (IDW) generated during the field investigation consisted of solids (e.g., soil drill cuttings) and liquids (e.g., water from decontamination, well development, and well purging operations). The IDW was sampled and analyzed, then transported to a properly licensed facility for disposal (U.S. Ecology Texas, Inc.).

ES.3 Geology, Hydrogeology, and Analytical Results

This section provides a discussion of the results of the DGI, including geology, hydrogeology, the extent of contamination, and a geochemical evaluation.

Site Geology

Unconsolidated materials overlying the bedrock surface at the Guterl Steel Site have been characterized as relatively thin to discontinuous layers of glaciolacustrine deposits, glacial till, and fill material (overburden soil). Native soils consist of silts and clays with varying amounts of sand and bedrock fragments. The fill material, where encountered, has been described as coal fragments, apparent ash and coke fragments, and brick or crushed stone. The overburden thickness in borings completed in 2011 ranged from 1.7 to 7.6 feet (ft). For discussion purposes in this document, these unconsolidated materials will be named the overburden soil.

Bedrock underlying the overburden soil at the Guterl Steel Site was described as medium gray to light gray dolomite. The upper part of the dolomite, identified as shallow weathered bedrock in this document was observed to contain numerous horizontal fractures. Vertical and angled

fractures with much less frequency were also identified. Many of the fractures were noted to be weathered and/or clay filled. The lower portion of the bedrock, starting at depths of 20 to 25 ft below the overburden and shallow weathered bedrock interface, is not weathered and has distinct fractures; however, the fracture density is lower than that in the shallow weathered bedrock and decreases with depth. This zone is called the first main fracture zone, and extends to a depth of approximately 40 ft below the bottom of the shallow weathered bedrock. The first main fracture zone is underlain by shaly dolostone, and is estimated to be 20 to 30 ft thick with few to no fractures. The shaly dolostone in turn is underlain by Rochester Shale.

The stratigraphic order at the site, starting from ground surface is summarized follows:

- Overburden soil
- Shallow weathered bedrock (shallow groundwater)
- First main fracture zone (deep groundwater)
- Shaly dolostone (no monitoring wells installed)
- Rochester Shale (no monitoring wells installed)

Site Hydrogeology

Depths to water in the shallow bedrock wells during the August 2011 gauging event ranged from 3 ft below ground surface (bgs) to 10.5 ft bgs. The shallow groundwater wells are installed in the shallow weathered bedrock. Water levels in the deep bedrock wells are more variable than in the shallow bedrock and range from 3.3 ft bgs to 35.4 ft bgs. Deep groundwater wells are installed in the first main fracture zone. Monitoring wells have not been installed in the underlying shaly dolostone or Rochester Shale.

Groundwater Flow

A groundwater divide oriented northwest to southeast originates in the northwestern area of the Guterl Steel Site. West of the divide, the groundwater flow direction is towards the quarry. South and east of the divide, groundwater flow is to the southeast towards the canal.

Hydraulic Conductivity

Results of slug tests conducted on the newly installed monitoring wells in August 2011 were reduced to obtain horizontal hydraulic conductivity values for each of the tested wells. Hydraulic conductivity values obtained for the shallow bedrock wells range from 0.024 ft/day at MW-705D to 218 ft/day at MW-3. Hydraulic conductivity values obtained for the deep bedrock wells range from 0.0009 ft/day at MW-711DD to 41.4 ft/day at MW-712DD.

Extent of Contamination

The highest uranium concentration (209 micrograms per liter [µg/L] with a concentration of 212 µg/L in the duplicate sample) detected in groundwater was in the shallow bedrock well located near the center of the Guterl Steel Site. Concentrations greater than 90 µg/L were detected north of Buildings 14 and 37 and appear to trend in a northwest to southeast direction

across the Guterl Steel Site towards the canal. A concentration of 44.9 µg/L was detected at the furthest existing downgradient sampling point (Seep 01 on the wall of the Erie Canal) characterized to be a potential discharge point for shallow groundwater. The distribution of uranium in deep groundwater appears in a similar orientation as the shallow groundwater; however, the plume is much smaller. The highest concentration (67 µg/L) detected in a deep well came from a location near the southeastern Guterl Steel Site boundary.

Uranium Geochemistry

Uranium concentrations in the 57 filtered groundwater samples (including duplicates) were determined by Inductively Coupled Plasma/Mass Spectrometer (ICP/MS) method. These samples were also analyzed for uranium via alpha spectroscopy, which determines the individual activities of the ^{234}U, ^{235}U, and ^{238}U isotopes. Comparison of uranium concentrations by the two different analytical methods indicates close agreement and a lack of bias in either method.

The isotopic uranium results indicate that only natural uranium was present in the samples (depleted, enriched, or recycled uranium was not identified in the samples).

Uranium detected in the 2011 samples was predominantly present in a dissolved state.

The mobility of uranium in groundwater is the most sensitive to oxidation reduction (redox) conditions, being very low under reducing conditions, and is much higher under oxidizing conditions. Although moderately reducing conditions exist at some locations, the uranium is predicted to be in the soluble hexavalent form at all of the sampled locations. Uranium mobility is therefore not limited by precipitation, but will be controlled by sorption along groundwater flow paths.

Sanitary Sewer Sampling Results

At the request of the City of Lockport, solid and liquid samples were collected from two sanitary sewer locations. These data were requested by the City to assess municipal worker safety.

The sample from Sewer #1 was collected from the accessible manhole closest to the facility. The sample from Sewer #2 was collected from the next accessible manhole downstream. The results for the two solid samples, Sewer #1 and Sewer #2, respectively, are 0.27 and 0.47 picoCuries per gram (pCi/g) for ^{228}Th; 0.45 and 0.32 pCi/g for ^{230}Th; 0.22 and 0.44 pCi/g for ^{232}Th; 3.55 and 4.37 pCi/g for ^{234}U; 0.2 and 0.22 pCi/g for ^{235}U; and 3.72 and 4.77 pCi/g for ^{238}U.

The results for the two liquid samples, Sewer #1 and Sewer #2, respectively, are 10.9 and 0.43 pCi/L for ^{234}U; 0.61 and 0.04 pCi/L for ^{235}U; and 10.4 and 0.44 pCi/L for ^{238}U. The isotope ^{230}Th was detected in one sample, Sewer #1, at 0.03 pCi/L. The remaining thorium isotopes were not detected.

ES.4 Conclusions

Based on the results of the DGI, the following conclusions are drawn:

- Total uranium is present at concentrations exceeding the background concentration of 10 µg/L in the deep groundwater which flows through the first main fracture zone of the competent dolostone, located between 30 and 40 ft deep, and corresponds with the screened locations of the deep monitoring wells.
- The horizontal extent of groundwater with total uranium concentrations exceeding background covers approximately one third of the area in the first main fracture zone (deep groundwater) compared to the shallow weathered bedrock (shallow groundwater). The areas exceeding background are primarily near the buildings in both zones.
- Groundwater with uranium concentrations exceeding background is discharging to the Erie Canal at the location of Seep 01.
- Hydraulic conductivity values are generally lower in the first main fracture zone (deep groundwater) than in the shallow weathered bedrock (shallow groundwater). Average and median values for hydraulic conductivity in the shallow weathered bedrock are 27.8 ft/day and 11.9 ft/day, respectively. Average and median values for hydraulic conductivity in the first main fracture zone (deep bedrock) are 7.5 ft/day and 3.2 ft/day, respectively. The geometric means of hydraulic conductivity values in the shallow weathered bedrock and the first main fracture zone are 10 ft/day and 1 ft/day, respectively.
- The difference in hydraulic conductivities between the shallow weathered bedrock and the first main fracture zone was reflected in the production rates measured in monitoring wells during well development and sampling, and response times to slugs during slug testing, therefore confirming the interpretation of slug test data.
- Geotechnical test data indicate that partition coefficient (Kd) values ranged from 1,052 milliliter per gram (mL/g) to 95,667 mL/g, with an average value of 17,699 mL/g and a geometric mean value of 5,722 mL/g. The Kd values reported in this report were derived from soil samples that were collected in unsaturated soil overlying the shallow groundwater present in the shallow weathered bedrock. These Kd values represent the potential for the infiltrating rainwater to desorb uranium from the unsaturated soil and leach into the underlying groundwater. The soil samples used for the Kd analysis were collected from areas where the soil uranium concentrations were less than the source area soils and, therefore, may not directly indicate the desorption potential for uranium in the source areas.

- These values indicate that total uranium will preferentially remain bound to soil instead of desorbing to recharge water and leaching to groundwater.
- Groundwater flow directions in the first main fracture zone (deep groundwater) are generally consistent with groundwater flow in the shallow weathered bedrock (shallow groundwater). Groundwater flow in both zones is generally to the south, but to the southeast toward the Erie Canal on the eastern part of the site and to the southwest toward the quarry on the western part of the site.
- The uranium isotope ratios are consistent with naturally occurring uranium (^{234}U and ^{238}U are present at equal concentrations by activity), indicating the uranium processed at the site was neither enriched nor depleted.
- Comparison of filtered and unfiltered total uranium results indicates most of the uranium present is dissolved. Approximately 98 percent of the total uranium was in the dissolved form in the samples collected.
- Geochemical conditions in the aquifer indicate total uranium will remain in a soluble form at all locations investigated. Redox conditions do not favor uranium precipitation.

The horizontal and vertical extent of uranium exceeding background has not been completely defined. Vertically, the DGI results determined that uranium impacted groundwater occurs in the deep groundwater flowing through the first main fracture zone of the competent dolostone that underlies the shallow weathered bedrock (shallow groundwater), where uranium contaminated groundwater was documented to be present during the remedial investigation (RI). There is another 40 to 45 ft of dolostone and shaly dolostone between the bottom of first main fracture zone of the competent dolostone and the Rochester Shale where the presence or absence of uranium impacted groundwater has not been determined.

Groundwater flow was observed to discharge at two locations along the northern rock face of the Erie Canal. This discharge represents a fraction of the groundwater flow that exits in the shallow and the deep groundwater units underneath the site. Data collected during the DGI has not established the flow path where the remainder of the groundwater exits; potential routes include discharge to the quarry, flow underneath the Erie Canal, and flow to the regional groundwater system through fractures in the dolostone and shaly dolostone that underlie the first main fracture zone of the competent dolostone.

The DGI results provide data on deep groundwater flow in the first main fracture zone of the competent dolostone, hydraulic conductivity and geotechnical data, nature and extent of total uranium shallow and deep groundwater plumes in the shallow weathered bedrock and the in the first main fracture zone of the competent dolostone, lithological characteristic of the rock units, and information on the locations of water producing fractures. Although there are gaps in data on horizontal and vertical characterization, the additional data collected during this investigation

is sufficient to develop a numerical groundwater model for the site that will allow evaluation of groundwater flow and transport.

1.0 Project Introduction

This Data Gap Investigation (DGI) Technical Memorandum has been prepared by Shaw Environmental & Infrastructure, Inc. (Shaw) for the former Guterl Specialty Steel Corporation Formerly Utilized Sites Remedial Action Program (FUSRAP) Site (Guterl Steel Site) in Lockport, New York (Figure 1-1).

1.1 Purpose and Scope

In accordance with the United States Army Corps of Engineers (USACE), Buffalo District Contract Number W912QR-08-D-0013, Delivery Order No. DN03, Shaw has prepared this DGI Technical Memorandum to document the collection of additional data to be used in the preparation of the Feasibility Study (FS) for the Guterl Steel Site, previously known as the Simonds Saw and Steel Company (Simonds).

The focus of this DGI Technical Memorandum is on the information needed to support the selection of a remedial action for impacted media at the Guterl Steel Site, in accordance with the USACE, Buffalo District, *Scope of Work, Data Gap Investigation to Support the Feasibility Study for the Former Guterl Specialty Steel Corporation, Lockport, New York*, dated March 2011.

Specifically, the purposes of this investigation were to:

- Provide the additional data needed to assess the extent of impact to groundwater at the Guterl Steel Site by uranium.
- Further delineate the Guterl Steel Site conditions that control the mobility and fate and transport of the contaminants in groundwater.

The following tasks are addressed in this DGI Technical Memorandum:

Task 8.2 Monitoring Well Installation

Task 8.3 Aquifer Testing

Task 8.4 Spring/Summer 2011 Groundwater Sampling and Analysis

Task 8.5 City of Lockport Sewer Sampling and Analysis

Task 8.6 Disposal of Investigation Derived Waste (IDW) Generated During Current Field Investigation

1.2 Project Specific Data Quality Objectives

The overall objective of the DGI was to address those data gaps identified by the previously performed Data Gap Analysis. This objective was accomplished through the collection of additional data that will be used in the preparation of the FS and a groundwater model for the

Guterl Steel Site. To achieve this general objective, nine specific data quality objectives (DQOs) were developed to guide the collection of data.

- DQO 1 – Identify the horizontal and vertical extent of uranium in groundwater and determine if these levels meet Applicable or Relevant and Appropriate Requirements.
- DQO 2 – Determine if hydrologic controls on the migration of uranium in groundwater, including impacts from local pumping, have been identified to a sufficient level to support the construction of a three-dimensional groundwater model.
- DQO 3 – Determine if geochemical controls on the migration of uranium in groundwater have been identified to a sufficient level to support the construction of a three-dimensional groundwater model.
- DQO 4 – Determine if the volatile organic compounds (VOCs) that have impacted groundwater may be affecting the mobility of uranium.
- DQO 5 – Determine if uranium-impacted groundwater is seeping into the Erie Canal.
- DQO 6 – Determine the horizontal and vertical variation in the hydraulic conductivity of the water bearing units to support the development of the three-dimensional groundwater model.
- DQO 7 – Determine the vertical hydrogeologic boundary for groundwater flow and migration of uranium-impacted groundwater.
- DQO 8 – Determine the effects of seasonal changes in groundwater levels on the mobility of uranium in groundwater.

1.3 Field Project Personnel/Organization

Staff responsibilities were generally consistent with those provided in Section 2 of the Addendum to the Field Sampling Plan (FSP) (USACE, 2011a) and the Remedial Investigation (RI) FSP (2007) (USACE, 2007). Mr. Kevin Cronin served as the Site Supervisor and Mr. Trenton Richards served as the Radiation Control Technician. Mr. Cronin and Mr. Richards are geologists and Site Safety and Health Officer trained.

1.4 Report Organization

The following sections are provided in this DGI Technical Memorandum:

Section 1.0 Project Introduction

Section 2.0 Project Scope

Section 3.0 Field Procedures

Section 4.0 Results

Section 5.0 Revised Conceptual Site Model

Section 6.0 Conclusions

Section 7.0 References

In addition, the findings in this document are supported by information in the following appendices:

Appendix A Daily Reports and Field Notes

Appendix B Photographs

Appendix C Boring Logs

Appendix D Development Field Records

Appendix E Slug Test Data Plots

Appendix F Sample Collection Logs

Appendix G Analytical Data

Appendix H Data Validation Reports

Appendix I Investigative Derived Waste (IDW) Bill of Lading

Appendix J Geotechnical Report

Appendix K Historical Documents

Appendix L Evaluation of Unranium Concentration Trends

2.0 Project Scope

The following sections identify the tasks performed during the summer and fall of 2011 for this DGI Technical Memorandum. Work was performed at the Guterl Steel Site in accordance with the accepted Health and Safety Plan (HASP) and the task-specific Radiological Protection Plan (RPP) included in that HASP. The RPP was developed in accordance with USACE Engineer Manual (EM) 385-1-1 and 10CFR20, and previous survey and chemical and radiological sampling results from those locations on site. Chemical and radiological action levels were identified and instrumentation selected to adequately monitor the worksite with respect to these action levels during task activities. Project staff was briefed to the project requirements and a qualified Radiological Control Technician performed ongoing chemical and radiological monitoring. The results were reviewed daily by the project Certified Health Physicist. No results above the action levels were detected during the execution of the task. Thus, no increase in health and safety or radiological controls was warranted during completion of the task. Daily Reports and Field Notes are presented in Appendix A and photographs are in Appendix B.

2.1 Task 8.2 – Monitoring Well Installation

To delineate the vertical and horizontal extent of groundwater contamination, and to characterize bedrock and hydrogeologic conditions at the Guterl Steel Site, 12 deep monitoring wells and 5 shallow wells were installed at the locations shown on Figure 2-1. Well identification was consistent with previous investigations (USACE, 2007). Shallow bedrock wells correspond to the "D" wells (top of bedrock) installed during the RI. The deep bedrock wells were designated as "DD". The post-RI wells were designated as the 700-series.

Eight of the deep bedrock wells were installed at locations that coincide with existing shallow weathered/fractured bedrock wells MW-2, MW-13D, MW-19, MW-26, MW-602D, MW-604D, MW-605D, and MW-607D. At two of the deep bedrock well locations, next to existing wells MW-13S/D and MW-604D, the borings for the wells were drilled to the top of the Rochester Shale to define the lithology and fracture zones beneath the Guterl Steel Site. In addition to these eight deep bedrock wells, five additional pairs of shallow and deep bedrock monitoring wells were originally planned (MW-705D/MW-705DD, MW-710D/DD, MW-711D/DD, MW-712D/DD, and MW-713D/DD). However, several of the downgradient locations were adjusted due to off-site property access problems. As a result, MW-713DD was not installed because of its proximity to MW-708DD. A total of 17 wells were installed. The boring logs are presented in Appendix C.

As described in Section 3, continuous overburden sampling and bedrock coring were performed for each monitoring well location. Unconsolidated overburden soil samples were collected at the eight new on-site deep bedrock well locations. Each sample was submitted for laboratory analysis for bulk density and the uranium partition coefficient (Kd). In addition, effective

porosity was calculated at each location. The monitoring wells were developed and surveyed for location and elevation. The well development records are presented in Appendix D.

2.2 Task 8.3 – Aquifer Testing

Aquifer testing (described in Section 3.6) for hydraulic conductivity was conducted at each of the 17 newly installed monitoring wells. Depending upon the hydraulic conditions encountered, either a set of manual falling and rising head tests or a pneumatic rising head test were performed. Manual falling head tests were only conducted if the well screens were fully submerged.

Pneumatic slug testing apparatus was used, provided that the conditions were appropriate for the use of the pneumatic slug test technique (e.g., the monitoring well screens were fully submerged and the pneumatic setup was able to sustain pressurization).

Time-drawdown data were collected using an automated data-logger and downloaded to an electronic file. The slug test data were analyzed to calculate the hydraulic conductivity at each monitoring well. The slug test data plots are presented in Appendix E.

2.3 Task 8.4 – Spring/Summer 2011 Groundwater Sampling and Analysis

A comprehensive round of groundwater samples was collected in August 2011, after the new monitoring wells were installed. A total of 51 wells (Figure 2-1) were sampled using the procedures described in Section 3.7. The sample collection logs are presented in Appendix F and the laboratory quality reports are presented in Appendix G. Activities included the following:

- Headspace readings from each well using a photoionization detector (PID) prior to sample collection.
- Field parameter measurements at each well, including temperature, pH, dissolved oxygen (DO), oxidation reduction potential (ORP), turbidity, and specific conductivity (Table 2-1).
- Low-flow sampling at each well.
- Laboratory analysis of groundwater samples from 51 monitoring wells and 2 seep locations for the following parameters:
  - Total uranium – filtered and unfiltered
  - Isotopic uranium – filtered and unfiltered
  - Target Analyte List (metals) – filtered and unfiltered
  - Anions (chloride, fluoride, sulfate, nitrate, nitrite, and ortho-phosphate) – unfiltered
  - General chemistry (alkalinity, total dissolved solids) – unfiltered.

- Laboratory analysis of groundwater samples from 35 locations for VOC-unfiltered. These locations included 16 existing wells that have historical VOC impacts, all 17 newly installed wells, and the 2 seep locations. The wells that were included for VOC analysis were selected in consultation with the USACE following installation of the new monitoring wells.
- Radiological groundwater data validation by a third party validator, Kestrel Environmental Technologies, Inc. The data validation reports are presented in Appendix H.

2.4 Seep Sampling

A reconnaissance survey was conducted on September 8, 2011 to document the locations of groundwater seeping into the Erie Canal, and to collect samples representing the discharge of site groundwater to the Erie Canal. The canal walls were visually inspected for evidence of seeping groundwater along an approximate 0.75-mile section of the Erie Canal, which was bounded by the Lockport Bypass located upstream of the Guterl Steel Site, and Stevens Street bridge located downstream of the site. No seeps were observed along the southern rock face of the Erie Canal, while seeps were observed at two locations along the northern rock face of the Erie Canal.

Seep samples were collected at Seep 01 and Seep 02 by the USACE (Figure 2-1) for the analysis of general chemistry parameters (unfiltered samples), total uranium (filtered and unfiltered samples), metals (filtered and unfiltered samples), and VOCs (unfiltered samples). Shaw provided sample bottles, sample filtration, and a Geologist for recording information needed for the FS such as stratigraphy, locations, and frequency of seeps. Seep 01 was located approximately 300 feet (ft) downstream of a pipeline crossing the Erie Canal, approximately 6 ft above the water surface in the Erie Canal, while Seep 02 was located approximately 150 ft downstream of the Lockport Bypass approximately 5 ft above the water surface in the Erie Canal. The water elevation in the Erie Canal was determined to be 565.7 ft above mean sea level (msl) by referencing to the gauge reading at Lock 35, approximately 1.75 miles downstream of the Guterl Steel Site. The elevations of the two seeps are higher than the elevation of the base of the shallow bedrock, indicating that groundwater from the shallow bedrock zone (fractured dolostone) may be discharging as seeps to the Erie Canal.

2.5 Task 8.5 – City of Lockport Sewer Sampling and Analysis

One sludge/sediment sample and one wastewater sample were collected from the two sanitary sewer manholes shown on Figure 2-2, City of Lockport Utility Sampling Locations. Turbidity measurements were collected and recorded during sample collection. Each sludge/sediment and wastewater sample was analyzed for isotopic uranium and isotopic thorium (Th).

2.6 Task 8.6 – Disposal of Investigation Derived Waste Generated During Current Field Investigation

IDW generated during the field investigation consisted of solids (e.g., soil drill cuttings) and liquids (e.g., water from decontamination, well development, and well purging operations). The IDW was sampled and analyzed, then transported to a properly licensed facility for disposal (U.S. Ecology Texas, Inc.). The bill of lading for the IDW is presented in Appendix I.

3.0 Field Procedures

Information presented in this section pertains to field activities conducted from June to September 2011. Field activities and analytical procedures were performed in accordance with the *Sampling and Analysis Plan Addendum* (USACE, 2011 a,b,c), which includes:

- Volume 1 – FSP
- Volume 2 – Quality Assurance Project Plan (QAPP)
- Volume 3 – Accident Prevention Plan

These documents incorporate applicable sections of the RI FSP (USACE, 2007). Field procedures are discussed in the following sections.

3.1 Utility Clearances

The newly installed monitoring wells are located both on and off site (Figure 2-1). All drilling locations were staked, and a site survey was performed to identify signs of buried or overhead utilities in the vicinity of the drilling locations. Prior to any subsurface investigation, public utilities (water, gas, electric, phone, etc.) were located and marked. The one-call Dig Safely New York Center was utilized to clear areas in public domain. In addition, the Site Manager for Allegheny Technologies Inc. (ATI) Allvac, Reg Buri, was consulted on the issue of underground utilities.

After all mark outs were completed, and the boring locations were accepted by the Field Geologist, each borehole location was cleaved with an air knife to a minimum of 5 ft below ground surface (bgs) prior to drilling.

3.2 Boring and Well Installation

Continuous overburden sampling and bedrock coring were performed for each monitoring well location. At two of the deep well locations, next to existing wells MW-13D and MW-604D, the borings for the wells were drilled to the top of the Rochester Shale to define the lithology and fracture zones beneath the Guterl Steel Site.

Boreholes were advanced through the overburden to the top of bedrock using 6-1/4-inch inside diameter (ID) hollow stem augers, producing a borehole of approximately 10 inches outside diameter. A permanent 4-inch ID steel casing was grouted into place and allowed to cure for a minimum of 24 hours. The bedrock borehole was then advanced using an HQ-wireline coring system producing a nominal 3-15/16-inch diameter open-bedrock borehole. As performed for prior investigations, 2-inch ID polyvinyl chloride (PVC) screen and riser monitoring wells were installed in the open-bedrock borehole and permanent casing.

Shallow bedrock wells were screened within the upper 10 ft of the shallow weathered bedrock to be consistent with existing monitoring wells installed during the 2004 New York State

Department of Environmental Conservation (NYSDEC) Immediate Investigative Work Assignment (IIWA), the 2006 NYSDEC RI/FS, and the USACE RI. Deep wells were installed in the first water-bearing unit in competent bedrock. Completed wells were surveyed for horizontal location and elevation by McIntosh & McIntosh, P.C. of Lockport, New York.

Protective covers were placed at each well. A flush-mount protective cover was used in some locations in place of the protective casing. Flush-mount wells were completed with at least an 8-inch diameter traffic rated vault.

3.3 Geotechnical Sample Collection

Unconsolidated overburden soil samples were collected for geotechnical analysis at eight deep bedrock well locations, which were all located within the property boundary. Samples were collected from the overburden soil at the following locations and depth intervals:

Boring	Overburden thickness (ft)	Sample depth (ft below ground surface [bgs])
701DD	7.6	5-7
702DD	4	2-4
703DD	2	0-2
704DD	4	0-2
706DD	6.5	4.5-6.5
707DD	3.4	0.5-2.5
708DD	1.8	0-2
709DD	2.4	0-2

Geotechnical samples were collected in an undisturbed state to the extent possible, using a 3-inch diameter split-spoon sampler with acetate liners. After the acetate tubes were removed from the split-spoon, the ends were capped, and orientation arrows were drawn. The measured sample lengths ranged from 5.8 inches to 16.4 inches, and the sample weights ranged from 0.46 Kilograms (Kg) to 1.9 Kg. Void spaces at the top and the bottom of the tubes were filled with inert material, and the ends of the tubes were sealed to prevent shifting and dehydration during shipment. No refrigeration or icing was required for the geotechnical soil samples. The geotechnical laboratory report is presented in Appendix J.

3.4 Monitoring Well Development

The development of monitoring wells was initiated no less than 48 hours after placement of the grout seal. Data were recorded on a Monitoring Well Development Record Form (Appendix D).

Well development was conducted by bailing or using a submersible pump and surge block to aid in the removal of sediment from the well and filter pack.

Development of each monitoring well proceeded until each of the following criteria was achieved:

- Water was clear to the unaided eye
- The sediment thickness remaining within the well was less than 0.1 ft
- A maximum of one 55-gallon drum of development water had been removed
- Equalization of required water quality parameters (for three consecutive readings at a frequency of one reading per well volume) was achieved for:
  - pH (variation ± 0.2 units)
  - DO (variation ± 10 percent)
  - Specific conductivity (variation ± 3 percent)
  - Temperature (variation ± 1 degree Centigrade)
  - Turbidity (variation ± 10 percent)
  - ORP (variation ± 10 millivolts)

3.5 Aquifer Tests

A slug test was performed at each of the 17 newly installed monitoring wells. Slug tests were conducted by instantaneously (or nearly instantaneously) changing the water level in each monitoring well by displacing a volume of water and then monitoring the water level recovery. Slug tests were performed during either falling or rising head within a monitoring well, and if applicable, during both falling and rising heads.

Manual or pneumatic slug tests were conducted at each location, depending upon the hydraulic conditions encountered. Pneumatic slug tests were performed because this test procedure provides more accurate results in highly transmissive formations. The following guidelines were used to determine the type of slug test performed:

- At monitoring wells where the screens were fully submerged in groundwater, a pneumatic slug testing apparatus was used, provided that the pneumatic setup was able to sustain pressurization. The pneumatic apparatus was used to depress the groundwater followed by the performance of a rising head slug test.
- At wells where the screens were fully submerged in groundwater, but the pneumatic slug testing apparatus was unable to sustain pressurization, the slug test was conducted by using a physical slug that was manually introduced and then removed from the monitoring well. A set of rising and falling head slug tests were conducted.

- At wells where the screens were partially submerged in groundwater, the slug test was conducted by using a physical slug that was manually removed from the monitoring well. Only a rising head slug test was conducted, since the falling head test is not accurate for situations where the screens are partially submerged in groundwater.

In addition to the FSP, the procedures outlined in American Society for Testing and Materials (ASTM) D 4044 - 96 (2008): *Standard Test Method for (Field Procedure) Instantaneous Change in Head (Slug) Tests for Determining Hydraulic Properties of Aquifers,* were used to perform the slug tests. For pneumatic slug tests, the procedures outlined in ASTM D 7242 - 06 (2006): *Standard Practice for Field Pneumatic Slug (Instantaneous Change in Head) Tests to Determine Hydraulic Properties of Aquifers with Direct Push Ground Water Samplers,* was followed. The Pneumatic Hi-K™ Slug Assembly manufactured by Midwest Geoscience Group was utilized for the performance of the pneumatic slug test. This assembly uses air pressure to lower the water level in the monitoring well and a valve to instantaneously release the pressure.

Time-drawdown data were collected using an automated data-logger contained within a pressure transducer that was installed in each monitoring well prior to the performance of the slug test. The data were downloaded to an electronic file for access and future use of data.

The slug test data were analyzed to calculate the hydraulic conductivity at each monitoring well. Analysis of the slug test was performed using procedures presented in Shaw Standard Operating Procedure EI-GS045 and ASTM D 5912 - 96 (2004): *Standard Test Method for (Analytical Procedure) Determining Hydraulic Conductivity of an Unconfined Aquifer by Overdamped Well Response to Instantaneous Change in Head (Slug)*. The software program AQTESOLV™, using input data from the data logger and well construction details from monitoring well diagrams, was used to analyze the test data.

3.6 Groundwater Sampling

One round of groundwater samples was collected during the DGI. Collection of groundwater samples from monitoring wells involved three general steps: (1) well purging, (2) measurement and stabilization of field parameters, and (3) groundwater sample collection. These are the three steps of sample collection that were consistently used at each well with adequate yield. However, at wells that purged dry, samples were collected after sufficient volume had recharged. Groundwater sampling activities followed the requirements of USACE EM 200-1-3 Engineering Design – Requirements for the Preparation of Sampling and Analysis Plans, Appendix C.2, Groundwater Sampling (USACE, 2001).

A headspace reading was collected from each well prior to sample collection. Purging of monitoring wells was accomplished using a peristaltic pump, a disposable bailer, or a low-flow submersible pump. The use of a peristaltic pump with dedicated Teflon® tubing left in the well was the preferred method (e.g., down-hole Teflon® line, flexible pump roller tube, and Teflon®

outflow tube). A bailer was used only if attempts to use a submersible pump were unsuccessful (that is, insufficient recharge).

In order to minimize the quantity of liquid IDW generated as a result of well purging, wells were micro-purged where conditions permitted, in accordance with EM 200-1-3 C.2 (USACE, 2001) as follows:

- A submersible pump or peristaltic pump was used for purging.
- Pump intake or tubing was located within the well screened interval.
- Purge rate did not exceed 100 milliliters per minute unless it was shown that higher rates would not disturb the stagnant water column above the well screen (that is, would not result in drawdown).
- Volume purged was based on the stabilization of the following required water quality parameters for three consecutive readings (measured at minimum five-minute intervals) for:
  - pH (variation ± 0.2 units)
  - DO (variation ± 10 percent)
  - Specific conductivity (variation ± 3 percent)
  - Temperature (variation ± 1 degree Centigrade)
  - Turbidity (variation ± 10 percent)
  - ORP (for data needs, not as a stabilization parameter).
- Sample collection occurred immediately after micro-purging.

Filtered and unfiltered groundwater samples were collected during the DGI. Filtered samples were collected using 0.45 micrometer (µm) disposable in-line pore filter attached to the discharge line of the pump. Filters were replaced between sample locations, and if needed, as they became restricted by solids buildup at any one location.

Unfiltered samples were collected for the following parameters:

- Anions (chloride, fluoride, sulfate, nitrate, nitrite, and ortho-phosphate)
- General chemistry (alkalinity, total dissolved solids)
- VOCs (select wells)

Filtered and unfiltered samples were collected for the following parameters:

- Total and isotopic analyses for uranium
- Target Analyte List (23 metals)

3.7 Seep Sample Collection

Seep samples were collected on August 8, 2011 using disposable sample containers provided by the laboratory. One round of samples was collected at two locations by placing a stainless steel container underneath the seep and letting the water accumulate until the desired volume was collected. The water was then transferred to the individual sample containers that were pre-filled with the required preservatives, after performing field filtration, if required for the parameter of interest.

Unfiltered samples were collected for the following parameters:

- Anions (chloride, fluoride, sulfate, nitrate, nitrite, and ortho-phosphate)
- General chemistry (alkalinity, total dissolved solids)
- VOCs

Filtered and unfiltered samples were collected for the following parameters:

- Total and isotopic analyses for uranium
- Target Analyte List (23 metals)

Filtered samples were collected using a 0.45 μm disposable in-line pore filter attached to the discharge line of a peristaltic pump. Filters were replaced between seep sample locations. The VOC samples were collected in triplicate. Chain-of-custody forms were completed, and samples were placed in coolers filled with ice prior to being shipped to the laboratory for analysis. With the exception of the filters, no wastes were generated during the sampling process.

3.8 Off-Site Sewer Sample Collection

Sewer samples were collected using a disposable sample container attached to an adjustable pole. A new container was used at each location to collect sludge/sediment and wastewater samples for analysis. The second sewer sample (Sewer 2) was collected from a location downstream from the location proposed in the DGI Work Plan (found to be under Ohio Street) that had been paved over with asphalt and could not be accessed. This second sample was collected from a manhole located in a grassy area adjacent to the Newfane Lumber Co. property, immediately east of the Guterl Steel Site. Sludge/sediment and wastewater samples were analyzed for total (unfiltered) isotopic uranium and isotopic thorium.

3.9 Analytical Program

Following collection, the samples were sent to Test America-St. Louis, in Earth City, Missouri. Courier and shipping services were provided by Test America-Buffalo, New York. Analytical methods were consistent with the methods provided in the QAPP (USACE, 2011b).

3.10 Investigation Derived Waste Disposition

A total of 15,600 pounds of non-hazardous IDW soils, and 9,200 pounds of non-hazardous IDW liquid wastes, were disposed at U.S. Ecology Texas, Inc., in Robstown, Texas. IDW sample results are presented in Tables 3-1 and 3-2.

4.0 Geology, Hydrogeology, and Analytical Results

This section provides a discussion of the results of the DGI, including the geology, hydrogeology, extent of contamination, and a geochemical evaluation.

4.1 Regional Geology and Hydrogeology

The Guterl Steel Site is located in the Erie-Ontario lowlands physiographic province. Unconsolidated glacial deposits of till and lacustrine clay, silt, and sand overlie gently dipping sedimentary rocks throughout the area. The bedrock of this region is predominantly limestone, dolostone, and shale. Middle Silurian epoch dolomite and limestone formations of the Lockport Group directly underlie the glacial sediments in the area of the Guterl Steel Site. Dolomite, shale, and limestone formations of the Clinton Group underlie the Lockport Group. Bedrock bedding generally strikes in an east-west direction and dips to the south at approximately 30 to 40 ft per mile (Johnston, 1964; La Sala, 1968; Yager and Kappel, 1987).

The uppermost bedrock formation underlying the Guterl Steel Site has been identified as the Goat Island Dolostone Formation of the Lockport Group (NYSDEC, 2000). The Goat Island Dolostone is generally a light olive-gray to brownish-gray, medium to fine crystalline, thick to massive bedded dolostone with a sugary texture. Stratigraphically below the Goat Island Formation is the Gasport Formation of the Lockport Group. The Gasport Formation contains dolomitic limestone of blue to gray color, generally coarsely crystalline but with some fine crystalline layers. Bedding is massive with discontinuous shale partings and stylolites are common. This unit is underlain by the very finely crystalline, medium to dark gray in color DeCew Dolostone of the Clinton Group. The Rochester Shale of the Clinton Group, a dark bluish to brownish gray, calcareous shale with atypical argillaceous limestone layers, underlies the DeCew Dolostone (Tesmer and Bastedo, 1981, Brett et al., 1995).

Hydrogeologic studies completed in the Niagara Falls area provide regional information on the characteristics of fracturing and groundwater flow within rocks of the Lockport Group. The major water-bearing units in the Niagara region are in the bedrock above the Rochester Shale. Groundwater within the Lockport Group occurs primarily in the secondary porosity features such as weathered surface fractures, bedding planes, vertical joints, and small cavities and vugs. The bedding planes, which transmit most of the water in the Lockport Group are relatively continuous fracture planes parallel to the natural layering of the rock. The upper 10 to 25 ft of this unit can be heavily weathered, and often contain abundant bedding planes and vertical fractures enlarged by dissolution and glacial scour (Miller and Kappel, 1987).

In the Niagara Falls area, weathered bedrock surface and horizontal fracture zones near stratigraphic contacts in the Lockport Group have been identified as principal water-bearing zones. Closely spaced horizontal fractures that are connected by high-angle fractures have been

observed. A wide range of hydraulic conductivity values obtained from slug tests (0.003 to 570 ft/day), and constant-head injection tests (0.2 to 200 ft/day) have been reported. An overpressured natural gas reservoir, which underlies the Lockport Group, restricts vertical flow of groundwater (Tepper; et.al., 1991, Yager, 1993).

4.1.1 Site Geology

Based on previous remedial investigations, unconsolidated materials overlying the bedrock surface at the Guterl Steel Site have been characterized as relatively thin to discontinuous layers of glaciolacustrine deposits, glacial till, and fill material (overburden soil). Native soils consist of silts and clays with varying amounts of sand and bedrock fragments. The fill material, where encountered, has been described as coal fragments, apparent ash and coke fragments, and brick or crushed stone. For discussion purposes in this document, these unconsolidated materials will be named the overburden soil.

In borings advanced for monitoring wells installed in 2011, a thin surficial layer of silty sand to clayey silt topsoil underlain by silty clay was encountered at most locations. Fill materials described as foundry brick, cinders, sand, and gravel were noted at several locations (701DD, 702DD, 710D, 710DD, 712D, and 713D). An interval of concrete, approximately 2-ft thick, was found in the boring for 711D at a depth of 7 to 9 ft, directly overlying the bedrock surface. Overburden soil material descriptions are presented on boring logs contained in Appendix E.

The unconsolidated soil thickness in borings completed in 2011 ranged from 1.7 to 7.6 ft. A soil (undifferentiated) overburden thickness map based on the 2011 borings, and well borings completed during previous assessments, is presented as Figure 4-1. In general, overburden is thinner in the southern part of the Guterl Steel Site and thicker in the northwest corner. Overburden thickness (Figure 4-1) is generally 4.5 to 9 ft in the northwest area of the Guterl Steel Site, 3.5 to 5 ft in the buildings area of the former facility, and 2 to 3 ft south of the buildings area. Elevation data were also used to prepare a top of bedrock surface elevation contour map presented as Figure 4-2. As shown on Figure 4-2, the top of bedrock elevation is highest in the northern area of the Guterl Steel Site and the bedrock surface slopes unevenly towards the south. A summary of the bedrock surface elevation data is contained in Table 4-1.

Bedrock underlying the Guterl Steel Site was described as medium gray to light gray dolomite; at two locations (706DD, 708DD) and the dolomite was noted as brownish gray near the top. The upper part of the dolomite, which constitutes the shallow weathered bedrock, was observed to contain numerous horizontal fractures. Vertical and angled fractures with much less frequency were also identified. Many of the fractures were noted to be weathered and/or clay filled. Vugs, calcite-filled vugs, and voids were also found generally in the upper 25 to 30 ft of bedrock.

The lower portion of the bedrock, starting at depths of 20 to 25 ft below the overburden and shallow weathered bedrock interface, is not weathered and has distinct fractures. The fracture

density in this zone is lower than that in the shallow weathered bedrock and decreases with depth. This zone is called the first main fracture zone, and extends to a depth of approximately 40 ft below the bottom of the shallow weathered bedrock. The first main fracture zone is underlain by shaly dolostone, and is estimated to be 20 to 30 ft thick with few to no fractures. The shaly dolostone in turn is underlain by Rochester Shale.

The stratigraphic order at the site, starting from ground surface is summarized follows:

- Overburden soil
- Shallow weathered bedrock (shallow groundwater)
- First main fracture zone (deep groundwater)
- Shaly dolostone (no monitoring wells installed)
- Rochester Shale (no monitoring wells installed)

Dark gray shaly dolomite was encountered in Borings 701DD and 709DD at depths of approximately 60 to 65 ft to the total depths of these borings, which were advanced to 80 ft. The shaly dolomite noted in these two borings is believed to represent a stratigraphic transition into the Rochester Shale Formation.

Geologic cross sections were constructed using subsurface information from well installations on the Guterl Steel Site. Locations of the cross sections are shown on Figure 4-3. Cross Sections A – A' through E – E' are presented as Figures 4-4 through 4-8. Cross Sections A – A' through C – C' were made to extend through the Erie Canal. The base of the canal and water levels shown in the canal are based on elevation and gauge reading data obtained from Lock 35 in Lockport. The water level shown in the canal represents the navigation season water level. From mid-November through April, the canal has an average of 2 ft of water (Rick Manns, Erie Canal Corp., Telecommunication, September 2011).

Horizontal fractures interpreted from the boring log descriptions and Rock Quality Designation (RQD) values calculated for each 5-ft rock core interval of the 2011 borings are included on the cross sections. A decrease in the density of fracturing with depth, as shown by RQD values, is apparent. A differentiation between relatively high fracture density and lower fracture density within the bedrock was made by identifying intervals where RQD is lower than or greater than 80 percent. As shown on the cross sections, bedrock intervals with lower than 80 percent RQD are generally within the top 20 to 25 ft of the bedrock surface. High fracture density zones are also present in deeper intervals at MW-708DD and MW-712DD; these high fracture density zones are shown on Cross Sections B – B' and E – E' as discontinuous zones within relatively lower fracture density bedrock.

A fracture trace analysis was conducted at the Guterl Steel Site and surrounding area by the Army Geospatial Center (AGC) to support characterization of surficial terrain features that may influence pathways for contaminant flow. The AGC report, completed in March 2010 and included in Appendix K, presents linear features discovered by examination of aerial

photographs using imagery at a scale of 1:20,000. Results of the analysis were compared to a broader study completed by New York State using imagery at a scale of 1:250,000. As would be expected, more fracture traces and lineaments are seen in a specific area if the scale is larger for that local area. Results of the AGC analysis are shown in rose diagrams presented for study areas covering a 0.5-mile and a 1-mile radius from the Guterl Steel Site. The half-mile radius study area rose diagram shows that a majority of fractures are oriented northwest-southeast and a lesser amount are oriented east-northeast/west-southwest. The one-mile radius study area diagram indicates similar orientations with the northwest-southeast and east-northeast/west-southwest components approximately equal. The five-mile study area rose diagram (from the New York State analysis) shows that a majority of the fractures are oriented east-west with much fewer northwest-southeast and east-northeast/west-southwest components. The half-mile and one-mile radius study areas showing fracture traces and corresponding rose diagrams from the AGC report are presented on Figure 4-9. A view of the fracture trace lineaments found in the Guterl Steel Site area show a general northwest-southeast fracture trace orientation pattern north of the Erie Canal and a general northeast-southwest orientation south of the canal. Also, upon inspection of individual lineaments, three northwest-southeast trending fracture traces and one northeast-southwest trending fracture trace can be observed directly on the Guterl Steel Site. Northwest-southeast trending fracture trace spacing in the Guterl Steel Site area is on the order of 200 to 1,000 ft. Northeast-southwest trending fracture trace spacing in the Guterl Steel Site area is wider, at roughly 2,000 ft. Fracture density in the Guterl Steel Site area appears greater than the surrounding area within the study area; however, housing development in the northern part of the study area may obscure the surface expression of linear features.

4.1.2 Site Hydrogeology

Hydrogeologic information on unconsolidated soil at the Guterl Steel Site is limited, mainly due to the thin to discontinuous presence of this unit. Overburden monitoring wells were installed in unconsolidated soil in the area of the landfill during previous investigations. A limited set of historical water level measurements exist for these wells. During the RI, the landfill area overburden monitoring wells were observed to be either dry (MW-13S) or in an unusable deteriorated condition (MW-81-01, MW-81-02, MW-81-04, and MW-105). Conclusions made indicate that water levels in the overburden (landfill area) fluctuate widely (up to 4 ft) with two wells going dry during the summer months (NYSDEC, 2000). Available gauging data for MW-13S indicate that groundwater has not been detected in this well. Available water level data for MW-600S indicate a water column of less than 0.6 ft. Monitoring well gauging data collected at the Guterl Steel Site on August 3, 2011 is included on Table 4-1.

Groundwater levels in the shallow bedrock monitoring wells installed in the shallow groundwater which occurs in the shallow weathered bedrock have been observed during previous investigations to stabilize at, or above, the bedrock surface at many of the well locations. Water levels in shallow bedrock monitoring wells installed in 2011 stabilized at levels 3 to 8 ft below

the top of bedrock; however, the 2011 shallow bedrock wells were installed on the southern part of the Guterl Steel Site where water levels are deeper. One shallow bedrock well (MW-712D), which was installed in 2011, was dry. Depths to water in the remaining shallow bedrock wells during the August 2011 gauging event ranged from 3 ft bgs (MW-23) to 10.5 ft bgs (MW-711D). Figure 4-10 presents a comparison of water levels in shallow bedrock monitoring wells relative to the bedrock surface. Locations where water levels are above the bedrock surface are mostly in the vicinity of the former facility buildings.

Water levels in the deep bedrock wells installed in the deep groundwater which occurs in the first main fracture zone are more variable than in the shallow bedrock and range from 3.3 ft bgs (MW-704DD) to 35.4 ft bgs (MW-707DD).

4.1.2.1 Groundwater Flow

Vertical hydraulic gradients have been calculated using August 2011 groundwater elevation data from nested shallow and deep bedrock wells (or shallow and deep wells located in close proximity). Results presented on Figure 4-11 show whether an upward (positive values) or downward (negative values) flow component is indicated and the magnitude. Most locations show a slight downward flow component or are near coincident (magnitude less than 0.01 can be considered near coincident). An upward gradient greater than 0.01 is indicated at two locations, the MW-713D/MW-708DD and the MW-711D/MW-711DD areas. A strong downward gradient (-1.39) is indicated at the MW-26/MW-707DD location, and at the MW-712D/MW-712DD location shallow groundwater is apparently drained (the shallow well is dry).

Groundwater potentiometric surface maps prepared using the August 2011 gauging data are presented as Figures 4-12 and 4-13. Shallow bedrock groundwater elevation data from wells screened within the upper 23 ft of bedrock were used to generate the map shown on Figure 4-12. This map includes data from the existing shallow bedrock wells and the five shallow bedrock wells installed in 2011. Figure 4-13 presents potentiometric surface contours using data from the 12 monitoring wells screened within the 29 to 40-ft interval (deep bedrock wells) that were installed in the first main fracture zone in 2011.

The shallow groundwater potentiometric surface map shows a generally southward flow direction with the highest groundwater elevations in the northern area of the Guterl Steel Site. A groundwater divide oriented northwest to southeast that originates in the northwestern area of the Guterl Steel Site is apparent on Figure 4-12. West of the divide, the groundwater flow direction is towards the quarry at a horizontal gradient of 0.0072 using the elevations and distance (measured along the groundwater flow path, perpendicular to the contours) from MW-18 and MW-705D. South and east of the divide, groundwater flow is to the southeast towards the canal. In the area of the former facility buildings, the horizontal gradient is relatively low at 0.0008 (measured between MW-605D and MW-25). The horizontal gradient in the shallow weathered

bedrock aquifer increases to 0.0602 (measured between MW-604D and MW-712D) south of the former buildings area towards the canal.

The deep groundwater potentiometric surface map (Figure 4-13) shows a similar pattern to the shallow groundwater contours with an apparent general groundwater flow direction to the southeast towards the canal. A relatively steep gradient is present in the vicinity of MW-703DD on the northwest area of the Guterl Steel Site. The August 2011 groundwater elevation at MW-703DD (574.39 ft msl) is much lower than elevations in the nearest deep bedrock wells MW-701DD (596.16 ft msl) and MW-705DD (591.47 ft msl), indicating a westerly groundwater flow component in that area of the Guterl Steel Site. The groundwater elevation at MW-707DD, located near the center of the Guterl Steel Site, was not used in contouring due to an anomalously low water level (561.22 ft msl) gauged in that well. The horizontal gradient on the western area of the Guterl Steel Site is 0.0633 (measured between MW-705DD and MW-703DD). The gradient in the buildings area is much lower at 0.0080 (measured between MW-704DD and MW-709DD). South of the facility, towards the canal, the gradient increases to 0.0891 (measured between MW-709DD and MW-712DD).

Based on elevations of the two seeps along the northern rock face of the canal (see Cross Sections A – A' and C – C') and elevation of the base of the shallow bedrock, groundwater from the shallow bedrock zone may be discharging to the surface as seeps. Groundwater discharge to the ground surface from the shallow weathered bedrock is likely limited by the mostly downward vertical groundwater flow gradient.

4.1.2.2 Hydraulic Conductivity

Results of slug tests conducted on the newly installed monitoring wells in August 2011 were reduced to obtain horizontal hydraulic conductivity values for each of the tested wells. Hydraulic conductivity testing was not performed at MW-707DD and MW-712D due to insufficient water column in these two wells. The test data were reduced using analytical methods appropriate for the testing situation for each well. The slug test data were reduced using Aqtesolv Pro Version 4.5 software. Analytical solutions that were utilized included the Kansas Geological Survey Model, (Hyder et. al., 1994) and Bouwer and Rice method (Bouwer and Rice, 1976). Slug test types (rising head, falling head) and analytical solutions were selected for analysis depending on the well configuration and displacement that was achieved during each test. Data from pneumatic tests were used in most cases to compute hydraulic conductivity values. Where water levels in the wells were below or near the top of the screened interval or water level recovery data contradicted observations made during well development, applicable solid slug test data were used. Results for each test reduction and average hydraulic conductivity results for each well tested are summarized on Table 4-2. Previous assessment results are also included in Table 4-2. Slug test displacement-time plots for hydraulic conductivity testing

conducted in 2011 are contained in Appendix G. Hydraulic conductivity values for each of the tested shallow and deep bedrock wells are presented on Figures 4-14 and 4-15, respectively.

Hydraulic conductivity values obtained for the shallow bedrock wells range from 0.024 ft/day at MW-705D to 218 ft/day at MW-3. Average and median values for hydraulic conductivity in the shallow weathered bedrock (shallow groundwater) are 27.8 ft/day and 11.9 ft/day, respectively. Hydraulic conductivity values obtained for the deep bedrock wells range from 0.0009 ft/day at MW-711DD to 41.4 ft/day at MW-712DD. Average and median values for hydraulic conductivity in the first main fracture zone (deep groundwater) are 7.5 ft/day and 3.2 ft/day, respectively.

The difference in hydraulic conductivities between the shallow weathered bedrock and the first main fracture zone was reflected in the production rates measured in monitoring wells during well development and sampling, and response times to slugs during slug testing; which confirmed the interpretation of slug test data.

4.2 Extent of Contamination

Uranium concentrations detected in groundwater during the August 2011 sampling event are summarized on Table 4-3 and are presented in Figures 4-16 and 4-17. Table 4-3 contains results for unfiltered groundwater samples and filtered sample results and a comparison of the results (unfiltered versus filtered) for total uranium in mass units micrograms per liter (µg/L). There is a relatively small difference between unfiltered and filtered concentrations; in most cases the unfiltered results are slightly higher in concentration due to the presence of suspended solids. The maximum difference is 12.4 µg/L in the samples collected from MW-26 (unfiltered concentration: 107 µg/L; filtered concentration: 94.6 µg/L). The difference in concentrations for a majority of the samples is less than 5 µg/L (average difference: 0.73 µg/L; median difference: 0.20 µg/L). Therefore, the remainder of discussion on the extent of uranium in groundwater will reference filtered (dissolved) concentrations of total uranium.

Isoconcentration maps of dissolved uranium were prepared based on the August 2011 analytical results. Total uranium results for groundwater samples collected from the shallow bedrock monitoring wells are presented on Figure 4-16. The highest uranium concentration (209 µg/L and 212 µg/L in the duplicate sample) detected in groundwater was in the shallow bedrock well MW-605D located near the center of the Guterl Steel Site. Concentrations greater than 90 µg/L were detected north of Buildings 14 and 47, and appear to trend in a northwest to southeast direction across the Guterl Steel Site towards the canal. A concentration of 44.9 µg/L was detected at the furthest existing downgradient sampling point (Seep 01) characterized to be a potential discharge point for shallow weathered bedrock groundwater. Sampling results for Seep 02 indicated a much lower uranium concentration (6.3 µg/L).

Isoconcentration maps of dissolved uranium were prepared based on the September 2009 and the September 2010 analytical results as shown on Figures 4-18 and 4-19. A comparison of these figures to the dissolved uranium plume for 2011, suggests that the size and shape of the plume has remained stable. This is supported by a time-trend analysis performed for dissolved uranium provided in Appendix L and summarized herein. Trends at all 30 wells (impacted and unimpacted wells sampled four or more times) were evaluated using the Kendall-Tau test. Test results are shown in Appendix L, Table 1. Only 3 of the 30 wells showed significant trends. MW-3 is a background well with a significant downward trend, and MW-603D is a background well with a significant upward trend. One impacted well, MW-24, had a significant upward trend with concentrations that increased from 5.49 to 35.08 µg/L in the four successive samples. For the remaining wells, no statistically significant trends in uranium concentrations are detectable at these wells over the four-year monitoring period. However, it should be noted that four samples obtained over a 4-year period may be insufficient to detect upward or downward trends in wells with shallow slopes. More information is provided in Appendix L.

Results of the total uranium concentrations in deep groundwater in the first main fracture zone are presented on Figure 4-17 for unfiltered and filtered dissolved uranium, respectively. The distribution of uranium in deep groundwater appears in a similar orientation as the shallow groundwater; however, the plume is much smaller. The highest concentration (67 µg/L) was detected in MW-710DD, located near the southeastern Guterl Steel Site boundary.

4.3 Geotechnical Results

Geotechnical samples from the borings were submitted to Shaw's in-house Geotechnical Testing Laboratory located in Knoxville, Tennessee. Samples were received by the laboratory on August 18, 2011. The following analyses were performed in the laboratory:

- Bulk density by ASTM D2937-10
- Uranium partitioning coefficient Kd by modified ASTM D4646
- Total porosity by EM-1110-2-1906 (USACE, 1986)

These analyses were performed in accordance with the DGI work scope requirements to provide results for bulk density, Kd, and effective porosity. Since effective porosity is not directly measurable, it was calculated from the total porosity and the degree of saturation measurements made on the samples.

All analyses were performed following method specifications. Twenty-four hour non-equilibrium desorption coefficients were calculated using a modified ASTM D4646. The method was modified to determine soil desorption using Synthetic Precipitation Leaching Procedure (east) fluid as defined in SW-846 Method 1312, which was then air saturated.

The uranium concentrations in the 24-hour solutes for sample 702 DD soil and its duplicates were found at concentrations between the method detection limit and the lowest standard, and therefore, the Kd for this sample has been estimated.

A copy of the geotechnical laboratory report is included in Appendix J.

Table 4-4 presents the results of the bulk density, total porosity and dry density tests that were used to compute effective porosities. Bulk density measurements ranged from 1.24 grams per cubic centimeter (g/cm^3) to 2.08 g/cm^3, with an average value of 1.70 g/cm^3; while the dry density measurements ranged from 1.04 g/cm^3 to 1.82 g/cm^3, with an average value of 1.48 g/cm^3. Total and effective porosity ranges were 0.39 to 0.60 and 0.11 to 0.42, respectively, with the average total porosity calculated as 0.46 and the average effective porosity calculated as 0.25.

Table 4-5 presents the results of the Kd analyses. Kd analyses were performed in triplicate, and the data indicates a good match between the three analyses. Kd values ranged from 1,052 milliliter per gram (mL/g) to 95,667 mL/g, with an average value of 17,699 mL/g. Since the Kd data displayed a large range, a geometric mean of 5,722 mL/g was calculated to indicate the central tendency or typical value of the data set.

The Kd values reported in this report were derived from soil samples that were collected in unsaturated soil overlying the shallow groundwater present in the shallow weathered bedrock. These Kd values represent the potential for the infiltrating rainwater to desorb uranium from the unsaturated soil and leach into the underlying groundwater. The soil samples used for the Kd analysis were collected from areas where the soil uranium concentrations were less than the source area soils and, therefore, may not directly indicate the desorption potential for uranium in the source areas.

4.4 Uranium Geochemistry

Uranium concentrations in the 57 filtered groundwater samples (including duplicates) obtained in 2011 range from 0.28 µg/L to 214 µg/L as determined by Inductively Coupled Plasma/Mass Spectrometer (ICP/MS) method. These samples were also analyzed for uranium via alpha spectroscopy, which determines the individual activities of the ^{234}U, ^{235}U, and ^{238}U isotopes. The isotopic uranium results are presented in Table 4-6. These results allow an independent comparison of uranium concentrations by two different analytical methods in each sample. Figure 4-20 shows the uranium concentrations in each of the 2011 samples as determined via ICP/MS (x axis) versus the three uranium isotope activities determined by alpha spectroscopy, converted to mass concentration units (µg/L) and summed (y axis). Shallow samples are shown with diamond symbols and deep samples are shown with squares. The dashed line on the figure labeled "y=x" is the trend expected for perfect agreement between the two methods. The majority of the points fall on or very close to the dashed line, indicating good agreement between

the two methods. The median isotopic uranium to ICP/MS uranium ratio is 0.964 and the mean isotopic uranium to ICP/MS uranium ratio is 0.934, which verifies the close agreement. The closeness of the points to the y=x line, the symmetry of the points about the y=x line, and the mean and median ratios close to 1.0 indicate general agreement and lack of bias in either of the analytical methods for uranium.

The isotopic uranium results for the 2011 sampling event indicate that only natural uranium was present in the samples (depleted, enriched, or recycled was not identified in the samples). Enriched uranium can be identified by $^{234}U/^{238}U$ activity ratios that are greater than 7.0, depleted uranium has ratios less than 0.2, and natural uranium has ratios in the range of 1.0 to 3.0 (Goldstein, 1997).

Figure 4-21 shows the correlation between the alpha spectroscopy results for ^{234}U versus ^{238}U in activity units (picoCuries per liter [pCi/L]) in the shallow and deep samples. The dashed line on the figure labeled "y=x" is the trend expected if the ^{234}U and ^{238}U activities are identical in each sample. Also shown on Figure 4-21 are linear regressions of the two data sets. Samples from the shallow and deep units show strong correlations ($R^2 > 0.97$) between the two isotope activities and the two trends are coincident. The slopes of the linear regressions of the two data sets, which represent the average $^{234}U/^{238}U$ activity ratios, are both close to 1.0 (±0.004), and the y-intercepts are close to 0.0 (±1.0), which is a fingerprint for natural uranium.

Uranium detected in the 2011 samples is predominantly present in a dissolved state. The ratios of uranium concentrations (ICP/MS method) in filtered versus unfiltered sample splits in the 2011 shallow and deep samples are shown as a function of the unfiltered uranium concentrations in Figure 4-22. Samples with uranium present in a mostly dissolved state should have ratios close to 1.0, and samples with uranium present as suspended particulates should have ratios less than 1.0 (Thorbjornsen and Myers, 2007). Greater scatter in the filtered/unfiltered ratios is observed at lower concentrations where the uncertainties in concentrations increase. However, the majority of the samples line up as a vertical trend over a ratio of 1.0 (dashed line), indicating that the uranium detected in the samples is not removable by filtration and is, therefore, mostly present in a dissolved state.

4.4.1 Uranium Solubility and Speciation

Under oxidizing conditions, hexavalent uranium exists in pure water as a mix of the uranyl ion [UO_2^{2+}] and hydrolyzed uranyl species [UO_2OH^+, $UO_2(OH)_2^o$, $UO_2(OH)_3^-$], depending on local pH (Paquett and Lemire, 1981). These forms of uranium have moderate solubilities over the neutral pH range. Uranium in pure water with a pH of 7 and oxidation reduction (redox) potential (+400 millivolts [mV]) that is in equilibrium with schoepite ($UO_3 \bullet 2H_2O$), which is the most stable hexavalent uranium mineral, has a solubility of approximately 1 milligram per liter (mg/L).

The addition of dissolved carbonate in the water can increase this solubility by a large amount. The uranyl ion has a very strong affinity to form aqueous complexes with the carbonate ion (CO_3^{2-}) in varying combinations, depending on total carbonate concentrations and pH (Jensen, 1982). The addition of dissolved calcium carbonate (50 mg/L Ca^{2+} and 150 mg/L HCO_3^-) to oxic, neutral pH water increases uranium solubility from approximately 1 mg/L to 38 mg/L. The dominant dissolved uranium species in this carbonate-bearing water are $UO_2CO_3^o$, $UO_2(CO_3)_2^{2-}$, and $UO_2(CO_3)_3^{4-}$. The uranyl di- and tri-carbonate species are favored at higher pH conditions where more of the total dissolved carbonate is present as CO_3^{2-} rather than bicarbonate (HCO_3^-) or carbonic acid (H_2CO_3), which are the dominant forms under lower pH conditions.

The dominant uranyl-carbonate species as a function of the true redox potential (Eh) and pH are provided in Figure 4-23. The presence of dissolved carbonate in the groundwater increases the solubility of uranium due to the formation of these mono-, di-, and tri-carbonate species. High total carbonate concentrations also have the effect of expanding the soluble hexavalent uranium stability field at the expense of the low-solubility uraninite field on the Figure 4-23.

In addition, the large ionic radii of these uranyl-carbonate species limit their adsorption affinity, and their negative charges result in adsorption that is restricted to positively charged mineral surfaces such as iron oxides and organic carbon. Some adsorption of these uranium species is expected in soil and weathered bedrock where iron oxides and organic material are present, but less adsorption is expected in the dolostone aquifer environment where positively charged mineral surfaces and organic carbon are not abundant.

Under reducing conditions, uranium exists in the tetravalent form where its mobility is limited by very low solubilities (Brookins, 1988). The tetravalent form of uranium precipitates as uraninite (UO_2), which has a solubility that is approximately six orders of magnitude lower than hexavalent uranium minerals such as schoepite. The stability field for tetravalent uranium is shown on the lower portion of Figure 4-23 where uraninite precipitates.

Uranium in pure water with a pH of 7 and a redox potential of -50 mV has solubility with respect to uraninite of 0.0001 mg/L, and is dominantly present in solution as the neutral speci $U(OH)_4^o$. Redox potentials below -50 mV have even lower solubilities.

In summary, the mobility of uranium in groundwater is the most sensitive to redox conditions, being very low (less that 0.0001 mg/L) under reducing conditions, and is much higher (tens of mg/L or more) under oxidizing conditions. In an oxidizing environment, uranium solubilities are sensitive to total dissolved carbonate and pH, with higher carbonate concentrations and higher pH contributing to higher solubilities.

4.4.2 Oxidation Reduction Conditions

Most shallow aquifers have oxidizing conditions unless they are overlain by swamps or wetlands where decaying organic material such as leaves, wood, and peat can create naturally reducing

environments. Such wetlands do not exist at the Guterl Steel Site. However, the presence of organic contaminants such as hydrocarbon fuel compounds or chlorinated solvents can, under some circumstances, create local reducing conditions if they are subject to anaerobic microbial degradation.

Samples from several of the wells have detectable concentrations of the chlorinated solvents 1,1,1-trichloroethane; 1,1-dichlororethane; 1,1-dichlororethene; chloroethane; chloroform; tetrachloroethene; 1,2-dichlororethene; trichloroethene; and vinyl chloride. Figures 4-24 and 4-25 show the spatial distributions of VOCs in the shallow and deep groundwater units, respectively. Table 4-7 presents the analytical results for VOCs in groundwater.

Vinyl chloride and the *cis* isomer of 1,2-dichlororethene are microbial degradation products of trichloroethene, and their presence usually indicates reducing conditions. However, effective degradation of these solvents requires a specific set of conditions conducive to anaerobic microbial activity, including DO concentrations below 0.5 mg/L, ORP below 100 mV, nitrate below 1 mg/L, total organic carbon concentrations above approximately 20 mg/L, and sulfate concentrations below 20 mg/L (USEPA, 1998). Solvents can persist in groundwater for long periods of time and not establish a reducing environment if those conditions are not met.

The major element compositions of the shallow and deep samples are shown as Stiff diagrams on Figures 4-26 and 4-27. The metals results are presented in Table 4-8 and the anion results are presented in Table 4-9. Stiff diagrams are created by plotting the equivalent concentration (in milli-equivalents per kilogram) of the major cations (sodium, potassium, calcium, and magnesium) to the left of the center axis and major anions (chloride, carbonate, and sulfate) to the right of the center axis. The points are connected to form a six-sided polygon whose shape describes the water composition (Hounslow, 1995).

Sulfate concentrations at the wells (bottom right axis on the Stiff diagrams) range from 21 mg/L to 2,170 mg/L, suggesting that anaerobic sulfate-reducing conditions do not exist in the subsurface. The presence of sulfate in this range of concentrations acts as a redox buffer, preventing redox conditions from falling below the sulfate stability field until most of the sulfate gets reduced to sulfide.

Standard methods for estimating aquifer redox conditions include field measurements of DO and ORP. Traditional DO probes are based on membrane-covered electrochemical sensors, which are either polarographic or galvanic cells. These sensors require that a constant current be applied, which requires a stable power supply. Frequent calibration and extensive maintenance is required to ensure accurate results. In addition, the reaction consumes oxygen, so a constant flow of water must be provided. Insufficient flow will yield a low bias in the results.

Optical DO sensors were used for the first time in the 2011 sampling event. These relatively new sensors use a luminescent approach. An oxygen-specific lumiphore embedded in a gas-permeable sensing foil is illuminated with a blue light-emitting diode, which causes the

lumiphore molecules to emit red photons. DO acts as a dynamic luminescence quencher so the lifetime of luminescence is inversely proportional to the DO concentration. The optical probes have a lower limit of detection of 0.1 mg/L compared to approximately 0.5 mg/L for the older electrochemical sensors, and are more accurate in the lower concentration range. The 2011 DO measurements range from 0.18 to 6.28 mg/L, with a median of 0.43 and a mean of 0.83 mg/L. All of these measurements represent redox conditions where the hexavalent form of uranium is stable.

ORP probes measure the voltage between a reference electrode and a sensing electrode. The voltage developed between the two electrodes is proportional to the true redox potential (Eh). The 2011 field measurements were performed with a YSI brand ORP probe, which uses a silver/silver-chloride reference electrode. These ORP measurements were converted to the standard thermodynamic Eh scale by adding 200 mV to the field measurements. The converted Eh values range from 34.6 mV to +350 mV with a median of 204 mV and a mean of 192 mV. Only one measurement (MW-705D) was in the negative range. Although moderately reducing conditions are observed at some locations, all of these measurements represent conditions where the hexavalent form of uranium is stable.

A useful check on the consistency of DO and ORP measurements is to plot the results against each other on an x-y plot as shown in Figure 4-28. Measurements from shallow wells are shown as diamonds and deep wells are shown as squares. A linear correlation is not expected because DO concentrations above approximately 1 mg/L correspond to relatively high (> +200 mV) Eh conditions. Most of the wells with DO greater than 1 mg/L have Eh above +200 mV, and most of the wells with Eh below +200 mV have DO below 1 mg/L. These DO and ORP results are as consistent as can be expected for qualitative field measurements, and independently indicate that redox conditions at the sampled shallow and deep locations are in the range where hexavalent uranium is the stable form.

The behavior of iron in groundwater provides an additional independent redox indicator. Under oxidizing conditions, iron is present in the ferric (Fe^{+3}) valence state, which has a very low solubility that is below standard detection limits. Detections of iron in oxic unfiltered water samples are usually due to the presence of suspended iron oxide particulates that are removable by filtration. Under reducing conditions, iron is present in the ferrous (Fe^{+2}) valence state that is soluble up to several tens of mg/L and will pass through a standard 0.45 micron filter. The fraction of iron that passes through a filter can thus be used to determine if a sample is oxidizing or reducing with respect to iron redox reactions. The metals results are presented in Table 4-8. Figure 4-29 shows iron concentrations in unfiltered samples versus their corresponding filtered/unfiltered ratios. Samples that line up vertically over a ratio of approximately 1.0 (dashed line) are reducing with respect to iron redox reactions, and samples that fall to the left of the dashed line have some fraction of the iron removed after filtration indicating oxidizing conditions with respect to iron redox reactions. The majority of the samples show one or two

orders magnitude decrease in iron concentrations after filtration, indicating oxidizing conditions, but some shallow samples have iron in solution.

These results confirm that there is a wide range of redox conditions present across the Guterl Steel Site. However, the redox potential at which ferric iron reduces to the soluble ferrous form is considerably higher than the redox potential at which hexavalent uranium reduces to tetravalent uranium and precipitates. At a pH of 7, ferric iron reduces to ferrous iron at an Eh of approximately +220 mV, whereas hexavalent uranium reduces to tetravalent uranium at an Eh of -50 mV.

These iron results are consistent with redox information derived from DO and ORP measurements. In addition, the presence of dissolved sulfate at concentrations ranging from 21 mg/L to 2,170 mg/L, as previously discussed, provides additional independent evidence that redox conditions are not in the strongly reducing range necessary for reduction of hexavalent uranium to the insoluble tetravalent form.

4.4.3 Uranium Mobility

The mobility of a metal such as uranium can be limited in an aquifer by a solubility limit, by adsorption on mineral surfaces, or by a combination of both processes. The assessment of redox conditions in the shallow and deep water-bearing units, discussed previously, indicates that the hexavalent form of uranium is stable. The solubility of hexavalent uranium in pure oxidizing water with a pH of 7.0 is approximately 1 mg/L, and the presence of dissolved carbonate and pH conditions above 7.0 contribute to even higher solubilities. The mean pH in samples from the shallow wells is 7.24 and in the deep wells is 7.68. The average alkalinity (a measure of total dissolved carbonate) is 351 mg/L (as calcite [$CaCO_3$]), and is controlled by equilibrium with dolomite [$CaMg(CO_3)_2$] and $CaCO_3$, which are the major minerals present in the dolostone bedrock and partially weathered upper zone.

The spatial distributions of uranium in the shallow and deep units are shown in Figures 4-16 and 4-17. Uranium concentrations in filtered samples obtained in 2011 range from 0.28 µg/L to 214 µg/L, with a median of 13.3 µg/L and a mean of 37.8 µg/L. The highest uranium concentration was observed in a sample from MW-605D (a concentration of 209 µg/L with a concentration of 212 µg/L in the duplicate sample). The solubility of uranium at this well was calculated by Geochemist's Workbench (GWB) (Bethke and Yeakel, 2010) is 214 mg/L, which is three orders of magnitude higher than the observed uranium concentration.

The sample with the lowest Eh of -34.5 mV is from MW-705D. Water of this composition would be expected to have the lowest uranium solubility. The solubility of uranium at this well as calculated by GWB is 125 mg/L, which is also in excess of the actual uranium concentration of 2.8 µg/L.

These geochemical modeling results show that uranium in groundwater with the observed range of compositions (pH mostly above 7.0 and high carbonate concentrations controlled by equilibrium with carbonate minerals), requires extremely reducing conditions for it to reduce to the tetravalent form and precipitate as insoluble oxides. Although moderately reducing conditions exist at some locations, the uranium is predicted based on modeling results to be in the soluble hexavalent form at all of the sampled locations. Uranium mobility is therefore not limited by precipitation, but will be controlled by sorption along groundwater flow paths.

4.5 Sanitary Sewer Sampling Results

At the request of the City of Lockport, solid and liquid samples were collected from two sanitary sewer locations. These data were requested by the City to assess municipal worker safety. The results are presented in Tables 4-10 and 4-11, and Figure 4-30.

The sample from Sewer #1 was collected from the accessible manhole closest to the facility. The sample from Sewer #2 was collected from the next accessible manhole downstream. The results for the two solid samples, Sewer #1 and Sewer #2, respectively, are 0.27 and 0.47 picoCuries per gram (pCi/g) for ^{228}Th; 0.45 and 0.32 pCi/g for ^{230}Th; 0.22 and 0.44 pCi/g for ^{232}Th; 3.55 and 4.37 pCi/g for ^{234}U; 0.2 and 0.22 pCi/g for ^{235}U; and 3.72 and 4.77 pCi/g for ^{238}U.

The results for the two liquid samples, Sewer #1 and Sewer #2, respectively, are 10.9 and 0.43 pCi/L for ^{234}U; 0.61 and 0.04 pCi/L for ^{235}U; and 10.4 and 0.44 pCi/L for ^{238}U. The isotope ^{230}Th was detected in one sample, Sewer #1, at 0.03 pCi/L. The remaining thorium isotopes were not detected.

5.0 Revised Conceptual Site Model

A revised conceptual site model (CSM) was prepared on the basis of the Guterl Steel Site characterization data collected during the RI and the DGI. The CSM is a non-numeric model that consolidates the geologic, hydrologic, analytical, and surface water data into a unified interpretation. Individual elements that were used to develop the CSM of the Guterl Steel Site are discussed in detail in Section 4.1.1 (Site Geology), Section 4.1.2 (Site Hydrogeology), and Section 4.2 (Extent of Contamination). In addition to the on-site data, off-site features (such as the Erie Canal and the quarry) that influence contaminant fate and transport on the Guterl Steel Site were included in the CSM. The CSM is presented graphically in Figure 5-1.

The subsurface lithology beneath the Guterl Steel Site consists of unconsolidated soil and shallow weathered bedrock that is underlain by fractured dolomite, with the degree of fracturing decreasing with depth. The dolomite grades into shaly dolomite and eventually is underlain by a shale bedrock unit.

The unconsolidated soil and shallow weathered bedrock unit consist of relatively thin to discontinuous layers of native soils derived from glacio-lacustrine deposits, glacial till, and fill material. Native soils consist of silts and clays with varying amounts of sand and bedrock fragments and are less permeable as compared to the fill material. With the exception of the landfill area and a location north of the north fence, where the overburden is 13 to 15 ft thick, the overburden is less than 5 ft across the Guterl Steel Site area.

Numerous horizontal fractures were documented in the shallow weathered bedrock consisting of top 20 to 25 ft of the dolostone rock that underlies the overburden. In addition, vertical and angled fractures were also identified. Many of the fractures were noted to be weathered and/or clay filled resulting in reduced transmissivity. Vugs, calcite-filled vugs, and voids were also found generally in the upper 25 to 30 ft of bedrock. The fracture density in dolostone decreased with depth between 25 to 65 ft bgs, which corresponds to the first main fracture zone. Correspondingly, the RQD, which is a rough measure of the degree of jointing or fracture in a rock mass, also decreased with depth. A RQD value of 80 percent was used to demarcate the boundary between the shallow weathered dolostone and the less fractured dolostone, which occurs at 25 to 30 ft bgs (first main fracture zone). Dark gray shaly dolostone was encountered at depths of approximately 60 to 65 ft bgs. The shaly dolostone is believed to transition into the Rochester Shale Formation at depths greater than 80 ft bgs. The Rochester Shale formation was not encountered in the boreholes that were drilled to depths of 80 ft bgs during the DGI.

Hydraulic conductivity values obtained for the shallow bedrock wells (bottom of screen up to 23 ft bgs) range from 0.024 ft/day to 218 ft/day. Hydraulic conductivity values obtained for the deep bedrock wells (bottom of screen up to 40 ft bgs) range from 0.0009 ft/day to 41.4 ft/day.

A portion of the precipitation that falls in the area as rain and snow infiltrates into the ground and recharges the groundwater system before either discharging to the Erie Canal or migrating to the deeper rock formations overlying the Rochester Shale Formation, where the groundwater flow direction has not been determined. The remainder of the precipitation is lost to the atmosphere through the processes of evaporation and transpiration through vegetation, or is directed as surface water runoff directed towards the Erie Canal. The infiltrating water moves vertically through the unsaturated overburden soil and weathered rock and then recharges the shallow groundwater.

Ground surface and the top of bedrock elevation are highest in the northern area of the Guterl Steel Site and slope unevenly towards the south towards the Erie Canal. The groundwater table is fairly shallow, and is encountered at depths ranging from 3 to 10.5 ft. Groundwater then flows through the shallow weathered bedrock and in the first main fracture zone of the dolostone, where shallow monitoring wells were installed during the RI, and additional shallow and deep monitoring wells were installed during the DGI. The shallow bedrock potentiometric surface map shows a generally southward flow direction with the highest groundwater elevations in the northern area of the Guterl Steel Site (Figure 4-12). A groundwater divide oriented northwest to southeast that originates in the northwestern area of the Site is apparent. West of the divide, the groundwater flow direction is towards the quarry. South and east of the divide, groundwater flow is to the southeast towards the Erie Canal. The deep groundwater shows a similar pattern to the shallow groundwater with an apparent general groundwater flow direction to the southeast towards the canal and a westerly groundwater flow component towards the quarry.

Seeps were observed along the northern rock face of the canal at only two locations in September 2011. The elevations of the two seeps are higher than the elevation of the base of the shallow weathered bedrock, indicating that groundwater from the shallow weathered bedrock may be discharging to the surface as seeps. From mid-November through April, the canal is not navigable and the water elevation in the canal is 10 to 12 ft lower than the elevation during the May through mid-November navigation season. The movement of deep groundwater in the canal area has not been determined. Potential pathways include flow directed into the canal, underneath the canal bottom, or possibly vertically into the deeper dolostone and shaly dolostone units where the flow directions have not been determined.

Groundwater in the shallow, as well as deep, wells within the dolostone was documented to be impacted with uranium. The processing of natural uranium metal at the Guterl Site resulted in dust, mill shavings and associated land disposal that contaminated on-site soils and facility buildings – the potential sources of the uranium-impacted groundwater. The highest uranium concentrations were detected in groundwater near the center of the Guterl Steel Site. The uranium plume centerline appears to trend in a northwest to southeast direction across the Guterl Steel Site, extending across the property boundary towards the canal. A portion of the uranium-

impacted water discharges to the canal, while the remainder appears to be directed towards the deeper bedrock units.

6.0 Conclusions

Based on the results of the DGI, the following conclusions are drawn:

- Total uranium is present at concentrations exceeding background in the deep groundwater flowing through the first main fracture zone of the competent dolostone, located between 30 and 40 ft deep and corresponds with the screened locations of the deep monitoring wells.
- The horizontal extent of groundwater with total uranium concentrations exceeding background covers approximately one third the area in the first main fracture zone (deep groundwater) compared to the shallow weathered bedrock (shallow groundwater). The areas exceeding background are primarily near the buildings in both zones.
- Groundwater with uranium concentrations exceeding background is discharging to the Erie Canal at the location of Seep 01.
- Hydraulic conductivity values are generally lower in the first main fracture zone than in the shallow weathered bedrock. Average and median values for hydraulic conductivity in the shallow weathered bedrock (shallow groundwater) are 27.8 ft/day and 11.9 ft/day, respectively. Average and median values for hydraulic conductivity in the first main fracture zone (deep bedrock) are 7.5 ft/day and 3.2 ft/day, respectively. The geometric means of hydraulic conductivity values in the shallow weathered bedrock and the first main fracture zone are 10 ft/day and 1 ft/day, respectively.
- The difference in hydraulic conductivities between the shallow weathered bedrock and the first main fracture zone was reflected in the production rates measured in monitoring wells during well development and sampling, and response times to slugs during slug testing, therefore confirming the interpretation of slug test data.
- Geotechnical test data indicate that Kd values ranged from 1,052 mL/g to 95,667 mL/g, with an average value of 17,699 mL/g and a geometric mean value of 5,722 mL/g. These values indicate that total uranium will preferentially remain bound to soil instead of desorbing to recharge water and leaching to groundwater. The Kd values reported in this report were derived from soil samples that were collected in unsaturated soil overlying the shallow groundwater present in the shallow weathered bedrock. These Kd values represent the potential for the infiltrating rainwater to desorb uranium from the unsaturated soil and leach into the underlying groundwater. The soil samples used for the Kd analysis were collected from areas where the soil uranium concentrations were less than the source area soils and, therefore, may not directly indicate the desorption potential for uranium in the source areas.

- Groundwater flow directions in the first main fracture zone (deep groundwater) are generally consistent with groundwater flow in the shallow weathered bedrock (shallow groundwater). Groundwater flow in both zones is generally to the south, but to the southeast toward the Erie Canal on the eastern part of the site and to the southwest toward the quarry on the western part of the site.
- The uranium isotope ratios are consistent with naturally occurring uranium (^{234}U and ^{238}U are present at equal concentrations by activity), indicating the uranium processed at the site was neither enriched nor depleted.
- Comparison of filtered and unfiltered total uranium results indicates most of the uranium present is dissolved. Approximately 98 percent of the total uranium was in the dissolved form in the samples collected.
- Geochemical conditions in the aquifer indicate total uranium will remain in a soluble form at all locations investigated. Redox conditions do not favor uranium precipitation.

The horizontal and vertical extent of uranium exceeding background has not been completely defined. Vertically, the DGI results determined that uranium-impacted groundwater occurs in the deep groundwater flowing through the first main fracture zone of the competent dolostone that underlies the shallow weathered bedrock (shallow groundwater), where uranium contaminated groundwater was documented to be present during the RI. There is another 40 to 45 ft of dolostone and shaly dolostone between the bottom of first main fracture zone of the competent dolostone and the Rochester Shale where the presence or absence of uranium impacted groundwater has not been determined.

Groundwater flow was observed to discharge at two locations along the northern rock face of the Erie Canal. This discharge represents a fraction of the groundwater flow that exits the shallow and the deep groundwater units underneath the site. Data collected during the DGI has not established the flow path where the remainder of the groundwater exits; potential routes include discharge to the quarry, flow underneath the Erie Canal, and flow to regional groundwater system through fractures in the dolostone and shaly dolostone that underlie the first main fracture zone of the competent dolostone.

The DGI results provide data on deep groundwater flow in the first main fracture zone of the competent dolostone, hydraulic conductivity and geotechnical data, nature and extent of total uranium shallow and deep groundwater plumes in the shallow weathered bedrock and the in the first main fracture zone of the competent dolostone, lithological characteristic of the rock units, and information on the locations of water producing fractures. Although there are gaps in data on horizontal and vertical characterization, the additional data collected during this investigation is sufficient to develop a numerical groundwater model for the site that will allow evaluation of groundwater flow and transport.

7.0 References

Bethke, C. M. and S. Yeakel. 2010. *Geochemist's Workbench Release 8.0 Reference Manual*, University of Illinois, Urbana, Illinois.

Bouwer, H. and R.C. Rice. 1976. *A Slug Test Method for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells*, Water Resources Research, vol. 12, no. 3, pp. 423-428.

Brett, C.E., Tepper, D. H., Goodman, W. M., LoDuca, S. T., and Bey-Yeh Eckert. 1995. *Revised Stratigraphy and Correlations of the Niagaran Provincial Series (Medina, Clinton, and Lockport Groups) in the Type Area of Western New York*, U. S. Geological Survey Bulletin 2086, 66p.

Brookins, D. G. 1988. *Eh-pH Diagrams for Geochemistry*, Springer Verlag, New York.

Goldstein, S. J., J.M Rodriguez, and N. Lujan. 1977. *Measurement and Application of Uranium Isotopes for Human and Environmental Monitoring*, Health Physics, Vol. 72, No. 1, pp. 10-18.

Hounslow, A. 1995. *Water Quality Data: Analysis and Interpretation*, CRC Press, 416 pages.

Hyder, Z., J.J. Butler, Jr., C.D. McElwee and W. Liu. 1994. *Slug Tests in Partially Penetrating Wells*, Water Resources Research, vol. 30, no. 11, pp. 2945-2957.

Jensen, B. S. 1982. *Migration Phenomena of Radionuclides into the Geosphere*, Radioactive Waste Management, Vol. 5, Harwood Academic Publishers for the Commission of European Communities.

Johnston, R.H. 1964. *Ground Water in the Niagara Falls Area, New York: State of New York*, Water Resources Commission Bulletin GW 53, 93p.

La Sala, A.M., Jr. 1968. *Ground-Water Resources of the Erie-Niagara Basin, New York*, *Water Resources Commission*, Basin Planning Report ENB-3, New York State Conservations Department, Albany, New York, 114p.

Miller, T.S., and W. M. Kappel. 1987. *Effect of Niagara Power Plant Project on Ground-Water Flow in the Upper Part of the Lockport Dolomite, Niagara Falls Area, New York*, U.S., Geological Survey Water-Resources Investigation Report 86-4130, 31p.

New York State Department of Environmental Conservation (NYSDEC). 2000. *Immediate Investigative Work Assignment (IIWA) Report – Guterl Excised Area, City of Lockport, Niagara County,* Division of Environmental Remediation, Region 9, Buffalo NY. October.

Paquett, J. and R. J. Lemire. 1981. *A Description of the Chemistry of Aqueous Solutions of Uranium and Plutonium to 200°C Using Potential-pH Diagrams*, Nuclear Science and Engineering, Vol. 79, pp. 26-48.

Tepper, D. H., Goodman, W. M., and C. E. Brett. 1991. *Stratigraphic and structural controls on the development of regional water-bearing zones in the Lockport Group in the Niagara Falls Area, New York [abs]*, *in* Abstracts with Programs: Geological Society of America, 1991 Annual Meeting, vol. 23, no.5 p. 267.

Tesmer and Bastedo. 1981. *Colossal Cataract: The Geologic History of Niagara Falls*, State University of New York Press, Albany, NY.

Telecommunication, 2011, with Rick Manns, Buffalo Division Engineer for the Erie Canal Corporation, September.

Thorbjornsen, K. and J. Myers. 2007. *Identifying Metals Contamination in Groundwater Using Geochemical Correlation Evaluation,* Environmental Forensics, Vol. 8, Nos. 1-2, pp. 25-35.

United States Army Corps of Engineers (USACE). 1986. Engineer Manual (EM) 1110-2-1906, *Engineering and Design Laboratory Soils Testing*, August 20.

USACE. 2001. EM 200-1-3, *Engineering and Design - Requirements for the Preparation of Sampling and Analysis Plans*, Appendix C.2, Groundwater Sampling, February 1.

USACE. 2007. *Sampling and Analysis Plan, Volume 1 – Field Sampling Plan*, prepared by Earth Tech, Inc., June, 14.

USACE. 2010. *Remedial Investigation Report, Former Guterl Specialty Steel Corporation FUSRAP Site, Lockport, New York.*

USACE. 2011a. *Sampling and Analysis Plan Addendum – Volume 1 – Addendum to Field Sampling Plan (FSP) with Applicable Remedial Investigation FSP Sections for Data Gap Investigation to Support the Feasibility Study, Former Guterl Specialty Steel Corporation FUSRAP Site, Lockport, New York*, June, 3.

USACE. 2011b. *Sampling and Analysis Plan Addendum – Volume 2 – Addendum to Quality Assurance Project Plan for Data Gap Investigation to Support the Feasibility Study, Former Guterl Specialty Steel Corporation FUSRAP Site, Lockport, New York*, June, 3.

USACE. 2011c. *Sampling and Analysis Plan Addendum – Volume 3 – Accident Prevention Plan for Data Gap Investigation to Support the Feasibility Study, Former Guterl Specialty Steel Corporation FUSRAP Site, Lockport, New York*, June, 3.

USACE. 2011d. *Scope of Work (SOW), Data Gap Investigation to Support the Feasibility Study for the Former Guterl Specialty Steel Corporation, Lockport, New York*, March 17.

United States Environmental Protection Agency (USEPA). 1998. T*echnical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater,* EPA/600/R-98/128, U.S. Environmental Protection Agency.

Yager, R.M. 1993. *Simulated Three-Dimensional Ground-Water Flow in the Lockport Group, A Fractured Dolomite Aquifer Near Niagara Falls, New York*, U.S. Geological Survey Water-Resources Investigation Report 92-4189.

Yager, R.M., and W. M Kappel. 1987. *Detection and Characterization of Fractures and Their Relation to Ground-Water Movement in the Lockport Dolomite, Niagara County, New York*, Proceedings of the 3rd Annual Groundwater Technology Conference, City University of New York, New York, U. S. Geological Survey, Water Resources Division, Ithaca, New York, 47p.

TABLES

Table 2-1

Field Parameters

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
	Field Sample ID	A02MW010001	A02MW020001	A02MW30001	A02MW40001	A02MW50001	A02MW060001	A02MW070001
	Sample Date	8/23/2011	8/23/2011	8/22/2011	8/19/2011	8/22/2011	8/12/2011	8/12/2011
	Purpose	Original Data	Original Data	Original Data	Original Data	Original Data	Original Data	Original Data
Parameter	**Units**	**Value**	**Value**	**Value**	**Value**	**Value**	**Value**	**Value**
Dissolved Oxygen	milligrams per Liter	0.59	0.35	0.31	0.51	0.34	0.27	0.2
Oxidation-Reduction Potential	millivolts	55.3	-180.7	-56.2	96.3	-88.1	93.3	29.9
pH	Standard Unit	6.86	7.35	6.84	7.28	7.03	6.96	7.01
Specific Conductance	microsiemens per centimeter	2.771	0.601	0.744	0.639	0.695	0.993	0.881
Temperature	Celsius	14.54	15.07	14.37	15.75	12.66	13.78	15.37
Turbidity	Nephelometric Turbidity Units	-3.9	-10	7.7	198.4	-4.7	80.9	6.5

Table 2-1

Field Parameters

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13D
	Field Sample ID	A02MW080001	A02MW090001	A02MW100001	A02MW110001	A02MW120001	A03AMW13D0001
	Sample Date	8/8/2011	8/8/2011	8/12/2011	8/8/2011	8/22/2011	8/11/2011
	Purpose	Original Data	Original Data	Original Data	Original Data	Original Data	Original Data
Parameter	**Units**	**Value**	**Value**	**Value**	**Value**	**Value**	**Value**
Dissolved Oxygen	milligrams per Liter	0.24	0.22	0.49	0.35	0.32	0.36
Oxidation-Reduction Potential	millivolts	-82.2	-167	-25.8	-123.8	-17.8	40.2
pH	Standard Unit	6.8	7.07	6.87	6.64	7.12	7.26
Specific Conductance	microsiemens per centimeter	1.97	0.678	0.82	1.026	0.43	1.288
Temperature	Celsius	14.37	15.63	13.59	16.14	15.05	15.58
Turbidity	Nephelometric Turbidity Units	-0.8	4.5	4.6	10.1	0.6	-4.4

Table 2-1

Field Parameters

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19
		Field Sample ID	A03MW14D0001	A03MW15D0001	A03MW16D0001	A03MW17D0001	A04BMW180001	A04BMW190001
		Sample Date	8/16/2011	8/16/2011	8/19/2011	8/16/2011	8/5/2011	8/4/2011
		Purpose	Original Data	Original Data	Original Data	Original Data	Original Data	Original Data
Parameter	**Units**		**Value**	**Value**	**Value**	**Value**	**Value**	**Value**
Dissolved Oxygen	milligrams per Liter		0.42	1.5	0.43	0.31	0.24	2.56
Oxidation-Reduction Potential	millivolts		-69.1	-111.4	-89	-2.9	66.8	71.1
pH	Standard Unit		7.21	9.74	7.14	7.09	7.05	8.98
Specific Conductance	microsiemens per centimeter		1.519	0.749	1.368	1.79	1.114	0.711
Temperature	Celsius		15.72	15.06	16.66	15.78	16.35	17.88
Turbidity	Nephelometric Turbidity Units		4.2	6.8	6.2	73.2	1.1	1398

Table 2-1

Field Parameters

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	**MW-20**	**MW-21**	**MW-22**	**MW-23**	**MW-24**	**MW-25**
	Field Sample ID	**A04AMW200001**	**A04AMW210001**	**A04AMW220001**	**A04DMW230001**	**A04DMW240001**	**A04BMW250001**
	Sample Date	**8/18/2011**	**8/18/2011**	**8/5/2011**	**8/4/2011**	**8/4/2011**	**8/12/2011**
	Purpose	**Original Data**	**Original Data**	**Original Data**	**Original Data**	**Original Data**	**Original Data**
Parameter	**Units**	**Value**	**Value**	**Value**	**Value**	**Value**	**Value**
Dissolved Oxygen	milligrams per Liter	1.49	0.62	0.28	0.25	0.28	0.58
Oxidation-Reduction Potential	millivolts	83	-45.4	-74.7	-30.4	-54.4	37.9
pH	Standard Unit	7.1	7.16	7.23	7.12	7.31	7.04
Specific Conductance	microsiemens per centimeter	0.875	1.499	0.696	0.734	1.071	5.76
Temperature	Celsius	17.81	14.97	16.69	16.66	14.76	18.51
Turbidity	Nephelometric Turbidity Units	57.3	-7	8.4	-2.3	0.3	-2.4

Table 2-1

Field Parameters

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	**MW-26**	**MW-601D**	**MW-602D**	**MW-603D**	**MW-604D**
	Field Sample ID	**A04BMW260001**	**A04AMW610D0001**	**A04MW602D0001**	**A04AMW603D0001**	**A04MW604D0001**
	Sample Date	**8/10/2011**	**8/18/2011**	**8/11/2011**	**8/5/2011**	**8/10/2011**
	Purpose	**Original Data**	**Original Data**	**Original Data**	**Original Data**	**Original Data**
Parameter	**Units**	**Value**	**Value**	**Value**	**Value**	**Value**
Dissolved Oxygen	milligrams per Liter	0.26	0.4	0.32	0.52	0.68
Oxidation-Reduction Potential	millivolts	11.9	-144.9	21.8	24.4	66.8
pH	Standard Unit	7.37	7.13	7.31	7.02	7.23
Specific Conductance	microsiemens per centimeter	2.258	13.86	1.107	1.069	2.379
Temperature	Celsius	16.88	15.82	15.19	13.15	16.89
Turbidity	Nephelometric Turbidity Units	-29.5	87.8	56.9	9.3	16.2

Table 2-1

Field Parameters

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	**MW-605D**	**MW-606D**	**MW-606DR**	**MW-607D**	**MW-701DD**
	Field Sample ID	**A04BMW605D0001**	**A03MW606D0001**	**A03MW606DR0001**	**A03MW607D0001**	**A04AMW701DD0001**
	Sample Date	**8/10/2011**	**8/16/2011**	**8/15/2011**	**8/19/2011**	**8/19/2011**
	Purpose	**Original Data**	**Original Data**	**Original Data**	**Original Data**	**Original Data**
Parameter	**Units**	**Value**	**Value**	**Value**	**Value**	**Value**
Dissolved Oxygen	milligrams per Liter	0.3	0.61	0.31	0.45	0.85
Oxidation-Reduction Potential	millivolts	-3.4	-61	-119	150.3	89.8
pH	Standard Unit	7.29	7.22	7.07	7.15	7.2
Specific Conductance	microsiemens per centimeter	0.861	1.538	2.141	1.269	2.564
Temperature	Celsius	16.18	14.81	13.21	15.42	14.44
Turbidity	Nephelometric Turbidity Units	106.7	4	10.3	572.3	41.8

Table 2-1

Field Parameters

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	**MW-702DD**	**MW-703DD**	**MW-704DD**	**MW-705D**	**MW-705DD**
	Field Sample ID	**A04MW702DD0001**	**A03MW703DD0001**	**A04DMW704DD0001**	**MW705D0001**	**MW705DD0001**
	Sample Date	**8/11/2011**	**8/19/2011**	**8/10/2011**	**8/9/2011**	**8/9/2011**
	Purpose	**Original Data**	**Original Data**	**Original Data**	**Original Data**	**Original Data**
Parameter	**Units**	**Value**	**Value**	**Value**	**Value**	**Value**
Dissolved Oxygen	milligrams per Liter	3.17	0.33	0.18	0.72	3.64
Oxidation-Reduction Potential	millivolts	141.9	-70.8	72.8	-234.6	113.9
pH	Standard Unit	7.11	6.77	7.8	7.38	9.36
Specific Conductance	microsiemens per centimeter	4.097	2.637	2.552	2.657	6.242
Temperature	Celsius	14.79	13.12	13.19	14.48	14.19
Turbidity	Nephelometric Turbidity Units	-1.2	158.1	-4.1	3.4	112.1

Table 2-1

Field Parameters

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-706DD	MW-707DD	MW-708DD	MW-709DD	MW-710D
		Field Sample ID	A04BMW706D0001	A04BMW707DD0001	A04DMW708DD0001	A04DMW709DD0001	A04DMW710D0001
		Sample Date	8/15/2011	8/18/2011	8/11/2011	8/10/2011	8/15/2011
		Purpose	Original Data	Original Data	Original Data	Original Data	Original Data
Parameter	**Units**		**Value**	**Value**	**Value**	**Value**	**Value**
Dissolved Oxygen	milligrams per Liter		0.49	6.28	0.23	0.38	0.66
Oxidation-Reduction Potential	millivolts		-12	117.1	-1.6	47.8	10.7
pH	Standard Unit		7.16	8.72	7.43	7.35	7.21
Specific Conductance	microsiemens per centimeter		3.507	18.51	1.86	2.071	1.828
Temperature	Celsius		14.9	13.87	13.51	13	12.87
Turbidity	Nephelometric Turbidity Units		44.6	1682	19.4	-1.7	-2.1

Table 2-1

Field Parameters

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-710DD	MW-711D	MW-711DD	MW-712DD	MW-713D
		Field Sample ID	A04DMW710DD0001	A04DMW711D0001	A04DMW711DD0001	A04DMW712DD0001	A04DMW713D0001
		Sample Date	8/18/2011	8/9/2011	8/15/2011	8/18/2011	8/4/2011
		Purpose	Original Data	Original Data	Original Data	Original Data	Original Data
Parameter	**Units**		**Value**	**Value**	**Value**	**Value**	**Value**
Dissolved Oxygen	milligrams per Liter		1.9	1.07	2.28	1.11	0.72
Oxidation-Reduction Potential	millivolts		52.6	8.8	81.2	65.1	-175.6
pH	Standard Unit		7.14	7.28	9.02	7.11	7.24
Specific Conductance	microsiemens per centimeter		2.303	1.716	6.157	2.539	1.534
Temperature	Celsius		12.52	15.81	14.71	13.99	13.47
Turbidity	Nephelometric Turbidity Units		6	1.5	25.2	82.1	16.8

Table 3-1

Investigation Derived Wastes - Solids

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	IDW	
		Field Sample ID	NON-AQUEOUS IDW	
		SampleDate	8/31/2011	
		Purpose	Original data	
Analytic Method	**Parameter**	**Units**	**Value**	**LabQual**
6010B	ARSENIC	ug/L	500	U
6010B	BARIUM	ug/L	377	
6010B	CHROMIUM, TOTAL	ug/L	8.8	
6010B	LEAD	ug/L	250	U
6010B	SELENIUM	ug/L	7.7	
6010B	SILVER	ug/L	40	U
8260B	1,1-DICHLOROETHENE	ug/L	50	U
8260B	1,2-DICHLOROETHANE	ug/L	50	U
8260B	1,4-DICHLOROBENZENE	ug/L	50	U
8260B	BENZENE	ug/L	50	U
8260B	CARBON TETRACHLORIDE	ug/L	50	U
8260B	CHLOROBENZENE	ug/L	5.3	
8260B	CHLOROFORM	ug/L	50	U
8260B	METHYL ETHYL KETONE (2-BUTANONE)	ug/L	50	U
8260B	TETRACHLOROETHYLENE(PCE)	ug/L	50	U
8260B	TRICHLOROETHYLENE (TCE)	ug/L	50	U
8260B	VINYL CHLORIDE	ug/L	100	U
A-01-R MOD	THORIUM-228	pCi/g	0.35	
A-01-R MOD	THORIUM-230	pCi/g	0.4	
A-01-R MOD	THORIUM-232	pCi/g	0.259	
A-01-R MOD	URANIUM-234	pCi/g	0.337	
A-01-R MOD	URANIUM-235	pCi/g	0.009	U
A-01-R MOD	URANIUM-238	pCi/g	0.322	
7471A	MERCURY	mg/kg	0.11	U
8270C	1,4-DICHLOROBENZENE	ug/L	50	U
8270C	2,4,5-TRICHLOROPHENOL	ug/L	50	U
8270C	2,4,6-TRICHLOROPHENOL	ug/L	50	U
8270C	2,4-DINITROTOLUENE	ug/L	50	U
8270C	2-METHYLPHENOL (O-CRESOL)	ug/L	50	U
8270C	HEXACHLOROBENZENE	ug/L	50	U
8270C	HEXACHLOROBUTADIENE	ug/L	50	U
8270C	HEXACHLOROETHANE	ug/L	50	U
8270C	M,P-CRESOL	ug/L	50	U
8270C	NITROBENZENE	ug/L	50	U
8270C	PENTACHLOROPHENOL	ug/L	250	U
8270C	PYRIDINE	ug/L	100	U

NOTE: Qualifier varies by analytical method - analytical method is noted in the description of the qualifier.

LabQual = Laboratory Qualifier

pCi/g = picoCuries per gram

mg/kg = milligrams per kilogram

ug/L = micrograms per Liter

B - 8260B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J - 6010B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J - 8260B = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

Table 3-2

Investigation Derived Wastes - Liquids

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Sample Date	8/31/2011	
		Purpose	Original data	
Analytic Method	Parameter	Units	Value	LabQual
7470A	MERCURY	ug/L	0.3	U
8260B	1,1,1-TRICHLOROETHANE	ug/L	0.26	J
8260B	1,1,2,2-TETRACHLOROETHANE	ug/L	1	U
8260B	1,1,2-TRICHLOROETHANE	ug/L	1	U
8260B	1,1-DICHLOROETHANE	ug/L	2.8	
8260B	1,1-DICHLOROETHENE	ug/L	0.11	J
8260B	1,2-DICHLOROBENZENE	ug/L	1	U
8260B	1,2-DICHLOROETHANE	ug/L	1	U
8260B	1,2-DICHLOROPROPANE	ug/L	1	U
8260B	1,3-DICHLOROBENZENE	ug/L	1	U
8260B	1,4-DICHLOROBENZENE	ug/L	1	U
8260B	2-HEXANONE	ug/L	5	U
8260B	ACETONE	ug/L	5.2	B
8260B	BENZENE	ug/L	1	U
8260B	BROMODICHLOROMETHANE	ug/L	1	U
8260B	BROMOFORM	ug/L	1	U
8260B	BROMOMETHANE	ug/L	2	U
8260B	CARBON DISULFIDE	ug/L	2	U
8260B	CARBON TETRACHLORIDE	ug/L	1	U
8260B	CHLOROBENZENE	ug/L	2	U
8260B	CHLOROETHANE	ug/L	0.1	J
8260B	CHLOROFORM	ug/L	0.2	J
8260B	CIS-1,3-DICHLOROPROPENE	ug/L	1	U
8260B	DIBROMOCHLOROMETHANE	ug/L	1	U
8260B	ETHYLBENZENE	ug/L	1	U
8260B	METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U
8260B	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U
8260B	METHYLENE CHLORIDE	ug/L	1	U
8260B	STYRENE	ug/L	1	U
8260B	TETRACHLOROETHYLENE(PCE)	ug/L	1	U
8260B	TOLUENE	ug/L	1	U
8260B	TOTAL 1,2-DICHLOROETHENE	ug/L	1.5	J
8260B	TRANS-1,3-DICHLOROPROPENE	ug/L	1	U
8260B	TRICHLOROETHYLENE (TCE)	ug/L	1	U
8260B	VINYL CHLORIDE	ug/L	2	U
8260B	XYLENES, TOTAL	ug/L	5	U

Table 3-2

Investigation Derived Wastes - Liquids

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Sample Date	8/31/2011	
		Purpose	Original data	
Analytic Method	**Parameter**	**Units**	**Value**	**LabQual**
A-01-R MOD	THORIUM-228	pCi/L	0.022	U
A-01-R MOD	THORIUM-230	pCi/L	0.077	
A-01-R MOD	THORIUM-232	pCi/L	0.028	U
A-01-R MOD	URANIUM-234	pCi/L	0.102	
A-01-R MOD	URANIUM-235	pCi/L	0.011	U
A-01-R MOD	URANIUM-238	pCi/L	0.082	
6010C	ALUMINUM	ug/L	437	
6010C	ANTIMONY	ug/L	10	U
6010C	ARSENIC	ug/L	10	U
6010C	BARIUM	ug/L	168	
6010C	BERYLLIUM	ug/L	5	U
6010C	CADMIUM	ug/L	5	U
6010C	CALCIUM	ug/L	154000	E
6010C	CHROMIUM, TOTAL	ug/L	10	U
6010C	COBALT	ug/L	50	U
6010C	COPPER	ug/L	25	U
6010C	IRON	ug/L	4040	
6010C	LEAD	ug/L	10	U
6010C	MAGNESIUM	ug/L	53600	
6010C	MANGANESE	ug/L	124	
6010C	NICKEL	ug/L	40	U
6010C	SELENIUM	ug/L	15	U
6010C	SILVER	ug/L	10	U
6010C	SODIUM	ug/L	160000	
6010C	STRONTIUM	ug/L	1960	E
6010C	THALLIUM	ug/L	20	U
6010C	VANADIUM	ug/L	50	U
6010C	ZINC	ug/L	30.2	
6020A	URANIUM, TOTAL	ug/L	0.28	J

Note: Qualifier varies by analtyical method - analytical method is noted in the description of the qualifier.

LabQual = Laboratory Qualifier

pCi/L = picoCuries per Liter

ug/L = micrograms per Liter

B - 8260B = Method blank contamination. The associated method blank contains the target analyte at a reporable level.

E - 6010C = Matrix interference

J - 8260B = Estimated result. Result is less than RL.

J - 6020A = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 4-1

Monitoring Well Construction, Elevation, and Gauging Data Summary

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Date Installed or Completed	Total Boring Depth (ft bgs)	NYS Plane Coordinates		Ground Surface Elevation (ft msl)[a]	Bedrock Data		Well Construction Data				Top of Casing Elevation (ft msl)	Well Gauging Data - August 3, 2011					
			Northing	Easting		Depth to Top of Bedrock (ft bgs)[b]	Top of Bedrock Elevation (ft bgs)	Well Screen Interval (ft bgs)	Screen Mid-Point (ft bgs)	Screen Mid-Point (ft msl)	Riser Casing Stick-up[c]		Depth to Water (ft toc)[d]	Depth to Water (ft bgs)	Sounded Well Depth (ft toc)	Water Column (ft)	Water Level Elevation (ft msl)	Water Level vs Bedrock Surface
MW-1	5/15/1997	15.0	1151169.007	1114588.147	598.18	4.2	594.0	9.7 - 14.7	12.2	586.0	1.7	599.92	7.02	5.3	16.89	9.87	592.90	-1.1
MW-2	5/16/1997	14.5	1150745.297	1114445.86	596.86	4.5	592.4	9.2 - 14.2	11.7	585.2	1.9	598.78	8.59	6.7	16.01	7.42	590.19	-2.2
MW-3	5/14/1997	14.4	1151318.591	1114255.527	597.27	4.5	592.8	9.1 - 14.1	11.6	585.7	1.8	599.03	5.68	3.9	16.05	10.37	593.35	0.6
MW-4	5/16/1997	14.4	1150991.979	1113968.992	597.70	3.5	594.2	9.1 - 14.1	11.6	586.1	1.8	599.52	5.34	3.5	16.40	11.06	594.18	0.0
MW-5	5/15/1997	15.5	1151022.504	1114288.966	596.68	3.8	592.9	10.2 - 15.2	12.7	584.0	1.8	598.52	5.50	3.7	17.46	11.96	593.02	0.1
MW-6	10/16/2006	15.7	1151390.545	1114578.817	597.59	4.0	593.6	6.0 - 15.7	10.9	586.7	3.1	600.68	7.68	4.6	19.01	11.33	593.00	-0.6
MW-7	10/16/2006	16.7	1151456.028	1114332.263	598.19	4.5	593.7	7.0 - 16.7	11.9	586.3	3.1	601.32	7.74	4.6	20.18	12.44	593.58	-0.1
MW-8	10/16/2006	16.9	1151017.265	1114579.442	598.31	5.0	593.3	7.0 - 16.9	12.0	586.4	3.1	601.37	9.14	6.1	19.97	10.83	592.23	-1.1
MW-9	10/17/2006	16.0	1150865.296	1114540.144	596.49	3.5	593.0	6.0 - 16.0	11.0	585.5	3.2	599.70	8.38	5.2	19.13	10.75	591.32	-1.7
MW-10	10/17/2006	16.9	1151422.216	1114426.804	599.06	5.5	593.6	7.0 - 16.9	12.0	587.1	2.9	601.92	8.54	5.7	20.18	11.64	593.38	-0.2
MW-11	10/17/2006	17.8	1150731.053	1114330.383	596.77	6.0	590.8	8.0 - 17.8	12.9	583.9	3.0	599.79	9.56	6.5	21.17	11.61	590.23	-0.5
MW-12	10/17/2006	17.0	1151170.8	1114293.653	596.88	5.0	591.9	7.0 - 17.0	12.0	584.9	3.1	600.01	6.43	3.3	20.20	13.77	593.58	1.7
MW-13D	10/18/2006	16.0	1151670.936	1113213.497	600.15	4.5	595.7	6.0 - 16.0	11.0	589.2	3.3	603.47	7.85	4.5	19.41	11.56	595.62	0.0
MW-14	10/18/2006	16.0	1151532.721	1112903.651	598.90	4.0	594.9	6.0 - 16.0	11.0	587.9	3.5	602.36	8.24	4.8	19.58	11.34	594.12	-0.8
MW-15	10/18/2006	20.0	1151821.192	1113067.534	604.42	8.0	596.4	10.0 - 20.0	15.0	589.4	3.7	608.09	10.70	7.0	23.08	12.38	597.39	1.0
MW-16	10/18/2006	17.0	1151919.405	1112856.716	601.41	5.2	596.2	7.0 - 17.0	12.0	589.4	3.0	604.37	8.54	5.6	20.08	11.54	595.83	-0.4
MW-17	10/19/2006	16.8	1152083.286	1113110.843	603.79	4.5	599.3	7.0 - 16.8	11.9	591.9	3.2	606.97	8.92	5.7	20.09	11.17	598.05	-1.2
MW-18	10/19/2006	13.9	1151399.389	1113241.81	599.48	3.5	596.0	5.0 - 13.9	9.5	590.0	2.9	602.36	7.42	4.5	18.03	10.61	594.94	-1.0
MW-19	10/19/2006	20.0	1150647.624	1113272.73	598.29	8.0	590.3	10.0 - 20.0	15.0	583.3	3.1	601.36	10.13	7.1	19.89	9.76	591.23	0.9
MW-20	10/19/2006	17.0	1151869.133	1113979.969	600.50	5.0	595.5	7.0 - 17.0	12.0	588.5	3.1	603.62	9.18	6.1	20.19	11.01	594.44	-1.1
MW-21	10/19/2006	21.0	1151900.305	1113495.119	605.41	9.0	596.4	11.0 - 21.0	16.0	589.4	3.1	608.46	12.73	9.7	24.20	11.47	595.73	-0.7
MW-22	10/20/2006	17.0	1151454.051	1114201.618	598.09	5.0	593.1	7.0 - 17.0	12.0	586.1	3.3	601.35	7.16	3.9	20.18	13.02	594.19	1.1
MW-23	10/20/2006	16.0	1151199.354	1113989.219	597.58	4.0	593.6	6.0 - 16.0	11.0	586.6	2.9	600.50	5.96	3.0	19.05	13.09	594.54	1.0
MW-24	10/20/2006	16.4	1150709.434	1114195.383	597.27	5.5	591.8	7.0 - 16.4	11.7	585.6	NM	NM	4.02	NM	16.67	12.65	593.25	1.5
MW-25	10/23/2006	17.0	1150882.706	1113897.13	597.22	5.0	592.2	7.0 - 17.0	12.0	585.2	NM	NM	2.66	NM	15.99	13.33	594.56	2.3
MW-26	10/24/2006	17.0	1150702.223	1113906.035	596.93	5.5	591.4	7.0 - 17.0	12.0	584.9	NM	NM	3.27	NM	16.91	13.64	593.66	2.2
MW-600S	7/13/2007	8.0	1152593.471	1113450.582	610.54	NM	NM	5.5 - 7.5	6.5	604.0	2.9	613.45	9.86	6.9	10.43	0.57	603.59	NM
MW-600D	7/12/2007	23.4	1152597.563	1113453.095	610.54	8.4	602.1	13.0 - 23.0	18.0	592.5	2.8	613.29	11.16	8.4	24.78	13.62	602.13	0.0
MW-601D	7/18/2007	20.0	1151590.312	1113678.53	602.42	5.0	597.4	9.5 - 19.5	14.5	587.9	2.4	604.85	10.17	7.7	22.15	11.98	594.68	-2.7
MW-602D	7/19/2007	20.5	1151608.784	1113836.965	601.14	5.5	595.6	10.0 - 20.0	15.0	586.1	2.9	604.01	9.47	6.6	22.08	12.61	594.54	-1.1
MW-603D	7/19/2007	20.0	1151507.173	1114576.051	597.69	5.0	592.7	9.5 - 19.5	14.5	583.2	2.7	600.43	7.22	4.5	22.62	15.40	593.21	0.5
MW-604D	7/12/2007	19.0	1150387.801	1114130.534	596.25	4.2	592.1	8.2 - 18.2	13.2	583.1	-0.3	595.98	7.06	7.3	18.09	11.03	588.92	-3.1
MW-605D	7/17/2007	18.5	1151214.561	1113641.473	598.50	3.5	595.0	8.0 - 18.0	13.0	585.5	-0.4	598.11	3.21	3.6	17.40	14.19	594.90	-0.1
MW-606D	7/18/2007	20.5	1151527.708	1112903.693	598.91	5.5	593.4	10.0 - 20.0	15.0	583.9	2.6	601.49	7.77	5.2	22.57	14.80	593.72	0.3
MW-606DR	10/8/2007	21.0	1151494.451	1113071.38	599.49	6.0	593.5	10.5 - 20.5	15.5	584.0	2.7	602.21	7.79	5.1	22.44	14.65	594.42	0.9
MW-607D	7/18/2007	17.9	1151370.04	1112752.663	597.93	2.9	595.0	7.4 - 17.4	12.4	585.5	2.5	600.38	7.83	5.4	19.79	11.96	592.55	-2.5
MW-701 DD	6/16/2011	80.0	1151810.983	1113308.462	604.47	7.6	596.9	30.0 - 40.0	35.0	569.5	2.8	607.22	11.06	8.3	42.80	31.74	596.16	-0.7
MW-702 DD	6/24/2011	40.0	1151606.404	1113840.932	600.68	4.0	596.7	30.0 - 40.0	35.0	565.7	2.2	602.84	9.14	7.0	41.60	32.46	593.70	-3.0
MW-703 DD	7/15/2011	40.0	1151373.874	1112755.563	597.55	2.0	595.6	30.0 - 40.0	35.0	562.6	1.6	599.15	24.76	23.2	41.78	17.02	574.39	-21.2
MW-704 DD	6/22/2011	40.0	1151214.749	1113649.29	598.21	4.0	594.2	29.0 - 39.0	34.0	564.2	-0.2	597.97	3.10	3.3	38.79	35.69	594.87	0.7
MW-705 D	7/1/2011	20.0	1150953.498	1112952.424	597.09	2.4	594.7	10.0 - 20.0	15.0	582.1	1.8	598.85	7.56	5.8	21.43	13.87	591.29	-3.4
MW-705 DD	6/30/2011	40.0	1150950.273	1112957.606	597.06	2.5	594.6	30.0 - 40.0	35.0	562.1	1.8	598.88	7.41	5.6	41.54	34.13	591.47	-3.1
MW-706 DD	6/22/2011	50.0	1150646.276	1113276.959	598.24	6.5	591.7	30.0 - 40.0	35.0	563.2	2.4	600.61	9.62	7.2	42.30	32.68	590.99	-0.8
MW-707 DD	6/29/2011	40.0	1150751.511	1113905.844	596.60	3.4	593.2	30.0 - 40.0	35.0	561.6	-0.3	596.32	35.10	35.4	39.53	4.43	561.22	-32.0
MW-708 DD	6/28/2011	40.0	1150684.977	1114514.232	597.75	1.8	596.0	30.0 - 40.0	35.0	562.8	-0.1	597.61	8.16	8.3	39.67	31.51	589.45	-6.5
MW-709 DD	6/20/2011	80.0	1150388.975	1114136.674	595.92	2.4	593.5	30.0 - 40.0	35.0	560.9	-0.3	595.61	8.07	8.4	40.25	32.18	587.54	-6.0
MW-710 D	7/1/2011	20.0	1150424.512	1114362.361	596.31	3.0	593.3	10.0 - 20.0	15.0	581.3	1.9	598.19	12.17	10.3	21.37	9.20	586.02	-7.3
MW-710 DD	6/30/2011	42.0	1150429.885	1114365.612	596.38	3.0	593.4	30.0 - 40.0	35.0	561.4	1.6	598.00	22.62	21.0	41.97	19.35	575.38	-18.0
MW-711 D	7/6/2011	20.0	1149812.113	1113953.226	593.07	7.0	586.1	10.0 - 20.0	15.0	578.1	2.0	595.09	12.55	10.5	21.95	9.40	582.54	-3.5
MW-711 DD	7/5/2011	40.0	1149813.26	1113958.642	593.01	3.0	590.0	30.0 - 40.0	35.0	558.0	2.0	595.05	11.37	9.3	42.21	30.84	583.68	-6.3
MW-712 D	8/1/2011	20.0	1150173.714	1114255.632	594.24	1.8	592.4	10.0 - 20.0	15.0	579.2	2.2	596.48	DRY	DRY	22.02	0.00	NA	NA
MW-712 DD	8/1/2011	40.0	1150166.277	1114252.998	593.99	1.8	592.2	30.0 - 40.0	35.0	559.0	2.3	596.33	30.18	27.8	41.76	11.58	566.15	-26.0
MW-713 D	8/1/2011	20.0	1150620.082	1114594.67	597.31	1.7	595.6	10.0 - 20.0	15.0	582.3	2.2	599.54	12.20	10.0	21.99	9.79	587.34	-8.3

Notes:

Location coordinates and elevations for wells installed prior to 2011 from 2007 Remedial Investigation Report.

[a] ft msl = feet above mean sea level

[b] ft bgs = feet below ground surface

[c] feet above or below ground surface. Negative values indicate below grade installation.

[d] ft toc = feet below top of riser casing

[e] Negative values indicate water level below top of bedrock surface, positive values indicate water level above top of bedrock surface.

NM = not measured

TOC elevation data not available for MW-24, MW-25, and MW-26. These wells are flush-mounted (below grade). Water level elevations are referenced from ground surface.

NA = Not Applicable

Table 4-2

Hydraulic Conductivty Data Summary

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Top of Casing (TOC) Elevation ft. MSL [a]	Ground Surface (GS) Elevation ft. MSL	Casing Stickup ft.	8/3/11 Depth to Water (DTW) ft. from TOC	8/3/11 Ground Water Elevation ft. MSL	Depth to bottom of casing / screen ft. from TOC	Screen Length ft.	Depth to top of casing / screen ft. from TOC	Depth to bottom of casing / screen ft. BGS [b]	8/3/11 water column ft.	Test Date	DTW on Test Date ft. from TOC	Saturated Thickness on Test Date ft.	Data Set ID	Tested Horizon	Lowest RQD value in saturated screened interval (%)	Slug Type	Test Type	Initial Displacement, ft.	Solution	Correction Factors		Estimated Horizontal Hydraulic Conductivity for each test		Average Horizontal Hydraulic Conductivity	
																					Frictional Well Loss	Effective Casing Radius	ft. /day	cm/sec [c]	ft. /day	cm/sec
MW-701 DD	607.22	604.47	2.75	11.06	596.16	42.8	10	30.05	40.05	31.74	8/30/11	11.76	31.04	Test1	Deep	95	Pneumatic	Rising Head	1.82	KGS	Yes	No	5.2	1.8E-03	5.1	1.8E-03
														Test 2					2.05		Yes	No	5.1	1.8E-03		
														Test3					1.88		Yes	No	5.2	1.8E-03		
MW-702 DD	602.84	600.68	2.16	9.14	593.7	41.6	10	29.44	39.44	32.46	8/30/11	8.50	33.10	PS Test 1	Deep	99	Pneumatic	Rising Head	Anomalously fast head recoveries following pressure release which contradicted observations made during sampling and well development.						0.011	3.7E-06
														PS Test 2												
														PS Test 3												
														602D Offset					Maximum displacement of 0.09 ft. observed in MW-607D							
											9/1/11			SS FH Extra			Solid Slug	Falling Head	1.99	KGS	Yes	No	0.011	3.8E-06		
																				B-R	Yes	No	0.010	3.6E-06		
MW-703 DD	599.15	597.55	1.6	24.76	574.39	41.78	10	30.18	40.18	17.02	8/30/11	24.67	17.11	PS Test 1	Deep	84	Pneumatic	Rising Head	3.52	KGS	Yes	No	11.2	3.9E-03	12.3	4.3E-03
														PS Test 2					3.66	KGS	Yes	No	12.0	4.2E-03		
														PS Test 3					2.93	KGS	Yes	No	13.7	4.8E-03		
														607D Offset					Maximum displacement of 0.11 ft. observed in MW-607D							
MW-704 DD	597.97	598.21	-0.24	3.1	594.87	38.79	10	29.03	39.03	35.69	8/30/11	2.73	36.06	PS Test 1	Deep	99	Pneumatic	Rising Head	0.74	KGS	Yes	No	2.6	9.2E-04	2.6	9.2E-04
														PS Test 2					1.28	B-R	Yes	No	2.6	9.2E-04		
														PS Test 3					1.24	B-R	Yes	No	2.7	9.4E-04		
														605D Offset					Maximum displacement of 0.10 ft. observed in MW-605D							
MW-705 D	598.85	597.09	1.76	7.56	591.29	21.43	10	9.67	19.67	13.87	8/29/11	7.23	14.2	PS Test 1	Shallow	47	Pneumatic	Rising Head	Anomalously fast head recoveries following pressure release which contradicted observations made during sampling and well development.						0.024	8.4E-06
														PS Test 2												
														PS Test 3												
														PS Test 4												
											8/31/11	7.13	14.30	SS FH Test 1 Extra			Solid Slug	Falling Head	2.094	B-R	Yes	No	0.02	8.4E-06		

Table 4-2

Hydraulic Conductivty Data Summary

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Top of Casing (TOC) Elevation ft. MSL [a]	Ground Surface (GS) Elevation ft. MSL	Casing Stickup ft.	8/3/11 Depth to Water (DTW) ft. from TOC	8/3/11 Ground Water Elevation ft. MSL	Depth to bottom of casing / screen ft. from TOC	Screen Length ft.	Depth to top of casing / screen ft. from TOC	Depth to bottom of casing / screen ft. BGS [b]	8/3/11 water column ft.	Test Date	DTW on Test Date ft. from TOC	Saturated Thickness on Test Date ft.	Data Set ID	Tested Horizon	Lowest RQD value in saturated screened interval (%)	Slug Type	Test Type	Initial Displacement, ft.	Solution	Correction Factors		Estimated Horizontal Hydraulic Conductivity for each test		Average Horizontal Hydraulic Conductivity	
																					Frictional Well Loss	Effective Casing Radius	ft. /day	cm/sec [c]	ft. /day	cm/sec
MW-705 DD	598.88	597.06	1.82	7.41	591.47	41.54	10	29.72	39.72	34.13	8/29/11	7.12	34.42	PS Test 1	Deep	95	Pneumatic	Rising Head	Anomalously fast head recoveries following pressure release which contradicted observations made during sampling and well development.						NA, << 1E-06 cm/sec	
														PS Test 2												
														PS Test 3												
														PS Test 4												
											8/31/11			SS FH Test 1 Extra			Solid Slug	Falling Head	Unable to move water through the screen in and out of the formation						
MW-706 DD	600.61	598.24	2.37	9.62	590.99	42.3	10	29.93	39.93	32.68	8/29/11	8.30	34.00	SS FH Test 1	Deep	100	Solid Slug	Falling Head	2.67	B-R	Yes	No	0.24	8.5E-05	0.21	8.5E-05
														SS FH Test 2					3.06	B-R	Yes	No	0.19	6.6E-05		
														SS FH Test 3					2.80	B-R	Yes	No	0.18	6.4E-05		
														SS RH Test 1				Rising Head	3.11	B-R	Yes	No	0.22	7.8E-05		
														SS RH Test 2					2.52	B-R	Yes	No	0.22	7.9E-05		
														SS RH Test 3					1.98	B-R	Yes	No	0.19	6.6E-05		
														MW19 Offset				Falling and Rising	Maximum displacement of 0.07 ft. observed in MW-19						
MW-707 DD	596.32	596.6	-0.28	35.1	561.22	39.53	10	29.81	39.81	4.43	Test not performed; not sufficient saturated thickness														NA	
MW-708 DD	597.61	597.75	-0.14	8.16	589.45	39.67	10	29.81	39.81	31.51	8/26/11	8.09	31.58	Test1	Deep	49	Pneumatic	Falling Head	No displacement observed						7.2	2.5E-03
														Test2					1.214	KGS	Yes	No	7.4	2.6E-03		
														Test3				Falling Head	No significant displacement observed							
														Test4					1.69	KGS	Yes	No	7.0	2.5E-03		
MW-709 DD	595.61	595.92	-0.31	8.07	587.54	40.25	10	30.56	40.56	32.18	8/26/11	7.911	32.34	Test1	Deep	94	Pneumatic	Falling Head	1.03	B-R	Yes	No	1.9	6.7E-04	1.8	6.5E-04
														Test2					0.70	B-R	Yes	No	1.9	6.8E-04		
														Test3					0.74	B-R	Yes	No	1.7	6.1E-04		
														Test4					1.00	B-R	Yes	No	1.8	6.3E-04		
														604D Offset					Maximum displacement of 0.09 ft. observed in MW-604D; three distinct displacements recorded							

Table 4-2

Hydraulic Conductivty Data Summary

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Top of Casing (TOC) Elevation ft. MSL [a]	Ground Surface (GS) Elevation ft. MSL	Casing Stickup ft.	8/3/11 Depth to Water (DTW) ft. from TOC	8/3/11 Ground Water Elevation ft. MSL	Depth to bottom of casing / screen ft. from TOC	Screen Length ft.	Depth to top of casing / screen ft. from TOC	Depth to bottom of casing / screen ft. BGS [b]	8/3/11 water column ft.	Test Date	DTW on Test Date ft. from TOC	Saturated Thickness on Test Date ft.	Data Set ID	Tested Horizon	Lowest RQD value in saturated screened interval (%)	Slug Type	Test Type	Initial Displacement, ft.	Solution	Correction Factors		Estimated Horizontal Hydraulic Conductivity for each test		Average Horizontal Hydraulic Conductivity	
																					Frictional Well Loss	Effective Casing Radius	ft. /day	cm/sec [c]	ft. /day	cm/sec
MW-710 D	598.19	596.31	1.88	12.17	586.02	21.37	10	9.49	19.49	9.2	8/26/11	11.94	9.43	SS RH Test 1	Shallow	9	Solid Slug	Rising Head	0.893	B-R	Yes	Yes	4.4	1.6E-03	3.9	1.4E-03
														SS RH Test 2				No significant displacement observed.								
														SS RH Test 3				Rising Head	2.25	B-R	Yes	No	3.5	1.2E-03		
														SS RH Test 4				No significant displacement observed								
														SS RH Test 5				No significant displacement observed								
														SS FH Test 1				Falling Head	Falling head test data not valid for partially saturated screen							
														SS FH Test 2												
														SS FH Test 3												
														SS FH Test 4												
														SS FH Test 5												
														710DD Offset				Rising and Falling	Maximum displacement of 0.09 ft. observed in MW-710DD							
MW-710 DD	598	596.38	1.62	22.62	575.38	41.97	10	30.35	40.35	19.35	8/24/11	22.44	19.53	Test 3	Deep	91	Pneumatic	Falling	1.072	KGS	Yes	No	4.2	1.5E-03	3.8	1.3E-03
														Test 4					1.06	KGS	Yes	No	3.8	1.3E-03		
														Test5					1.69	KGS	Yes	No	3.5	1.2E-03		
														Test6					1.61	KGS	Yes	No	3.7	1.3E-03		
														710D Offset Test 3					Maximum displacement of 0.09 ft. observed in MW-710D							
MW-711 D	595.09	593.07	2.02	12.55	582.54	21.95	10	9.93	19.93	9.4	8/29/11	12.53	9.42	SS RH Test 1	Shallow	67	Solid Slug	Rising	3.95	KGS	Yes	No	110.4	3.9E-02	110.4	3.9E-02
														SS RH Test 2					1.94	KGS	Yes	No	110.4	3.9E-02		
														SS RH Test 3					Recovered within 3 seconds							
														SS FH Test 1				Falling Head	Falling head test data not valid for partially saturated screen							
														SS FH Test 2												
														SS FH Test 3												
														711DD Offset				Rising and Falling	No distinct displacement trends observed							

Table 4-2

Hydraulic Conductivty Data Summary

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Top of Casing (TOC) Elevation ft. MSL [a]	Ground Surface (GS) Elevation ft. MSL	Casing Stickup ft.	8/3/11 Depth to Water (DTW) ft. from TOC	8/3/11 Ground Water Elevation ft. MSL	Depth to bottom of casing / screen ft. from TOC	Screen Length ft.	Depth to top of casing / screen ft. from TOC	Depth to bottom of casing / screen ft. BGS [b]	8/3/11 water column ft.	Test Date	DTW on Test Date ft. from TOC	Saturated Thickness on Test Date ft.	Data Set ID	Tested Horizon	Lowest RQD value in saturated screened interval (%)	Slug Type	Test Type	Initial Displacement, ft.	Solution	Correction Factors		Estimated Horizontal Hydraulic Conductivity for each test		Average Horizontal Hydraulic Conductivity	
																					Frictional Well Loss	Effective Casing Radius	ft. /day	cm/sec [c]	ft. /day	cm/sec
MW-711 DD	595.05	593.01	2.04	11.37	583.68	42.21	10	30.17	40.17	30.84	9/1/11	11.47	30.74	SS FH extra	Deep	100	Solid Slug	Falling Head	1.84	KGS	Yes	Yes	0.0009	3.3E-07	0.0009	3.3E-07
											8/29/11	10.97	31.24	PS Test 1			Pneumatic	Falling Head	Water level return to static level immediately. In contrast, this well recovered very slowly during development							
														PS Test 2												
														PS Test 3												
MW-712 D	596.48	594.24	2.24	22.02	574.46	22.02	10	9.78	19.78	0	Test not performed; dry well															
MW-712 DD	596.33	593.99	2.34	30.18	566.15	41.76	10	29.42	39.42	11.58	8/25/11	30.15	11.61	PS Test 1	Deep	70	Pneumatic	Falling Head	2.26	KGS	Yes	No	33.9	1.2E-02	41.4	1.5E-02
														PS Test2					1.21	KGS	Yes	Yes	54.3	1.9E-02		
														PS Test3					1.80	KGS	Yes	Yes	30.7	1.1E-02		
														PS Test 4					1.50	KGS	Yes	Yes	46.7	1.6E-02		
MW-713 D	599.54	597.31	2.23	12.2	587.34	21.99	10	9.76	19.76	9.79	8/25/11	12.27	9.72	SS RH 1	Shallow	44	Solid Slug	Rising Head	2.61	B-R	Yes	Yes	12.3	4.3E-03	8.0	2.8E-03
														SS RH 2					1.98	B-R	Yes	No	6.2	2.2E-03		
														SS RH 3					1.85	B-R	Yes	Yes	5.7	2.0E-03		
														SS FH 1				Falling Head	Falling head test data not valid for partially saturated screen							
														SS FH 2												
														SS FH 3												

The Bouwer_Rice (1976) method or the Butler (1998) eq. 6.11b method was used when the test well is screened across the water table and drainage from filter pack occurs.
The Butler (1998) eq. 3.1 method was used for cases other than drainage from filter pack when correction is needed for the observed initial displacement from solid slugs being less than the expected initial displacement.
The expected initial displacement is calculated as follows:
Slug dimensions = 1.25 inches diameter x 5 ft. length
Expected displacement = slug volume / casing volume per foot = slug length X (slug diameter / casing diameter) ^{2} = 5 ft x (1.25 inch/ 2 inch)^2 = 1.95 ft

Table 4-2

Hydraulic Conductivty Data Summary

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Top of Casing (TOC) Elevation ft. MSL [a]	Ground Surface (GS) Elevation ft. MSL	Casing Stickup ft.	8/3/11 Depth to Water (DTW) ft. from TOC	8/3/11 Ground Water Elevation ft. MSL	Depth to bottom of casing / screen ft. from TOC	Screen Length ft.	Depth to top of casing / screen ft. from TOC	Depth to bottom of casing / screen ft. BGS [b]	8/3/11 water column ft.	Test Date	DTW on Test Date ft. from TOC	Saturated Thickness on Test Date ft.	Data Set ID	Tested Horizon	Lowest RQD value in saturated screened interval (%)	Slug Type	Test Type	Initial Displacement, ft.	Solution	Correction Factors		Estimated Horizontal Hydraulic Conductivity for each test		Average Horizontal Hydraulic Conductivity	
																					Frictional Well Loss	Effective Casing Radius	ft. /day	cm/sec [c]	ft. /day	cm/sec
MW-1	599.92	598.18	1.74	7.02	592.9	16.89	5	10.15	15.15	9.87	9/17/07	7.28	9.61	MW-01a	Shallow	not cored	Solid Slug	Falling Head	1	B-R	NA	NA	5.95	0.0021	6.80	2.40E-03
														MW-01b				Rising Head	2	B-R	NA	NA	7.37	0.0026		
														MW-01c				Falling Head	2	B-R	NA	NA	6.80	0.0024		
														MW-01d				Rising Head	2	B-R	NA	NA	7.09	0.0025		
MW-2	598.78	596.86	1.92	8.59	590.19	16.01	5	9.09	14.09	7.42	9/17/07	8.66	7.35	MW-02a	Shallow	not cored	Solid Slug	Falling Head	1.5	B-R	NA	NA	10.77	0.0038	10.35	3.65E-03
														MW-02b				Rising Head	0.8	B-R	NA	NA	9.92	0.0035		
MW-3	599.03	597.27	1.76	5.68	593.35	16.05	5	9.29	14.29	10.37	9/18/07	6.12	9.93	MW-03a	Shallow	not cored	Solid Slug	Falling Head	1.1	B-R	NA	NA	252.28	0.0890	218.27	7.70E-02
														MW-03b				Rising Head	1	B-R	NA	NA	184.25	0.0650		
MW-4	599.52	597.7	1.82	5.34	594.18	16.4	5	9.58	14.58	11.06	9/18/07	5.95	10.45	MW-04a	Shallow	not cored	Solid Slug	Falling Head	2	B-R	NA	NA	7.37	0.0026	7.23	2.55E-03
														MW-04b				Rising Head	2	B-R	NA	NA	7.09	0.0025		
MW-5	598.52	596.68	1.84	5.5	593.02	17.46	5	10.62	15.62	11.96	9/18/07	5.92	11.54	MW-05a	Shallow	not cored	Solid Slug	Falling Head	2.2	B-R	NA	NA	22.39	0.0079	21.40	7.55E-03
														MW-05b				Rising Head	2.2	B-R	NA	NA	20.41	0.0072		
MW-06	600.68	597.59	3.09	7.68	593	19.01	10	5.92	15.92	11.33	9/17/07	7.7	11.31	MW-06a	Shallow	not cored	Pneumatic	Rising Head	1.5	B-R	NA	NA	36.85	0.0130	34.02	1.20E-02
														MW-06b				Rising Head	1.1	B-R	NA	NA	36.85	0.0130		
														MW-06c				Rising Head	0.8	B-R	NA	NA	28.35	0.0100		
MW-08	601.37	598.31	3.06	9.14	592.23	19.97	10	6.91	16.91	10.83	9/17/07	9.33	10.64	MW-08a	Shallow	not cored	Solid Slug	Falling Head	0.8	B-R	NA	NA	2.83	0.0010	7.44	2.63E-03
														MW-08b				Rising Head	2.1	B-R	NA	NA	9.92	0.0035		
														MW-8c				Falling Head	2.2	B-R	NA	NA	8.22	0.0029		
														MW-08d				Rising Head	2.1	B-R	NA	NA	8.79	0.0031		
MW-09	599.7	596.49	3.21	8.38	591.32	19.13	10	5.92	15.92	10.75	9/17/07	8.78	10.35	MW-09a	Shallow	not cored	Solid Slug	Falling Head	1.1	B-R	NA	NA	116.22	0.0410	118.49	4.18E-02
														MW-09b				Rising Head	1	B-R	NA	NA	127.56	0.0450		
														MW-09c				Falling Head	1	B-R	NA	NA	119.06	0.0420		
														MW-09d				Rising Head	1.4	B-R	NA	NA	99.21	0.0350		
														MW-09e				Falling Head	1.1	B-R	NA	NA	130.39	0.0460		

Table 4-2

Hydraulic Conductivty Data Summary

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Top of Casing (TOC) Elevation ft. MSL [a]	Ground Surface (GS) Elevation ft. MSL	Casing Stickup ft.	8/3/11 Depth to Water (DTW) ft. from TOC	8/3/11 Ground Water Elevation ft. MSL	Depth to bottom of casing / screen ft. from TOC	Screen Length ft.	Depth to top of casing / screen ft. from TOC	Depth to bottom of casing / screen ft. BGS [b]	8/3/11 water column ft.	Test Date	DTW on Test Date ft. from TOC	Saturated Thickness on Test Date ft.	Data Set ID	Tested Horizon	Lowest RQD value in saturated screened interval (%)	Slug Type	Test Type	Initial Displacement, ft.	Solution	Correction Factors		Estimated Horizontal Hydraulic Conductivity for each test		Average Horizontal Hydraulic Conductivity	
																					Frictional Well Loss	Effective Casing Radius	ft. /day	cm/sec [c]	ft. /day	cm/sec
MW-11	599.79	596.77	3.02	9.56	590.23	21.17	10	8.15	18.15	11.61	9/17/07	9.64	11.53	MW-11a	Shallow	not cored	Solid Slug	Rising Head	2	B-R	NA	NA	13.89	0.0049	14.17	5.00E-03
														MW-11b				Falling Head	2.3	B-R	NA	NA	14.46	0.0051		
MW-13D	603.47	600.15	3.32	7.85	595.62	19.41	10	6.09	16.09	11.56	9/12/07	9.56	9.85	MW-13Da	Shallow	not cored	Solid Slug	Rising Head	2	B-R	NA	NA	8.22	0.0029	8.08	2.85E-03
														MW-13Db				Rising Head	2.2	B-R	NA	NA	7.94	0.0028		
MW-14	602.36	598.9	3.46	8.24	594.12	19.58	10	6.12	16.12	11.34	9/12/07	9.4	10.18	MW-14a	Shallow	not cored	Solid Slug	Rising Head	2.2	B-R	NA	NA	5.95	0.0021	4.63	1.63E-03
														MW-14b				Rising Head	2.3	B-R	NA	NA	3.12	0.0011		
														MW-14c				Rising Head	2.2	B-R	NA	NA	4.82	0.0017		
MW-15	608.09	604.42	3.67	10.7	597.39	23.08	10	9.41	19.41	12.38	9/13/07	13.7	9.38	MW-15	Shallow	not cored	Solid Slug	Rising Head	2	B-R	NA	NA	0.20	0.000071	0.20	7.10E-05
MW-16	604.37	601.41	2.96	8.54	595.83	20.08	10	7.12	17.12	11.54	9/12/07	10.56	9.52	MW-16a	Shallow	not cored	Solid Slug	Rising Head	1.5	B-R	NA	NA	53.86	0.0190	53.86	1.90E-02
														MW-16b				Rising Head	1.9	B-R	NA	NA	53.86	0.0190		
MW-17	606.97	603.79	3.18	8.92	598.05	20.09	10	6.91	16.91	11.17	9/11/07	10.86	9.23	MW-17a	Shallow	not cored	Solid Slug	Rising Head	2.2	B-R	NA	NA	1.30	0.00046	1.45	5.10E-04
														MW-17b				Rising Head	2	B-R	NA	NA	1.39	0.00049		
														MW-17c				Rising Head	2.2	B-R	NA	NA	1.64	0.00058		
MW-18	602.36	599.48	2.88	7.42	594.94	18.03	10	5.15	15.15	10.61	9/14/07	8.68	9.35	MW-18a	Shallow	not cored	Solid Slug	Rising Head	2.1	B-R	NA	NA	3.40	0.0012	3.69	1.30E-03
														MW-18b				Rising Head	2.1	B-R	NA	NA	3.97	0.0014		
MW-19	601.36	598.29	3.07	10.13	591.23	19.89	10	6.82	16.82	9.76	9/13/07	11.02	8.87	MW-19a	Shallow	not cored	Pneumatic	Rising Head	0.35	B-R	NA	NA	8.79	0.0031	8.13	2.87E-03
														MW-19b				Rising Head	0.35	B-R	NA	NA	7.65	0.0027		
														MW-19c				Rising Head	0.35	B-R	NA	NA	7.94	0.0028		
MW-20	603.62	600.5	3.12	9.18	594.44	20.19	10	7.07	17.07	11.01	9/13/07	9.79	10.4	MW-20a	Shallow	not cored	Solid Slug	Rising Head	2.2	B-R	NA	NA	20.69	0.0073	21.69	7.65E-03
														MW-20b				Rising Head	2.2	B-R	NA	NA	22.68	0.0080		
MW-21	608.46	605.41	3.05	12.73	595.73	24.2	10	11.15	21.15	11.47	9/13/07	13.99	10.21	MW-21a	Shallow	not cored	Solid Slug	Rising Head	2.2	B-R	NA	NA	2.13	0.00075	2.13	7.50E-04
														MW21b				Rising Head	2.2	B-R	NA	NA	2.13	0.00075		

Table 4-2

Hydraulic Conductivty Data Summary

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Top of Casing (TOC) Elevation ft. MSL [a]	Ground Surface (GS) Elevation ft. MSL	Casing Stickup ft.	8/3/11 Depth to Water (DTW) ft. from TOC	8/3/11 Ground Water Elevation ft. MSL	Depth to bottom of casing / screen ft. from TOC	Screen Length ft.	Depth to top of casing / screen ft. from TOC	Depth to bottom of casing / screen ft. BGS [b]	8/3/11 water column ft.	Test Date	DTW on Test Date ft. from TOC	Saturated Thickness on Test Date ft.	Data Set ID	Tested Horizon	Lowest RQD value in saturated screened interval (%)	Slug Type	Test Type	Initial Displacement, ft.	Solution	Correction Factors		Estimated Horizontal Hydraulic Conductivity for each test		Average Horizontal Hydraulic Conductivity	
																					Frictional Well Loss	Effective Casing Radius	ft. /day	cm/sec [c]	ft. /day	cm/sec
MW-22	601.35	598.09	3.26	7.16	594.19	20.18	10	6.92	16.92	13.02	9/14/07	7.46	12.72	MW-22a	Shallow	not cored	Pneumatic	Rising Head	0.3	B-R	NA	NA	79.37	0.0280	37.98	1.34E-02
														MW-22b				Rising Head	0.3	B-R	NA	NA	17.29	0.0061		
														MW-22c				Rising Head	0.3	B-R	NA	NA	17.29	0.0061		
MW-23	600.5	597.58	2.92	5.96	594.54	19.05	10	6.13	16.13	13.09	9/18/07	6.55	12.5	MW-23a	Shallow	not cored	Solid Slug	Falling Head	2.2	B-R	NA	NA	1.28	0.0005	1.37	4.85E-04
														MW-23b				Rising Head	2.2	B-R	NA	NA	1.47	0.0005		
MW-24	NM	597.27	-0.2 est	4.02	593.25	16.67	10	6.87	16.87	12.65	9/18/07	4.18	12.49	MW-24a	Shallow	not cored	Solid Slug	Falling Head	1.6	B-R	NA	NA	13.89	0.0049	13.46	4.75E-03
														MW-24b				Rising Head	1.6	B-R	NA	NA	13.04	0.0046		
MW-600D	613.29	610.54	2.75	11.16	602.13	24.78	10	12.03	22.03	13.62	9/11/07	12.75	12.03	MW-600Da	Shallow	37	Pneumatic	Rising Head	2.2	B-R	NA	NA	34.02	0.0120	34.72	1.23E-02
														MW-600Db				Rising Head	2.2	B-R	NA	NA	36.85	0.0130		
														MW-600Dc				Rising Head	2.2	B-R	NA	NA	31.18	0.0110		
														MW-600Dd				Rising Head	2.2	B-R	NA	NA	36.85	0.0130		
MW-601D	604.85	602.42	2.43	10.17	594.68	22.15	10	9.72	19.72	11.98	9/14/07	10.84	11.31	MW-601Da	Shallow	32	Solid Slug	Rising Head	2	B-R	NA	NA	27.21	0.0096	27.21	9.60E-03
														MW-601Db				Rising Head	2	B-R	NA	NA	27.21	0.0096		
MW-602D	604.01	601.14	2.87	9.47	594.54	22.08	10	9.21	19.21	12.61	9/14/07	9.96	12.12	MW-602Da	Shallow	36	Solid Slug	Falling Head	1.8	B-R	NA	NA	36.85	0.0130	38.98	1.38E-02
														MW-602Db				Rising Head	1.8	B-R	NA	NA	34.02	0.0120		
														MW-602Dc				Falling Head	1.8	B-R	NA	NA	42.52	0.0150		
														MW-602Dd				Rising Head	1.8	B-R	NA	NA	42.52	0.0150		
MW-603D	600.43	597.69	2.74	7.22	593.21	22.62	10	9.88	19.88	15.4	9/14/07	7.33	15.29	MW-603Da	Shallow	7.5	Solid Slug	Falling Head	2.1	B-R	NA	NA	14.46	0.0051	13.96	4.93E-03
														MW-603Db				Rising Head	2.1	B-R	NA	NA	14.46	0.0051		
														MW-603Dc				Falling Head	2.1	B-R	NA	NA	14.46	0.0051		
														MW-603Dd				Rising Head	2.1	B-R	NA	NA	12.47	0.0044		

Table 4-2

Hydraulic Conductivty Data Summary

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Top of Casing (TOC) Elevation ft. MSL [a]	Ground Surface (GS) Elevation ft. MSL	Casing Stickup ft.	8/3/11 Depth to Water (DTW) ft. from TOC	8/3/11 Ground Water Elevation ft. MSL	Depth to bottom of casing / screen ft. from TOC	Screen Length ft.	Depth to top of casing / screen ft. from TOC	Depth to bottom of casing / screen ft. BGS [b]	8/3/11 water column ft.	Test Date	DTW on Test Date ft. from TOC	Saturated Thickness on Test Date ft.	Data Set ID	Tested Horizon	Lowest RQD value in saturated screened interval (%)	Slug Type	Test Type	Initial Displacement, ft.	Solution	Correction Factors		Estimated Horizontal Hydraulic Conductivity for each test		Average Horizontal Hydraulic Conductivity	
																					Frictional Well Loss	Effective Casing Radius	ft. /day	cm/sec [c]	ft. /day	cm/sec
MW-604D	595.98	596.25	-0.27	7.06	588.92	18.09	10	8.36	18.36	11.03	9/13/07	6.64	11.45	MW-604Da	Shallow	39	Pneumatic	Rising Head	0.5	B-R	NA	NA	22.11	0.0078	15.50	5.47E-03
														MW-604Db				Rising Head	0.5	B-R	NA	NA	8.50	0.0030		
														MW-604Dc				Rising Head	0.5	B-R	NA	NA	15.87	0.0056		
MW-605D	598.11	598.5	-0.39	3.21	594.9	17.4	10	7.79	17.79	14.19	9/13/07	4.13	13.27	MW-605Da	Shallow	16	Pneumatic	Rising Head	1.6	B-R	NA	NA	31.18	0.0110	34.02	1.20E-02
														MW-605Db				Rising Head	NA	B-R	NA	NA	31.18	0.0110		
														MW-605Dc				Rising Head	1.6	B-R	NA	NA	39.69	0.0140		
MW-607D	600.38	597.93	2.45	7.83	592.55	19.79	10	7.34	17.34	11.96	9/12/07	6.7	13.09	MW-607Da	Shallow	20	Solid Slug	Rising Head	2	B-R	NA	NA	6.80	0.0024	7.09	2.50E-03
														MW-607Db				Rising Head	2	B-R	NA	NA	7.37	0.0026		

Average	Shallow	27.8	9.80E-03
Median	Shallow	11.9	4.20E-03
Geometric Mean	Shallow	10.0	3.52E-03
Average	Deep	7.5	2.63E-03
Median	Deep	3.2	1.13E-03
Geometric Mean	Deep	1.0	3.45E-04

NA - Not applicable or not available

[a] ft MSL = feet mean sea level

[b] BGS = below ground surface

[c] cm/sec = centimeters per second

Table 4-3

Groundwater Analytical Results - Uranium (Filtered vs. Unfiltered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	August 2011					
Well ID	**QC Sample**	**Uranium Unfiltered (ug/L)**	**ValQual**	**Uranium Filtered (Dissolved) (ug/L)**	**ValQual**	**Difference in Concentration (ug/L)**
MW-1		4	J	3.5	J	-0.50
MW-2		41.3	J	39.7	J	-1.60
MW-2	Duplicate	40.1	J	39.5	J	-0.60
MW-3		2.6		2.5		-0.10
MW-4		48		46		-2.00
MW-5		6.1		6.2		0.10
MW-6		3.6		3.6		0.00
MW-7		33.4		32.4		-1.00
MW-8		1.1	J	1.1	J	0.00
MW-9		21.8	J	21.1	J	-0.70
MW-10		1.6		1.5		-0.10
MW-11		17.7	J	14.5	J	-3.20
MW-12		3.9		3.8		-0.10
MW-13D		79.8		80.2		0.40
MW-14		8		8		0.00
MW-15		2		1.5		-0.50
MW-16		29.3		27.7		-1.60
MW-16	Duplicate	28.4		28.2		-0.20
MW-17		8.5		8.3		-0.20
MW-18		123	J	125	J	2.00
MW-19		16.4	J	12.9	J	-3.50
MW-20		13.5		13.3		-0.20
MW-21		3.1		3.2		0.10
MW-22		73.6	J	65.1	J	-8.50
MW-23		6.7	J	6.3	J	-0.40
MW-24		39.8	J	42.7	J	2.90
MW-25		175		171		-4.00
MW-25	Duplicate	176		174		-2.00
MW-26		107		94.6		-12.40
MW-600D		2.4		2.5		0.10
MW-601D		9.6		10.6		1.00
MW-602D		113		112		-1.00
MW-603D		11.1	J	8.2	J	-2.90
MW-604D		103		101		-2.00
MW-605D		214		209		-5.00
MW-605D	Duplicate	210		212		2.00
MW-606D		7.5		7.4		-0.10
MW-606DR		12.8		12.4		-0.40
MW-607D		19.5		12.3		-7.20
MW-701DD		1.4		1.5		0.10
MW-702DD		4.5		5.8		1.30
MW-703DD		0.28		1	U	0.72
MW-704DD		23.5		26.3		2.80
MW-704DD	Duplicate	24.7		26.9		2.20
MW-705D		0.89	J	2.8	J	1.91
MW-705DD		1.7		0.37		-1.33
MW-706DD		1.8		1.7		-0.10
MW-707DD		34.5		33.9		-0.60
MW-708DD		22.4		23		0.60
MW-708DD	Duplicate	22.5		23.2		0.70
MW-709DD		52.8		55.4		2.60
MW-710D		67.5		66.1		-1.40
MW-710DD		60.8		67		6.20
MW-711D		9		7.4		-1.60
MW-711DD		1.7	J	2.9	J	1.20
MW-712DD		38.7		38.8		0.10
MW-713D		5.1	J	4.7	J	-0.40

Table 4-4

Bulk Density and Effective Porosity Results

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

SOIL SAMPLE LOCATION	AVERAGE LENGTH (INCHES)	AVERAGE DIAMETER (INCHES)	BULK DENSITY (lb/ft^3)[a]	BULK DENSITY (g/cm^3)[b]	DRY DENSITY (lb/ft^3)	DRY DENSITY (g/cm^3)	TOTAL POROSITY (%)	TOTAL POROSITY, FRACTION	DEGREE OF SATURATION (%)	DEGREE OF SATURATION, FRACTION	EFFECTIVE POROSITY, FRACTION
701 DD	15.50	2.25	117.3	1.88	103.1	1.65	43.49	0.43	52.05	0.52	0.21
702 DD	16.40	2.25	101.3	1.62	92	1.47	46.42	0.46	32.03	0.32	0.32
703 DD	11.58	2.25	115.8	1.85	95.6	1.53	43.85	0.44	73.87	0.74	0.11
704 DD	10.79	2.25	88.1	1.41	80.6	1.29	54.34	0.54	22.24	0.22	0.42
706 DD	8.40	2.26	129.8	2.08	113.5	1.82	38.53	0.39	67.98	0.68	0.12
707 DD	8.83	2.24	116	1.86	99.2	1.59	40.94	0.41	65.68	0.66	0.14
708 DD	13.25	2.21	104.9	1.68	93.3	1.49	44.09	0.44	42.24	0.42	0.25
709 DD	5.82	2.24	77.2	1.24	64.7	1.04	60.05	0.60	33.18	0.33	0.40
Minimum	5.82	2.21	77.2	1.24	64.7	1.04	38.53	0.39	22.24	0.22	0.11
Maximum	16.40	2.26	129.8	2.08	113.5	1.82	60.05	0.60	73.87	0.74	0.42
Average	11.32	2.24	106.3	1.70	92.8	1.48	46.46	0.46	48.66	0.49	0.25

[a] lb/ft^3 = pound per cubic foot

[b] g/cm^3 = grams per cubic centimeter

Table 4-5

Kd Analysis

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

SOIL SAMPLE LOCATION	SOIL U CONC. (µg/g)[a]	LEACHATE U CONC. (µg/mL)[b]	Kd (mL/g)[c]	Average Kd (mL/g)
701 DD	22.7	0.00706	3.19E+03	
701 DD	22.7	0.00658	3.43E+03	3,317
701 DD	22.7	0.00677	3.33E+03	
702 DD	1.6	0.00002	8.00E+04	
702 DD	1.6	0.000016	1.00E+05	95,667
702 DD	1.6	0.000015	1.07E+05	
703 DD	0.75	0.000477	1.55E+03	
703 DD	0.75	0.000477	1.55E+03	1,560
703 DD	0.75	0.00047	1.58E+03	
704 DD	5.72	0.00177	3.21E+03	
704 DD	5.72	0.00178	3.19E+03	3,203
704 DD	5.72	0.00177	3.21E+03	
706 DD	3.27	0.00139	2.33E+03	
706 DD	3.27	0.00142	2.28E+03	2,327
706 DD	3.27	0.00137	2.37E+03	
707 DD	2.55	0.00237	1.06E+03	
707 DD	2.55	0.00227	1.10E+03	1,052
707 DD	2.55	0.00251	9.96E+02	
708 DD	7.15	0.000445	1.60E+04	
708 DD	7.15	0.000422	1.69E+04	16,400
708 DD	7.15	0.000437	1.63E+04	
709 DD	1.96	0.000108	1.81E+04	
709 DD	1.96	0.000113	1.73E+04	18,067
709 DD	1.96	0.000104	1.88E+04	

Minimum	1,052 mL/g
Maximum	95,667 mL/g
Average	17,699 mL/g
Geometric Mean	5,722 mL/g

[a] µg/g = microgram per gram
[b] µg/mL = microgram per milliliter
[c] mL/g = milliliter per gram

Table 4-6

Isotopic Uranium

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-1		MW-2		MW-2		MW-3		MW-4		MW-5		MW-6	
			Field Sample ID	A02MW010001		A02MW020001		A02MW9005		A02MW30001		A02MW40001		A02MW50001		A02MW060001	
			Sample Date	8/23/2011		8/23/2011		8/23/2011		8/22/2011		8/19/2011		8/22/2011		8/12/2011	
			Purpose	Original Data		Original Data		Field Duplicate		Original Data		Original Data		Original Data		Original Data	
Analytic Method	**Parameter**	**Units**	**Filtered**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**
A-01-R MOD	URANIUM-234	pCi/L	Total	1.86		12		10.9		0.88		14.9		2.36		1.77	
A-01-R MOD	URANIUM-234	pCi/L	Dissolved	1.32		9.68		10.3		1.06		16.1		2.4		1.57	
A-01-R MOD	URANIUM-235	pCi/L	Total	0.02	U	0.62		0.58		0.04	U	0.87		0.098		0.034	
A-01-R MOD	URANIUM-235	pCi/L	Dissolved	-0.008	U	0.36		0.49		0.012	U	0.8		0.112		0.107	
A-01-R MOD	URANIUM-238	pCi/L	Total	1.22		12.9		12		0.92		14.4		2.06		1.16	
A-01-R MOD	URANIUM-238	pCi/L	Dissolved	1.24		10.4		10.8		0.86		16.7		2.21		1.04	
6020A	URANIUM	ug/L	Total	4	J	41.3	J	40.1	J	2.6		48		6.1		3.6	
6020A	URANIUM	ug/L	Dissolved	3.5	J	39.7	J	39.5	J	2.5		46		6.2		3.6	

NOTE: Qualifier varies by analytical method - analytical method is noted in the description of the qualifier.

pCi/L = picoCuries per Liter

ug/L = micrograms per Liter

ValQual = Validation Qualifier

J - A-01-R MOD = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J - SW6020 = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 4-6

Isotopic Uranium

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-7		MW-8		MW-9		MW-10		MW-11		MW-12		MW-13D	
			Field Sample ID	A02MW070001		A02MW080001		A02MW090001		A02MW100001		A02MW110001		A02MW120001		A03AMW13D0001	
			Sample Date	8/12/2011		8/8/2011		8/8/2011		8/12/2011		8/8/2011		8/22/2011		8/11/2011	
			Purpose	Original Data		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units	Filtered	Value	ValQual	Value	ValQual	Value	ValQual	Value	ValQual	Value	ValQual	Value	ValQual	Value	ValQual
A-01-R MOD	URANIUM-234	pCi/L	Total	11.8		0.37	J	6.07		0.58		4.13		1.49		23.9	
A-01-R MOD	URANIUM-234	pCi/L	Dissolved	10.5		0.4		6.26		0.65		4.75		1.06		22.6	
A-01-R MOD	URANIUM-235	pCi/L	Total	0.67		-0.006	UJ	0.32		0.029		0.26		0.136		1.13	
A-01-R MOD	URANIUM-235	pCi/L	Dissolved	0.54		0.022	U	0.28		0.011	U	0.22		0.14		1.13	
A-01-R MOD	URANIUM-238	pCi/L	Total	12.1		0.24	J	6.48		0.41		4.56		1.43		24.6	
A-01-R MOD	URANIUM-238	pCi/L	Dissolved	10.6		0.34		6.7		0.53		4.65		1.36		23.6	
6020A	URANIUM	ug/L	Total	33.4		1.1	J	21.8	J	1.6		17.7	J	3.9		79.8	
6020A	URANIUM	ug/L	Dissolved	32.4		1.1	J	21.1	J	1.5		14.5	J	3.8		80.2	

Table 4-6

Isotopic Uranium

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-14		MW-15		MW-16		MW-16		MW-17		MW-18		MW-19	
			Field Sample ID	A03MW14D0001		A03MW15D0001		A03MW16D0001		A03MW9004		A03MW17D0001		A04BMW180001		A04BMW190001	
			Sample Date	8/16/2011		8/16/2011		8/19/2011		8/19/2011		8/16/2011		8/5/2011		8/4/2011	
			Purpose	Original Data		Original Data		Original Data		Field Duplicate		Original Data		Original Data		Original Data	
Analytic Method	**Parameter**	**Units**	**Filtered**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQua**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**
A-01-R MOD	URANIUM-234	pCi/L	Total	2.49		0.37		8.8		8.38		2.27		38.8		4.52	
A-01-R MOD	URANIUM-234	pCi/L	Dissolved	2.49		0.48		8.9		9.2		2.39		37.7		4.34	
A-01-R MOD	URANIUM-235	pCi/L	Total	0.17		0.022	U	0.44		0.42		0.18		1.72		0.27	
A-01-R MOD	URANIUM-235	pCi/L	Dissolved	-0.038	U	0.003	U	0.45		0.58		0.161		1.79		0.192	
A-01-R MOD	URANIUM-238	pCi/L	Total	2.08		0.61		9.7		8.88		1.82		39.6		4.77	
A-01-R MOD	URANIUM-238	pCi/L	Dissolved	2.09		0.58		10.2		10.1		2.3		36.6		4.27	
6020A	URANIUM	ug/L	Total	8		2		29.3		28.4		8.5		123	J	16.4	J
6020A	URANIUM	ug/L	Dissolved	8		1.5		27.7		28.2		8.3		125	J	12.9	J

Table 4-6

Isotopic Uranium

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-20		MW-21		MW-22		MW-23		MW-24		MW-25		MW-25		
			Field Sample ID	A04AMW200001		A04AMW210001		A04AMW220001		A04DMW230001		A04DMW240001		A04BMW250001		A04BMW9003		
			Sample Date	8/18/2011		8/18/2011		8/5/2011		8/4/2011		8/4/2011		8/12/2011		8/12/2011		
			Purpose	Original Data		Original Data		Original Data		Original Data		Original Data		Original Data		Field Duplicate		
Analytic Method	**Parameter**	**Units**	**Filtered**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Analytic Method**
A-01-R MOD	URANIUM-234	pCi/L	Total	4.5		0.73		24.3		1.79		13.1		55.7	J	49.9		A-01-R MOD
A-01-R MOD	URANIUM-234	pCi/L	Dissolved	3.89		1.03		21.6		1.74		12.5		58.5	J	55.2		A-01-R MOD
A-01-R MOD	URANIUM-235	pCi/L	Total	0.23		0.058		1.03		0.114		0.43		3.22	J	2.69		A-01-R MOD
A-01-R MOD	URANIUM-235	pCi/L	Dissolved	0.24		0.037	U	1.05		0.136		0.51		3.28	J	2.96		A-01-R MOD
A-01-R MOD	URANIUM-238	pCi/L	Total	4.27		0.79		24.8		1.73		12.6		56.4	J	50.5		A-01-R MOD
A-01-R MOD	URANIUM-238	pCi/L	Dissolved	3.82		0.93		21.2		1.64		11.6		60.5	J	56.6		A-01-R MOD
6020A	URANIUM	ug/L	Total	13.5		3.1		73.6	J	6.7	J	39.8	J	175		176		6020A
6020A	URANIUM	ug/L	Dissolved	13.3		3.2		65.1	J	6.3	J	42.7	J	171		174		6020A

Table 4-6

Isotopic Uranium

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-26		MW-600D		MW-601D		MW-602D		MW-603D		MW-604D	
		Field Sample ID	A04BMW260001		A02MW600D0001		A04AMW610D0001		A04MW602D0001		A04AMW603D0001		A04MW604D0001	
		Sample Date	8/10/2011		8/22/2011		8/18/2011		8/11/2011		8/5/2011		8/10/2011	
		Purpose	Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Parameter	Units	Filtered	Value	ValQual	Value	ValQual	Value	ValQual	Value	ValQual	Value	ValQual	Value	ValQual
URANIUM-234	pCi/L	Total	34.7		0.92		2.54		36.5		2.86		37.1	
URANIUM-234	pCi/L	Dissolved	32.1		1.28		2.56		36.9		3.01		31.4	
URANIUM-235	pCi/L	Total	1.97		0.032	U	0.104		1.84		0.107		1.79	
URANIUM-235	pCi/L	Dissolved	1.62		0.05	U	0.13		2.08		0.196		1.52	
URANIUM-238	pCi/L	Total	35		0.78		2.66		36		2.76		37	
URANIUM-238	pCi/L	Dissolved	32.7		0.93		2.61		36.8		2.97		30.4	
URANIUM	ug/L	Total	107		2.4		9.6		113		11.1	J	103	
URANIUM	ug/L	Dissolved	94.6		2.5		10.6		112		8.2	J	101	

Table 4-6

Isotopic Uranium

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-605D		MW-605D		MW-606D		MW-606DR		MW-607D		MW-701DD	
			Field Sample ID	A04BMW605D0001		A04BMW9000		A03MW606D0001		A03MW606DR0001		A03MW607D0001		A04AMW701DD0001	
			Sample Date	8/10/2011		8/10/2011		8/16/2011		8/15/2011		8/19/2011		8/19/2011	
			Purpose	Original Data		Field Duplicate		Original Data		Original Data		Original Data		Original Data	
Analytic Method	**Parameter**	**Units**	**Filtered**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**
A-01-R MOD	URANIUM-234	pCi/L	Total	67.5		69.2	J	2.6	J	3.37		5.35		0.89	
A-01-R MOD	URANIUM-234	pCi/L	Dissolved	68.6	J	70	J	2.88	J	4.2	J	3.88		0.77	
A-01-R MOD	URANIUM-235	pCi/L	Total	3.43		3.13	J	0.19	J	0.23		0.24		0.041	
A-01-R MOD	URANIUM-235	pCi/L	Dissolved	3.38	J	3.67	J	0.068	J	0.17	J	0.119		0.036	
A-01-R MOD	URANIUM-238	pCi/L	Total	65.8		68.1	J	2.91	J	3.73		4.99		0.39	
A-01-R MOD	URANIUM-238	pCi/L	Dissolved	67.1	J	67.5	J	2.37	J	4.54	J	4.04		0.46	
6020A	URANIUM	ug/L	Total	214		210		7.5		12.8		19.5		1.4	
6020A	URANIUM	ug/L	Dissolved	209		212		7.4		12.4		12.3		1.5	

Table 4-6

Isotopic Uranium

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-702DD		MW-703DD		MW-704DD		MW-704DD		MW-705D		MW-705DD	
			Field Sample ID	A04MW702DD0001		A03MW703DD0001		A04BMW9001		A04DMW704DD0001		MW705D0001		MW705DD0001	
			Sample Date	8/11/2011		8/19/2011		8/10/2011		8/10/2011		8/9/2011		8/9/2011	
			Purpose	Original Data		Original Data		Field Duplicate		Original Data		Original Data		Original Data	
Analytic Method	**Parameter**	**Units**	**Filtered**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**
A-01-R MOD	URANIUM-234	pCi/L	Total	6.65		0.097		9.54		9.35		0.212		0.51	
A-01-R MOD	URANIUM-234	pCi/L	Dissolved	4.94		0.023	U	10.8		10.8		0.5		0.253	
A-01-R MOD	URANIUM-235	pCi/L	Total	0.103		0.015	U	0.3		0.38		0.018	U	0.029	
A-01-R MOD	URANIUM-235	pCi/L	Dissolved	0.123		0	U	0.41		0.46		0.022	U	0	U
A-01-R MOD	URANIUM-238	pCi/L	Total	1.84		0.07		7.26		7.31		0.185		0.291	
A-01-R MOD	URANIUM-238	pCi/L	Dissolved	1.47		0.028	U	8.77		8.36		0.47		0.189	
6020A	URANIUM	ug/L	Total	4.5		0.28		24.7		23.5		0.89	J	1.7	
6020A	URANIUM	ug/L	Dissolved	5.8		1	U	26.9		26.3		2.8	J	0.37	

Table 4-6

Isotopic Uranium

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-706DD		MW-707DD		MW-708DD		MW-708DD		MW-709DD		MW-710D	
			Field Sample ID	A04BMW706D0001		A04BMW707DD0001		A04DMW708DD0001		A04DMW9002		A04DMW709DD0001		A04DMW710D0001	
			Sample Date	8/15/2011		8/18/2011		8/11/2011		8/11/2011		8/10/2011		8/15/2011	
			Purpose	Original Data		Original Data		Original Data		Field Duplicate		Original Data		Original Data	
Analytic Method	**Parameter**	**Units**	**Filtered**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**
A-01-R MOD	URANIUM-234	pCi/L	Total	0.98				7.18		7.03		16.8		19.1	J
A-01-R MOD	URANIUM-234	pCi/L	Dissolved	0.95				7.19		7.51		18.5		24	J
A-01-R MOD	URANIUM-235	pCi/L	Total	0.029	U			0.31		0.5		0.71		1.02	
A-01-R MOD	URANIUM-235	pCi/L	Dissolved	0.012	U			0.3		0.43		0.7		1.2	
A-01-R MOD	URANIUM-238	pCi/L	Total	0.48				7.03		7.39		16		19.9	
A-01-R MOD	URANIUM-238	pCi/L	Dissolved	0.42				6.9		7.06		17.4		23.8	
6020A	URANIUM	ug/L	Total	1.8		34.5		22.4		22.5		52.8		67.5	
6020A	URANIUM	ug/L	Dissolved	1.7		33.9		23		23.2		55.4		66.1	

Table 4-6

Isotopic Uranium

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-710DD		MW-711D		MW-711DD		MW-712DD		MW-713D	
			Field Sample ID	A04DMW710DD0001		A04DMW711D0001		A04DMW711DD0001		A04DMW712DD0001		A04DMW713D0001	
			Sample Date	8/18/2011		8/9/2011		8/15/2011		8/18/2011		8/4/2011	
			Purpose	Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	**Parameter**	**Units**	**Filtered**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**
A-01-R MOD	URANIUM-234	pCi/L	Total	18.6		2.78		0.8	J	13.2		2.62	
A-01-R MOD	URANIUM-234	pCi/L	Dissolved	21		2.7		1.29		14		2.67	
A-01-R MOD	URANIUM-235	pCi/L	Total	1.02		0.092		-0.007	UJ	0.59		0.061	
A-01-R MOD	URANIUM-235	pCi/L	Dissolved	1.38		0.16		0.11	U	0.63		0.076	
A-01-R MOD	URANIUM-238	pCi/L	Total	19.1		2.68		0.71	J	12.7		1.26	
A-01-R MOD	URANIUM-238	pCi/L	Dissolved	21.3		2.3		0.55		12.4		1.4	
6020A	URANIUM	ug/L	Total	60.8		9		1.7	J	38.7		5.1	J
6020A	URANIUM	ug/L	Dissolved	67		7.4		2.9	J	38.8		4.7	J

Table 4-6

Isotopic Uranium

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	Seep-1108-01		Seep-1108-01		Seep-1108-02		Seep-1108-02	
			Field Sample ID	Seep-1108-01		Seep-1108-01		Seep-1108-02		Seep-1108-02	
			Sample Date	8/8/2011		8/8/2011		8/8/2011		8/8/2011	
			Purpose	Original Data		Field Duplicate		Field Duplicate		Original Data	
Analytic Method	**Parameter**	**Units**	**Filtered**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**	**Value**	**ValQual**
A-01-R MOD	URANIUM-234	pCi/L	Total	13.2		15.4		1.89		2.09	
A-01-R MOD	URANIUM-234	pCi/L	Dissolved	15.4						1.89	
A-01-R MOD	URANIUM-235	pCi/L	Total	0.72		0.670		0.088		0.028	U
A-01-R MOD	URANIUM-235	pCi/L	Dissolved	0.67						0.088	
A-01-R MOD	URANIUM-238	pCi/L	Total	13.2		15.3		2.13		1.59	
A-01-R MOD	URANIUM-238	pCi/L	Dissolved	15.3						2.13	
6020A	URANIUM	ug/L	Total	44.9	J	6.2	J	6.3	J	6.3	J
6020A	URANIUM	ug/L	Dissolved	44.3	J					6.2	J

Table 4-7

Groundwater Analytical Results - VOCs

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-2		MW-2		MW-3		MW-4		MW-5		MW-9	
	Field Sample ID	A02MW020001		A02MW9005		A02MW30001		A02MW40001		A02MW50001		A02MW090001	
	Sample Date	8/23/2011		8/23/2011		8/22/2011		8/19/2011		8/22/2011		8/8/2011	
	Purpose	Original Data		Field Duplicate		Original Data		Original Data		Original Data		Original Data	
AnalyticMethod	Parameter	Units	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual
8260B	1,1,1-TRICHLOROETHANE	ug/L	1	U	1	U	2.5		500	D	71	D	0.24	J
8260B	1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
8260B	1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
8260B	1,1-DICHLOROETHANE	ug/L	6.1		5.7		16		110	D	560	D	12	
8260B	1,1-DICHLOROETHENE	ug/L	1.5		1.5		4.8		51	D	20	D	2.9	
8260B	1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
8260B	1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
8260B	1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
8260B	1,3-DICHLOROBENZENE	ug/L	0.21	J	0.21	J	1	U	10	U	10	U	1	U
8260B	1,4-DICHLOROBENZENE	ug/L	1	U	0.21	J	1	U	10	U	10	U	1	U
8260B	2-HEXANONE	ug/L	5	U	5	U	5	U	50	U	50	U	5	U
8260B	ACETONE	ug/L	2	U	2	U	2	U	20	U	20	U	2	
8260B	BENZENE	ug/L	1	U	1	U	1	U	10	U	3.2	JD	0.1	J
8260B	BROMODICHLOROMETHANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
8260B	BROMOFORM	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
8260B	BROMOMETHANE	ug/L	2	U	2	U	2	U	20	U	20	U	2	U
8260B	CARBON DISULFIDE	ug/L	2	U	2	U	2	U	20	U	20	U	0.39	J
8260B	CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
8260B	CHLOROBENZENE	ug/L	2	U	2	U	0.24	J	20	U	20	U	2	U
8260B	CHLOROETHANE	ug/L	24		12		2	U	20	U	130	D	14	
8260B	CHLOROFORM	ug/L	1	U	1	U	1	U	10	U	7	JD	1	U
8260B	CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
8260B	DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
8260B	ETHYLBENZENE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
8260B	METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	50	U	50	U	5	U
8260B	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	50	U	50	U	5	U
8260B	METHYLENE CHLORIDE	ug/L	1	U	1	U	1	U	10	U	10	U	0.92	JB
8260B	STYRENE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
8260B	TETRACHLOROETHYLENE(PCE)	ug/L	1	U	1	U	1	U	10	U	1.9	JD	1	U
8260B	TOLUENE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
8260B	TOTAL 1,2-DICHLOROETHENE	ug/L	4.8		4.5		2.3		26	D	17	JD	6.8	
8260B	TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
8260B	TRICHLOROETHYLENE (TCE)	ug/L	1	U	1	U	0.77	J	80	D	12	D	0.79	J
8260B	VINYL CHLORIDE	ug/L	9.2		8.4		0.47	J	1.1	JD	7.5	JD	2.7	
8260B	XYLENES, TOTAL	ug/L	5	U	5	U	5	U	50	U	50	U	5	U

ug/L = micrograms per Liter

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

D = Result was obtained from the analysis of a dilution.

E = Estimated result. Result concentration exceeds the calibration range.

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

LabQual = Laboratory Qualifier

Table 4-7

Groundwater Analytical Results - VOCs

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name		MW-11		MW-12		MW-22		MW-23		MW-24	
	Field Sample ID		A02MW110001		A02MW120001		A04AMW220001		A04DMW230001		A04DMW240001	
	Sample Date		8/8/2011		8/22/2011		8/5/2011		8/4/2011		8/4/2011	
	Purpose		Original Data		Original Data		Original Data		Original Data		Original Data	
AnalyticMethod	Parameter	Units	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual
8260B	1,1,1-TRICHLOROETHANE	ug/L	0.23	J	60	D	29		1100	D	41	E
8260B	1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	5	U	1	U
8260B	1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1.9	JD	1	U
8260B	1,1-DICHLOROETHANE	ug/L	5.9		18		17		650	D	52	E
8260B	1,1-DICHLOROETHENE	ug/L	8.7		2.6		5		50	D	21	
8260B	1,2-DICHLOROBENZENE	ug/L	1	U	0.83	J	1	U	5	U	1	U
8260B	1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	5	U	1	U
8260B	1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	5	U	1	U
8260B	1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	5	U	1	U
8260B	1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	5	U	1	U
8260B	2-HEXANONE	ug/L	5	U	5	U	5	U	25	U	5	U
8260B	ACETONE	ug/L	3.2		2	U	2	U	10	U	2	U
8260B	BENZENE	ug/L	1	U	0.13	J	1	U	5	U	0.41	J
8260B	BROMODICHLOROMETHANE	ug/L	1	U	1	U	1	U	5	U	1	U
8260B	BROMOFORM	ug/L	1	U	1	U	1	U	5	U	1	U
8260B	BROMOMETHANE	ug/L	2	U	2	U	2	U	10	U	2	U
8260B	CARBON DISULFIDE	ug/L	2	U	2	U	2	U	10	U	2	U
8260B	CARBON TETRACHLORIDE	ug/L	1	U	85	D	1	U	5	U	1	U
8260B	CHLOROBENZENE	ug/L	2	U	2	U	2	U	10	U	2	U
8260B	CHLOROETHANE	ug/L	12		2	U	1	J	82	D	15	
8260B	CHLOROFORM	ug/L	1	U	38		1	U	1.4	JD	1	U
8260B	CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	5	U	1	U
8260B	DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	5	U	1	U
8260B	ETHYLBENZENE	ug/L	1	U	1	U	1	U	5	U	1	U
8260B	METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	25	U	5	U
8260B	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	25	U	5	U
8260B	METHYLENE CHLORIDE	ug/L	0.97	JB	1	U	0.51	JB	3.2	JB	1	U
8260B	STYRENE	ug/L	1	U	1	U	1	U	5	U	1	U
8260B	TETRACHLOROETHYLENE(PCE)	ug/L	0.25	J	110	D	3	B	8.5	D	1	U
8260B	TOLUENE	ug/L	1	U	4.1		1	U	0.53	JD	1	U
8260B	TOTAL 1,2-DICHLOROETHENE	ug/L	19		130	D	1.4	J	160	D	24	
8260B	TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	TRICHLOROETHYLENE (TCE)	ug/L	0.59	J	20		2.2		190	D	17	
8260B	VINYL CHLORIDE	ug/L	1.3	J	6.2		2	U	17	D	6.1	
8260B	XYLENES, TOTAL	ug/L	5	U	130	D	5	U	25	U	5	U

Table 4-7

Groundwater Analytical Results - VOCs

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-25		MW-25		MW-26		MW-602D		MW-603D	
		Field Sample ID	A04BMW250001		A04BMW9003		A04BMW260001		A04MW602D0001		A04AMW603D0001	
		Sample Date	8/12/2011		8/12/2011		8/10/2011		8/11/2011		8/5/2011	
		Purpose	Original Data		Field Duplicate		Original Data		Original Data		Original Data	
AnalyticMethod	Parameter	Units	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual
8260B	1,1,1-TRICHLOROETHANE	ug/L			600	D	290	D	0.15	J	1	U
8260B	1,1,2,2-TETRACHLOROETHANE	ug/L	5	U	5	U	5	U	1	U	1	U
8260B	1,1,2-TRICHLOROETHANE	ug/L	1.3	JD	1.6	JD	5	U	1	U	1	U
8260B	1,1-DICHLOROETHANE	ug/L	190	D	190	D	56	D	1	U	0.95	J
8260B	1,1-DICHLOROETHENE	ug/L	44	D	40	D	21	D	1	U	1	U
8260B	1,2-DICHLOROBENZENE	ug/L	5	U	5	U	5	U	1	U	1	U
8260B	1,2-DICHLOROETHANE	ug/L	5	U	5	U	5	U	1	U	1	U
8260B	1,2-DICHLOROPROPANE	ug/L	5	U	5	U	5	U	1	U	1	U
8260B	1,3-DICHLOROBENZENE	ug/L	5	U	5	U	5	U	1	U	1	U
8260B	1,4-DICHLOROBENZENE	ug/L	5	U	5	U	5	U	1	U	1	U
8260B	2-HEXANONE	ug/L	25	U	25	U	25	U	5	U	5	U
8260B	ACETONE	ug/L	10	U	10	U	10	U	2	U	2	U
8260B	BENZENE	ug/L	5	U	5	U	5	U	1	U	1	U
8260B	BROMODICHLOROMETHANE	ug/L	5	U	5	U	5	U	1	U	1	U
8260B	BROMOFORM	ug/L	5	U	5	U	5	U	1	U	1	U
8260B	BROMOMETHANE	ug/L	10	U	10	U	10	U	2	U	2	U
8260B	CARBON DISULFIDE	ug/L	10	U	10	U	10	U	2	U	2	U
8260B	CARBON TETRACHLORIDE	ug/L	5	U	5	U	5	U	1	U	1	U
8260B	CHLOROBENZENE	ug/L	10	U	10	U	10	U	2	U	2	U
8260B	CHLOROETHANE	ug/L	17	D	17	D	10	U	2	U	2	U
8260B	CHLOROFORM	ug/L	5	U	5	U	5	U	0.17	J	1	U
8260B	CIS-1,3-DICHLOROPROPENE	ug/L	5	U	5	U	5	U	1	U	1	U
8260B	DIBROMOCHLOROMETHANE	ug/L	5	U	5	U	5	U	1	U	1	U
8260B	ETHYLBENZENE	ug/L	5	U	5	U	5	U	1	U	1	U
8260B	METHYL ETHYL KETONE (2-BUTANONE)	ug/L	25	U	25	U	25	U	5	U	5	U
8260B	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	25	U	25	U	25	U	5	U	5	U
8260B	METHYLENE CHLORIDE	ug/L	5	UD	2.4	JD	1.8	JD	1	U	0.34	JB
8260B	STYRENE	ug/L	5	U	5	U	5	U	1	U	1	U
8260B	TETRACHLOROETHYLENE(PCE)	ug/L	3.4	JD	3.4	JD	5	U	1	U	0.82	JB
8260B	TOLUENE	ug/L	1.3	JD	1.6	JD	5	U	1	U	1	U
8260B	TOTAL 1,2-DICHLOROETHENE	ug/L	1600	D	1600	D	64	D	2	U	0.18	J
8260B	TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	TRICHLOROETHYLENE (TCE)	ug/L	150	D	160	D	44	D	1	U	1	U
8260B	VINYL CHLORIDE	ug/L	770	D	680	D	6	JD	2	U	2	U
8260B	XYLENES, TOTAL	ug/L	25	U	25	U	25	U	5	U	5	U

Table 4-7

Groundwater Analytical Results - VOCs

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-604D		MW-605D		MW-605D		MW-606D		MW-701DD	
	Field Sample ID	A04MW604D0001		A04BMW605D0001		A04BMW9000		A03MW606D0001		A04AMW701DD0001	
	Sample Date	8/10/2011		8/10/2011		8/10/2011		8/16/2011		8/19/2011	
	Purpose	Original Data		Original Data		Field Duplicate		Original Data		Original Data	
AnalyticMethod	Parameter	Units	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual
8260B	1,1,1-TRICHLOROETHANE	ug/L	42		3.1		2.8		1	U	1	U
8260B	1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	1,1-DICHLOROETHANE	ug/L	18		2.2		2		1	U	1	U
8260B	1,1-DICHLOROETHENE	ug/L	3.9		0.16	J	0.14	J	1	U	1	U
8260B	1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	2-HEXANONE	ug/L	5	U	5	U	5	U	5	U	5	U
8260B	ACETONE	ug/L	2	U	2	U	2	U	2	U	2	U
8260B	BENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	BROMODICHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	BROMOFORM	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	BROMOMETHANE	ug/L	2	U	2	U	2	U	2	U	2	U
8260B	CARBON DISULFIDE	ug/L	2	U	2	U	2	U	2	U	0.4	J
8260B	CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	CHLOROBENZENE	ug/L	2	U	2	U	2	U	2	U	2	U
8260B	CHLOROETHANE	ug/L	2	U	2	U	2	U	2	U	2	U
8260B	CHLOROFORM	ug/L	0.41	J	0.2	J	0.2	J	1	U	0.42	J
8260B	CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	ETHYLBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U
8260B	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U
8260B	METHYLENE CHLORIDE	ug/L	1	U	1	U	0.3	J	0.51	J	1	U
8260B	STYRENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	TETRACHLOROETHYLENE(PCE)	ug/L	0.42	J	1	U	1	U	1	U	1	U
8260B	TOLUENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	TOTAL 1,2-DICHLOROETHENE	ug/L	21		0.34	J	0.25	J	2	U	2	U
8260B	TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	TRICHLOROETHYLENE (TCE)	ug/L	16		2.4		2.2		1	U	1	U
8260B	VINYL CHLORIDE	ug/L	1.2	J	2	U	2	U	2	U	2	U
8260B	XYLENES, TOTAL	ug/L	5	U	5	U	5	U	5	U	5	U

Table 4-7

Groundwater Analytical Results - VOCs

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-702DD		MW-703DD		MW-704DD		MW-704DD		MW-705D	
	Field Sample ID	A04MW702DD0001		A03MW703DD0001		A04BMW9001		A04DMW704DD0001		MW705D0001	
	Sample Date	8/11/2011		8/19/2011		8/10/2011		8/10/2011		8/9/2011	
	Purpose	Original Data		Original Data		Field Duplicate		Original Data		Original Data	
AnalyticMethod	Parameter	Units	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual
8260B	1,1,1-TRICHLOROETHANE	ug/L	1	U	1	U	2.3		2.4		1	U
8260B	1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	1,1-DICHLOROETHANE	ug/L	1	U	1	U	2.8		2.9		1	U
8260B	1,1-DICHLOROETHENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	2-HEXANONE	ug/L	5	U	5	U	5	U	5	U	5	U
8260B	ACETONE	ug/L	2	U	2	U	2	U	2	U	6.3	
8260B	BENZENE	ug/L	1	U	1	U	0.18	J	0.19	J	1	U
8260B	BROMODICHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	BROMOFORM	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	BROMOMETHANE	ug/L	2	U	2	U	2	U	2	U	2	U
8260B	CARBON DISULFIDE	ug/L	0.2	J	2	U	2	U	2	U	1.3	J
8260B	CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	CHLOROBENZENE	ug/L	2	U	2	U	2	U	2	U	2	U
8260B	CHLOROETHANE	ug/L	2	U	2	U	2	U	2	U	2	U
8260B	CHLOROFORM	ug/L	0.18	J	1	U	2.7		2.9		0.13	J
8260B	CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	ETHYLBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U
8260B	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U
8260B	METHYLENE CHLORIDE	ug/L	0.35	J	1	U	0.67	J	0.75	J	0.61	JB
8260B	STYRENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	TETRACHLOROETHYLENE(PCE)	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	TOLUENE	ug/L	1	U	1	U	0.41	J	0.43	J	0.13	J
8260B	TOTAL 1,2-DICHLOROETHENE	ug/L	2	U	2	U	2	U	2	U	2	U
8260B	TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	TRICHLOROETHYLENE (TCE)	ug/L	1	U	1	U	1	U	1	U	1	U
8260B	VINYL CHLORIDE	ug/L	2	U	2	U	2	U	2	U	2	U
8260B	XYLENES, TOTAL	ug/L	5	U	5	U	0.49	J	0.28	J	5	U

Table 4-7

Groundwater Analytical Results - VOCs

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-705DD		MW-706DD		MW-707DD		MW-708DD	
	Field Sample ID	MW705DD0001		A04BMW706D0001		A04BMW707DD0001		A04DMW708DD0001	
	Sample Date	8/9/2011		8/15/2011		8/18/2011		8/11/2011	
	Purpose	Original Data		Original Data		Original Data		Original Data	
AnalyticMethod	Parameter	Units	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual
8260B	1,1,1-TRICHLOROETHANE	ug/L	1	U	0.12	J	2.4		1	U
8260B	1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	1	U
8260B	1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U
8260B	1,1-DICHLOROETHANE	ug/L	1	U	0.38	J	1.5		8.7	
8260B	1,1-DICHLOROETHENE	ug/L	1	U	1	U	1	U	30	
8260B	1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U
8260B	1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U
8260B	1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	1	U
8260B	1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U
8260B	1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U
8260B	2-HEXANONE	ug/L	5	U	5	U	5	U	5	U
8260B	ACETONE	ug/L	2	U	2	U	17		2	U
8260B	BENZENE	ug/L	0.5	J	1	U	4		1	U
8260B	BROMODICHLOROMETHANE	ug/L	1	U	1	U	1		1	U
8260B	BROMOFORM	ug/L	1	U	1	U	1	U	1	U
8260B	BROMOMETHANE	ug/L	2	U	2	U	2	U	2	U
8260B	CARBON DISULFIDE	ug/L	4.4		2	U	2		2	U
8260B	CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	1	U
8260B	CHLOROBENZENE	ug/L	2	U	2	U	2	U	2	U
8260B	CHLOROETHANE	ug/L	2	U	2	U	2	U	2.5	
8260B	CHLOROFORM	ug/L	0.71	J	0.32	J	6.2		0.34	J
8260B	CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U
8260B	DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	0.34	J	1	U
8260B	ETHYLBENZENE	ug/L	0.76	J	1	U	1	U	1	U
8260B	METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	5	U
8260B	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	5	U
8260B	METHYLENE CHLORIDE	ug/L	0.82	JB	0.55	J	1	U	0.37	J
8260B	STYRENE	ug/L	1	U	1	U	1	U	1	U
8260B	TETRACHLOROETHYLENE(PCE)	ug/L	1	U	1	U	1	U	1	U
8260B	TOLUENE	ug/L	2.1		0.12	J	8.3		1	U
8260B	TOTAL 1,2-DICHLOROETHENE	ug/L	2	U	2	U	0.56	J	83	D
8260B	TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U
8260B	TRICHLOROETHYLENE (TCE)	ug/L	1	U	1	U	1	U	1	U
8260B	VINYL CHLORIDE	ug/L	2	U	2	U	2	U	3.4	
8260B	XYLENES, TOTAL	ug/L	4.2	J	5	U	9.8		5	U

Table 4-7

Groundwater Analytical Results - VOCs

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-708DD		MW-709DD		MW-710D		MW-710DD	
		Field Sample ID	A04DMW9002		A04DMW709DD0001		A04DMW710D0001		A04DMW710DD0001	
		Sample Date	8/11/2011		8/10/2011		8/15/2011		8/18/2011	
		Purpose	Field Duplicate		Original Data		Original Data		Original Data	
AnalyticMethod	Parameter	Units	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual
8260B	1,1,1-TRICHLOROETHANE	ug/L	1	U	19		10		13	
8260B	1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	1	U
8260B	1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U
8260B	1,1-DICHLOROETHANE	ug/L	8.7		33		23		19	
8260B	1,1-DICHLOROETHENE	ug/L	37		13		9.8		10	
8260B	1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U
8260B	1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U
8260B	1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	1	U
8260B	1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U
8260B	1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U
8260B	2-HEXANONE	ug/L	5	U	5	U	5	U	5	U
8260B	ACETONE	ug/L	2	U	2	U	2	U	2	U
8260B	BENZENE	ug/L	1	U	0.13	J	1	U	1	U
8260B	BROMODICHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U
8260B	BROMOFORM	ug/L	1	U	1	U	1	U	1	U
8260B	BROMOMETHANE	ug/L	2	U	2	U	2	U	2	U
8260B	CARBON DISULFIDE	ug/L	2	U	0.18	J	2	U	2	U
8260B	CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	1	U
8260B	CHLOROBENZENE	ug/L	2	U	2	U	2	U	2	U
8260B	CHLOROETHANE	ug/L	2.6		0.13	J	1.1	J	2	U
8260B	CHLOROFORM	ug/L	0.32	J	0.49	J	1	U	1	U
8260B	CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U
8260B	DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U
8260B	ETHYLBENZENE	ug/L	1	U	1	U	1	U	1	U
8260B	METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	5	U
8260B	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	5	U
8260B	METHYLENE CHLORIDE	ug/L	0.38	J	1	U	0.51	J	1	U
8260B	STYRENE	ug/L	1	U	1	U	1	U	1	U
8260B	TETRACHLOROETHYLENE(PCE)	ug/L	1	U	0.25	J	0.21	J	1	U
8260B	TOLUENE	ug/L	0.1	J	0.32	J	1	U	1	U
8260B	TOTAL 1,2-DICHLOROETHENE	ug/L	79	D	31		20		29	
8260B	TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U
8260B	TRICHLOROETHYLENE (TCE)	ug/L	1	U	16		12		8.4	
8260B	VINYL CHLORIDE	ug/L	3.5		1.3	J	0.86	J	0.86	J
8260B	XYLENES, TOTAL	ug/L	5	U	0.47	J	5	U	5	U

Table 4-7

Groundwater Analytical Results - VOCs

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-711D		MW-711DD		MW-712DD		MW-713D	
	Field Sample ID	A04DMW711D0001		A04DMW711DD0001		A04DMW712DD0001		A04DMW713D0001	
	Sample Date	8/9/2011		8/15/2011		8/18/2011		8/4/2011	
	Purpose	Original Data		Original Data		Original Data		Original Data	
AnalyticMethod	Parameter	Units	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual
8260B	1,1,1-TRICHLOROETHANE	ug/L	0.74	J	1	U	2		1	U
8260B	1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	1	U
8260B	1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U
8260B	1,1-DICHLOROETHANE	ug/L	2.8		1	U	5.7		0.71	J
8260B	1,1-DICHLOROETHENE	ug/L	0.31	J	1	U	3.5		2.2	
8260B	1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U
8260B	1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U
8260B	1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	1	U
8260B	1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U
8260B	1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U
8260B	2-HEXANONE	ug/L	5	U	5	U	5	U	5	U
8260B	ACETONE	ug/L	12		5.4		2	U	4.2	
8260B	BENZENE	ug/L	1	U	1	U	1	U	1	U
8260B	BROMODICHLOROMETHANE	ug/L	1	U	1	U	0.41	J	1	U
8260B	BROMOFORM	ug/L	1	U	1	U	1	U	1	U
8260B	BROMOMETHANE	ug/L	2	U	2	U	2	U	2	U
8260B	CARBON DISULFIDE	ug/L	2	U	0.64	J	2	U	1	J
8260B	CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	1	U
8260B	CHLOROBENZENE	ug/L	2	U	2	U	2	U	2	U
8260B	CHLOROETHANE	ug/L	2	U	2	U	2	U	0.23	J
8260B	CHLOROFORM	ug/L	0.62	J	0.33	J	0.27	J	2.5	
8260B	CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U
8260B	DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U
8260B	ETHYLBENZENE	ug/L	1	U	1	U	1	U	0.1	J
8260B	METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	5	U
8260B	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	5	U
8260B	METHYLENE CHLORIDE	ug/L	0.69	JB	0.5	J	1	U	0.92	JB
8260B	STYRENE	ug/L	1	U	1	U	1	U	1	U
8260B	TETRACHLOROETHYLENE(PCE)	ug/L	1	U	1	U	1	U	1	U
8260B	TOLUENE	ug/L	0.12	J	0.16	J	1	U	0.18	J
8260B	TOTAL 1,2-DICHLOROETHENE	ug/L	0.77	J	2	U	14		3.4	
8260B	TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U
8260B	TRICHLOROETHYLENE (TCE)	ug/L	0.83	J	1	U	1.9		1	U
8260B	VINYL CHLORIDE	ug/L	2	U	2	U	2	U	2	U
8260B	XYLENES, TOTAL	ug/L	5	U	5	U	5	U	1	J

Table 4-7

Groundwater Analytical Results - VOCs

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	Seep-1108-01		Seep-1108-02	
			Field Sample ID	Seep-1108-01		Seep-1108-02	
			Sample Date	8/8/2011		8/8/2011	
			Purpose	Original Data		Original Data	
AnalyticMethod	Parameter	Units		Value	LabQual	Value	LabQual
8260B	1,1,1-TRICHLOROETHANE	ug/L		2.2		0.069	U
8260B	1,1,2,2-TETRACHLOROETHANE	ug/L		0.098	U	0.098	U
8260B	1,1,2-TRICHLOROETHANE	ug/L		0.15	U	0.15	U
8260B	1,1-DICHLOROETHANE	ug/L		2.5		0.068	U
8260B	1,1-DICHLOROETHENE	ug/L		0.41	J	0.083	U
8260B	1,2-DICHLOROBENZENE	ug/L		0.06	U	0.06	U
8260B	1,2-DICHLOROETHANE	ug/L		0.1	U	0.1	U
8260B	1,2-DICHLOROPROPANE	ug/L		0.097	U	0.097	U
8260B	1,3-DICHLOROBENZENE	ug/L		0.078	U	0.078	U
8260B	1,4-DICHLOROBENZENE	ug/L		0.12	U	0.12	U
8260B	2-HEXANONE	ug/L		0.22	U	0.22	U
8260B	ACETONE	ug/L		0.34	U	2.7	U
8260B	BENZENE	ug/L		0.064	U	0.064	U
8260B	BROMODICHLOROMETHANE	ug/L		0.088	U	0.088	U
8260B	BROMOFORM	ug/L		0.17	U	0.17	U
8260B	BROMOMETHANE	ug/L		0.25	U	0.25	U
8260B	CARBON DISULFIDE	ug/L		0.23	J	0.051	U
8260B	CARBON TETRACHLORIDE	ug/L		0.12	U	0.12	U
8260B	CHLOROBENZENE	ug/L		0.15	U	0.15	U
8260B	CHLOROETHANE	ug/L		0.099	U	0.099	U
8260B	CHLOROFORM	ug/L		0.1	U	0.1	U
8260B	CIS-1,3-DICHLOROPROPENE	ug/L		0.073	U	0.073	U
8260B	DIBROMOCHLOROMETHANE	ug/L		0.13	U	0.13	U
8260B	ETHYLBENZENE	ug/L		0.086	U	0.086	U
8260B	METHYL ETHYL KETONE (2-BUTANONE)	ug/L		0.52	U	0.52	U
8260B	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L		0.12	U	0.12	U
8260B	METHYLENE CHLORIDE	ug/L		0.67	JB	0.83	JB
8260B	STYRENE	ug/L		0.074	U	0.074	U
8260B	TETRACHLOROETHYLENE(PCE)	ug/L		0.18	U	0.18	U
8260B	TOLUENE	ug/L		0.072	U	0.072	U
8260B	TOTAL 1,2-DICHLOROETHENE	ug/L		1.8	J	0.15	U
8260B	TRANS-1,3-DICHLOROPROPENE	ug/L		0.083	U	0.083	U
8260B	TRICHLOROETHYLENE (TCE)	ug/L		0.9	J	0.25	U
8260B	VINYL CHLORIDE	ug/L		0.084	U	0.084	U
8260B	XYLENES, TOTAL	ug/L		0.2	U	0.2	U

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-1		MW-2		MW-2		MW-3	
			Field Sample ID	A02MW010001		A02MW020001		A02MW9005		A02MW30001	
			Sample Date	8/23/2011		8/23/2011		8/23/2011		8/22/2011	
			Purpose	Original data		Original data		Field Duplicate		Original data	
Analytic Method	Parameter	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
6010C	ALUMINUM	ug/L	Total	113	J	93.6	J	82.7	J	200	U
6010C	ALUMINUM	ug/L	Dissolved	194	J	139	J	93.3	J	200	U
6010C	ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Total	10	U	10	U	10	U	3.4	J
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	BARIUM	ug/L	Total	64.4		56.5		55.5		80.5	
6010C	BARIUM	ug/L	Dissolved	60.9		55.1		55.3		81.1	
6010C	BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U
6010C	CALCIUM	ug/L	Total	216000		91600		93700		102000	
6010C	CALCIUM	ug/L	Dissolved	206000		87400		89500		103000	
6010C	CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	5.3	J	50	U	50	U	21.1	J
6010C	COBALT	ug/L	Dissolved	4.6	J	50	U	50	U	20.6	J
6010C	COPPER	ug/L	Total	25	U	25	U	25	U	25	U
6010C	COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U
6010C	IRON	ug/L	Total	1450		100	U	100	U	5880	
6010C	IRON	ug/L	Dissolved	126		100	U	100	U	3330	
6010C	LEAD	ug/L	Total	10	U	10	U	10	U	10	U
6010C	LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	MAGNESIUM	ug/L	Total	35800		20200		20000		26100	
6010C	MAGNESIUM	ug/L	Dissolved	35500		19800		20000		26900	
6010C	MANGANESE	ug/L	Total	348		155		152		349	
6010C	MANGANESE	ug/L	Dissolved	317		151		152		348	
6010C	NICKEL	ug/L	Total	118		40	U	40	U	1000	
6010C	NICKEL	ug/L	Dissolved	107		40	U	40	U	954	
6010C	SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U
6010C	SILVER	ug/L	Total	10	U	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	445000		20800		20600		10500	E
6010C	SODIUM	ug/L	Dissolved	424000		20900		21000		10200	E
6010C	STRONTIUM	ug/L	Total	750		356		374		289	
6010C	STRONTIUM	ug/L	Dissolved	708		330		344		236	
6010C	THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	410		20	U	20	U	29.9	
6010C	ZINC	ug/L	Dissolved	348		20	U	20	U	26.4	

LabQual = Laboratory Qualifier

ug/L = micrograms per Liter

E = Matrix interference.

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-4		MW-5		MW-6		MW-7	
			Field Sample ID	A02MW40001		A02MW50001		A02MW060001		A02MW070001	
			Sample Date	8/19/2011		8/22/2011		8/12/2011		8/12/2011	
			Purpose	Original data		Original data		Original data		Original data	
Analytic Method	**Parameter**	**Units**	**Filtered**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**
6010C	ALUMINUM	ug/L	Total	200	U	200	U	200	U	200	U
6010C	ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U
6010C	ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	BARIUM	ug/L	Total	39.4	J	53.7		23.3	J	97.3	
6010C	BARIUM	ug/L	Dissolved	34.3	J	54.6		19.2	J	100	
6010C	BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U
6010C	CALCIUM	ug/L	Total	61900		96400		116000		92000	
6010C	CALCIUM	ug/L	Dissolved	66000		95200		114000		96300	
6010C	CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	50	U	5.5	J	4.4	J	7	J
6010C	COBALT	ug/L	Dissolved	50	U	5.6	J	50	U	7.1	J
6010C	COPPER	ug/L	Total	25	U	25	U	25	U	25	U
6010C	COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U
6010C	IRON	ug/L	Total	100	U	2840		53.6	J	2880	
6010C	IRON	ug/L	Dissolved	100	U	2970		100	U	1080	
6010C	LEAD	ug/L	Total	10	U	10	U	10	U	10	U
6010C	LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	MAGNESIUM	ug/L	Total	23000		21500		47200		27300	
6010C	MAGNESIUM	ug/L	Dissolved	22800		21600		46500		28600	
6010C	MANGANESE	ug/L	Total	172		288		673		387	
6010C	MANGANESE	ug/L	Dissolved	79.8		292		305		379	
6010C	NICKEL	ug/L	Total	40	U	534		259		237	
6010C	NICKEL	ug/L	Dissolved	40	U	524		223		238	
6010C	SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U
6010C	SILVER	ug/L	Total	10	U	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	25500		10800	E	16900	B	49400	B
6010C	SODIUM	ug/L	Dissolved	25400		10600	E	17400	B	49700	B
6010C	STRONTIUM	ug/L	Total	169		212		347	B	325	B
6010C	STRONTIUM	ug/L	Dissolved	207		269		338	B	340	B
6010C	THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	83.7		8.6	J	425		35.3	
6010C	ZINC	ug/L	Dissolved	73		7.8	J	382		22	

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-8		MW-9		MW-10		MW-11	
			Field Sample ID	A02MW080001		A02MW090001		A02MW100001		A02MW110001	
			Sample Date	8/8/2011		8/8/2011		8/12/2011		8/8/2011	
			Purpose	Original data		Original data		Original data		Original data	
Analytic Method	Parameter	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
6010C	ALUMINUM	ug/L	Total	200	U	94.3	J	200	U	200	U
6010C	ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U
6010C	ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	BARIUM	ug/L	Total	48.8	J	31.8	J	52		65.2	
6010C	BARIUM	ug/L	Dissolved	47	J	31.4	J	54.6		68.4	
6010C	BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U
6010C	CALCIUM	ug/L	Total	198000		85900		124000		114000	
6010C	CALCIUM	ug/L	Dissolved	191000		85400		128000		112000	
6010C	CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	50	U	50	U	13.9	J	50	U
6010C	COBALT	ug/L	Dissolved	50	U	50	U	14.6	J	50	U
6010C	COPPER	ug/L	Total	25	U	25	U	25	U	25	U
6010C	COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U
6010C	IRON	ug/L	Total	207		1730		3710		2120	
6010C	IRON	ug/L	Dissolved	140		1600		3600		2250	
6010C	LEAD	ug/L	Total	10	U	2.2	J	10	U	10	U
6010C	LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	MAGNESIUM	ug/L	Total	48600		23700		25800		34000	
6010C	MAGNESIUM	ug/L	Dissolved	47700		23800		27200		34100	
6010C	MANGANESE	ug/L	Total	245		304		955		119	
6010C	MANGANESE	ug/L	Dissolved	236		303		998		126	
6010C	NICKEL	ug/L	Total	40	U	40	U	566		40	U
6010C	NICKEL	ug/L	Dissolved	40	U	40	U	577		40	U
6010C	SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U
6010C	SILVER	ug/L	Total	10	U	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	185000	B	19300	B	7070	B	49900	B
6010C	SODIUM	ug/L	Dissolved	178000	B	19300	B	7270	B	47500	B
6010C	STRONTIUM	ug/L	Total	892		272		475	B	492	
6010C	STRONTIUM	ug/L	Dissolved	845		268		479	B	496	
6010C	THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	20	U	18.9	J	207		7.3	J
6010C	ZINC	ug/L	Dissolved	20	U	20	U	208		20	U

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-12		MW-13D		MW-14		MW-15	
			Field Sample ID	A02MW120001		A03AMW13D0001		A03MW14D0001		A03MW15D0001	
			Sample Date	8/22/2011		8/11/2011		8/16/2011		8/16/2011	
			Purpose	Original data		Original data		Original data		Original data	
Analytic Method	Parameter	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
6010C	ALUMINUM	ug/L	Total	200	U	200	U	200	U	313	
6010C	ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	121	J
6010C	ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	10	U	10	U	4	J	10	U
6010C	ARSENIC	ug/L	Total	10	U	10	U	10	U	6	J
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	BARIUM	ug/L	Total	77		61.8		152		26.8	J
6010C	BARIUM	ug/L	Dissolved	76.4		61.3		151		23	J
6010C	BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U
6010C	CALCIUM	ug/L	Total	62100		50400		39300		7090	
6010C	CALCIUM	ug/L	Dissolved	62400		50300		41900		6410	
6010C	CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	4.2	J	50	U	50	U	50	U
6010C	COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U
6010C	COPPER	ug/L	Total	25	U	25	U	25	U	7.4	J
6010C	COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U
6010C	IRON	ug/L	Total	802		80.6	J	1610		283	
6010C	IRON	ug/L	Dissolved	217		61.8	J	1260		36.3	J
6010C	LEAD	ug/L	Total	10	U	10	U	10	U	10	U
6010C	LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	MAGNESIUM	ug/L	Total	14300		17600		136000		2000	
6010C	MAGNESIUM	ug/L	Dissolved	14200		17600		144000		1290	
6010C	MANGANESE	ug/L	Total	348		183		224		3.8	J
6010C	MANGANESE	ug/L	Dissolved	344		189		223		15	U
6010C	NICKEL	ug/L	Total	246		40	U	40	U	14.7	J
6010C	NICKEL	ug/L	Dissolved	227		40	U	40	U	40	U
6010C	SELENIUM	ug/L	Total	15	U	15	U	15	U	11.2	J
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	16.2	
6010C	SILVER	ug/L	Total	10	U	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	2070	E	217000	B	98000		143000	
6010C	SODIUM	ug/L	Dissolved	1960	E	208000	B	105000		151000	
6010C	STRONTIUM	ug/L	Total	206		177	B	182		59	
6010C	STRONTIUM	ug/L	Dissolved	183		176	B	193		61.8	
6010C	THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	46.4		166		273		18.3	J
6010C	ZINC	ug/L	Dissolved	42		168		264		20	U

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-16		MW-16		MW-17		MW-18	
			Field Sample ID	A03MW16D0001		A03MW9004		A03MW17D0001		A04BMW180001	
			Sample Date	8/19/2011		8/19/2011		8/16/2011		8/5/2011	
			Purpose	Original data		Field Duplicate		Original data		Original data	
Analytic Method	Parameter	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
6010C	ALUMINUM	ug/L	Total	200	U	200	U	200	U	200	U
6010C	ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U
6010C	ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	4.1	J	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Total	10	U	10	U	3.4	J	10	U
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	BARIUM	ug/L	Total	118		119		78.8		68.3	
6010C	BARIUM	ug/L	Dissolved	116		119		80.8		67.6	
6010C	BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U
6010C	CALCIUM	ug/L	Total	58400		54900		66400		64200	
6010C	CALCIUM	ug/L	Dissolved	52800		56000		69400		63800	
6010C	CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	50	U	50	U	50	U	50	U
6010C	COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U
6010C	COPPER	ug/L	Total	25	U	25	U	25	U	25	U
6010C	COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U
6010C	IRON	ug/L	Total	1590		1590		1050		37.4	J
6010C	IRON	ug/L	Dissolved	1490		1540		293		100	U
6010C	LEAD	ug/L	Total	10	U	10	U	1.6	J	10	U
6010C	LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	MAGNESIUM	ug/L	Total	63800		62400		20300		37200	
6010C	MAGNESIUM	ug/L	Dissolved	59400		63100		20500		37400	
6010C	MANGANESE	ug/L	Total	808		811		11.2	J	396	
6010C	MANGANESE	ug/L	Dissolved	774		796		11	J	393	
6010C	NICKEL	ug/L	Total	40	U	40	U	40	U	40	U
6010C	NICKEL	ug/L	Dissolved	40	U	40	U	40	U	40	U
6010C	SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U
6010C	SILVER	ug/L	Total	10	U	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	154000		153000		301000		122000	
6010C	SODIUM	ug/L	Dissolved	147000		155000		314000		124000	B
6010C	STRONTIUM	ug/L	Total	264		162		311		187	
6010C	STRONTIUM	ug/L	Dissolved	207		202		316		193	
6010C	THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	24.3		24		17.2	J	177	
6010C	ZINC	ug/L	Dissolved	22.8		23.3		17.8	J	180	

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-19		MW-20		MW-21		MW-22	
			Field Sample ID	A04BMW190001		A04AMW200001		A04AMW210001		A04AMW220001	
			Sample Date	8/4/2011		8/18/2011		8/18/2011		8/5/2011	
			Purpose	Original data		Original data		Original data		Original data	
Analytic Method	**Parameter**	**Units**	**Filtered**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**
6010C	ALUMINUM	ug/L	Total	3150		369		93.9	J	200	U
6010C	ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U
6010C	ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	BARIUM	ug/L	Total	59.6		59.5		72		26.2	J
6010C	BARIUM	ug/L	Dissolved	43.8	J	57.4		72		36.4	J
6010C	BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	1.1	J	5	U	5	U
6010C	CALCIUM	ug/L	Total	152000		91800		80100		69700	
6010C	CALCIUM	ug/L	Dissolved	65300		91900		110000		74200	
6010C	CHROMIUM, TOTAL	ug/L	Total	8	J	10	U	10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	50	U	50	U	50	U	50	U
6010C	COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U
6010C	COPPER	ug/L	Total	12.2	J	25	U	25	U	25	U
6010C	COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U
6010C	IRON	ug/L	Total	3800		250		64.9	J	556	
6010C	IRON	ug/L	Dissolved	100	U	28.7	J	100	U	962	
6010C	LEAD	ug/L	Total	8.7	J	2.1	J	10	U	10	U
6010C	LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	MAGNESIUM	ug/L	Total	64700		20900		25500		24800	
6010C	MAGNESIUM	ug/L	Dissolved	29300		20300		36500		24800	
6010C	MANGANESE	ug/L	Total	351		22.5		4.3	J	90.9	
6010C	MANGANESE	ug/L	Dissolved	15	U	15	U	5.1	J	117	
6010C	NICKEL	ug/L	Total	19.6	J	40	U	40	U	190	
6010C	NICKEL	ug/L	Dissolved	40	U	40	U	40	U	132	
6010C	SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U
6010C	SILVER	ug/L	Total	10	U	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	63400		46500		207000		39900	
6010C	SODIUM	ug/L	Dissolved	62000		46200		223000		36000	B
6010C	STRONTIUM	ug/L	Total	409		195		177		350	
6010C	STRONTIUM	ug/L	Dissolved	326		206		608		384	
6010C	THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	4.7	J	50	U	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	70.9		265		64.9		10.7	J
6010C	ZINC	ug/L	Dissolved	20	U	251		20	U	20	U

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-23		MW-24		MW-25		MW-25	
			Field Sample ID	A04DMW230001		A04DMW240001		A04BMW250001		A04BMW9003	
			Sample Date	8/4/2011		8/4/2011		8/12/2011		8/12/2011	
			Purpose	Original data		Original data		Original data		Field Duplicate	
Analytic Method	**Parameter**	**Units**	**Filtered**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**
6010C	ALUMINUM	ug/L	Total	200	U	200	U	200	U	200	U
6010C	ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U
6010C	ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	BARIUM	ug/L	Total	58.8		67.9		109		110	
6010C	BARIUM	ug/L	Dissolved	54.5		67.3		108		105	
6010C	BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	5	U	5	U	1.7	J	1.6	J
6010C	CADMIUM	ug/L	Dissolved	5	U	5	U	1.5	J	1.5	J
6010C	CALCIUM	ug/L	Total	88200		104000		146000		145000	
6010C	CALCIUM	ug/L	Dissolved	92800		110000		146000		143000	
6010C	CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	50	U	50	U	50	U	50	U
6010C	COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U
6010C	COPPER	ug/L	Total	25	U	25	U	25	U	25	U
6010C	COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U
6010C	IRON	ug/L	Total	928		767		61.6	J	54.3	J
6010C	IRON	ug/L	Dissolved	679		612		72.9	J	58.6	J
6010C	LEAD	ug/L	Total	10	U	10	U	10	U	10	U
6010C	LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	MAGNESIUM	ug/L	Total	22400		31700		47800		47100	
6010C	MAGNESIUM	ug/L	Dissolved	21800		32500		48300		47300	
6010C	MANGANESE	ug/L	Total	804		110		863		856	
6010C	MANGANESE	ug/L	Dissolved	728		104		865		846	
6010C	NICKEL	ug/L	Total	20.6	J	15.8	J	103		103	
6010C	NICKEL	ug/L	Dissolved	22.1	J	14.6	J	103		101	
6010C	SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U
6010C	SILVER	ug/L	Total	10	U	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	19300		77600		888000	B	885000	B
6010C	SODIUM	ug/L	Dissolved	18100		71300		836000	B	854000	B
6010C	STRONTIUM	ug/L	Total	341		495		892	B	892	B
6010C	STRONTIUM	ug/L	Dissolved	364		522		868	B	841	B
6010C	THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	117		13.9	J	192		193	
6010C	ZINC	ug/L	Dissolved	104		11.3	J	196		190	

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-26		MW-600D		MW-601D	
			Field Sample ID	A04BMW260001		A02MW600D0001		A04AMW610D0001	
			Sample Date	8/10/2011		8/22/2011		8/18/2011	
			Purpose	Original data		Original data		Original data	
Analytic Method	Parameter	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual
6010C	ALUMINUM	ug/L	Total	200	U	200	U	432	
6010C	ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U
6010C	ANTIMONY	ug/L	Total	10	U	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Total	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	10	U
6010C	BARIUM	ug/L	Total	54.5		192		17.6	J
6010C	BARIUM	ug/L	Dissolved	59.1		197		19.1	J
6010C	BERYLLIUM	ug/L	Total	5	U	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	5	U	1.2	J	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	1.2	J	5	U
6010C	CALCIUM	ug/L	Total	83000		380000		101000	
6010C	CALCIUM	ug/L	Dissolved	85500		369000		84600	
6010C	CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	5.8	J
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	50	U	50	U	50	U
6010C	COBALT	ug/L	Dissolved	50	U	50	U	50	U
6010C	COPPER	ug/L	Total	25	U	25	U	25	U
6010C	COPPER	ug/L	Dissolved	25	U	25	U	25	U
6010C	IRON	ug/L	Total	166		648		530	
6010C	IRON	ug/L	Dissolved	52.9	J	322		74.7	J
6010C	LEAD	ug/L	Total	10	U	16.4		5.5	J
6010C	LEAD	ug/L	Dissolved	10	U	1.5	J	10	U
6010C	MAGNESIUM	ug/L	Total	22100		152000		38900	
6010C	MAGNESIUM	ug/L	Dissolved	23000		149000		32000	
6010C	MANGANESE	ug/L	Total	145		353		132	
6010C	MANGANESE	ug/L	Dissolved	115		353		76.3	
6010C	NICKEL	ug/L	Total	40	U	40	U	40	U
6010C	NICKEL	ug/L	Dissolved	40	U	40	U	40	U
6010C	SELENIUM	ug/L	Total	15	U	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U	15	U
6010C	SILVER	ug/L	Total	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	325000	B	1830000	E	125000	
6010C	SODIUM	ug/L	Dissolved	321000	B	1840000	E	119000	
6010C	STRONTIUM	ug/L	Total	373		1280		559	
6010C	STRONTIUM	ug/L	Dissolved	382		1340		488	
6010C	THALLIUM	ug/L	Total	20	U	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	50	U	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	59.4		614		39.2	
6010C	ZINC	ug/L	Dissolved	57.5		611		14.8	J

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-602D		MW-603D		MW-604D	
			Field Sample ID	A04MW602D0001		A04AMW603D0001		A04MW604D0001	
			Sample Date	8/11/2011		8/5/2011		8/10/2011	
			Purpose	Original data		Original data		Original data	
Analytic Method	Parameter	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual
6010C	ALUMINUM	ug/L	Total	791		200		725	
6010C	ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U
6010C	ANTIMONY	ug/L	Total	10	U	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	6.3	J	10	U	10	U
6010C	ARSENIC	ug/L	Total	10	U	12.9		10	U
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	10	U
6010C	BARIUM	ug/L	Total	29.2	J	73.6		78.7	
6010C	BARIUM	ug/L	Dissolved	26	J	30.7	J	74.3	
6010C	BERYLLIUM	ug/L	Total	5	U	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	5	U	3.8	J	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	5	U	5	U
6010C	CALCIUM	ug/L	Total	107000		125000		106000	
6010C	CALCIUM	ug/L	Dissolved	86100		129000		98600	
6010C	CHROMIUM, TOTAL	ug/L	Total	10	U	11.3		10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	50	U	50	U	50	U
6010C	COBALT	ug/L	Dissolved	50	U	50	U	50	U
6010C	COPPER	ug/L	Total	25	U	5.2	J	25	U
6010C	COPPER	ug/L	Dissolved	25	U	25	U	25	U
6010C	IRON	ug/L	Total	861		50700		552	
6010C	IRON	ug/L	Dissolved	57.5	J	932		100	U
6010C	LEAD	ug/L	Total	10	U	10	U	2.5	J
6010C	LEAD	ug/L	Dissolved	10	U	10	U	10	U
6010C	MAGNESIUM	ug/L	Total	46200		47900		28400	
6010C	MAGNESIUM	ug/L	Dissolved	39500		46500		25800	
6010C	MANGANESE	ug/L	Total	100		207		114	
6010C	MANGANESE	ug/L	Dissolved	8.4	J	125		33.6	
6010C	NICKEL	ug/L	Total	40	U	108		40	U
6010C	NICKEL	ug/L	Dissolved	40	U	70.8		40	U
6010C	SELENIUM	ug/L	Total	15	U	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U	15	U
6010C	SILVER	ug/L	Total	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	79100	B	30600		307000	B
6010C	SODIUM	ug/L	Dissolved	76300	B	30900		296000	B
6010C	STRONTIUM	ug/L	Total	504	B	478		419	
6010C	STRONTIUM	ug/L	Dissolved	500	B	478		413	
6010C	THALLIUM	ug/L	Total	20	U	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	50	U	9.8	J	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	38.9		996		170	
6010C	ZINC	ug/L	Dissolved	20.5		134		118	

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-605D		MW-605D		MW-606D		MW-606DR	
			Field Sample ID	A04BMW605D0001		A04BMW9000		A03MW606D0001		A03MW606DR0001	
			Sample Date	8/10/2011		8/10/2011		8/16/2011		8/15/2011	
			Purpose	Original data		Field Duplicate		Original data		Original data	
Analytic Method	Parameter	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
6010C	ALUMINUM	ug/L	Total	937		1620		200	U	200	U
6010C	ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U
6010C	ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	BARIUM	ug/L	Total	53		57.7		158		74.4	
6010C	BARIUM	ug/L	Dissolved	46.5	J	45.6	J	155		75.4	
6010C	BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U
6010C	CALCIUM	ug/L	Total	85700		94900		45300		134000	
6010C	CALCIUM	ug/L	Dissolved	68100		67200		44300		138000	
6010C	CHROMIUM, TOTAL	ug/L	Total	10	U	3.2	J	10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	50	U	50	U	50	U	50	U
6010C	COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U
6010C	COPPER	ug/L	Total	25	U	6.4	J	25	U	25	U
6010C	COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U
6010C	IRON	ug/L	Total	957		1570		1570		727	
6010C	IRON	ug/L	Dissolved	132		121		1420		584	
6010C	LEAD	ug/L	Total	5	J	8.6	J	10	U	10	U
6010C	LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	MAGNESIUM	ug/L	Total	40800		44700		135000		83000	
6010C	MAGNESIUM	ug/L	Dissolved	34300		34000		135000		84300	
6010C	MANGANESE	ug/L	Total	413		489		177		170	
6010C	MANGANESE	ug/L	Dissolved	278		278		176		163	
6010C	NICKEL	ug/L	Total	24.6	J	28.6	J	40	U	40	U
6010C	NICKEL	ug/L	Dissolved	19.3	J	19.8	J	40	U	40	U
6010C	SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U
6010C	SILVER	ug/L	Total	10	U	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	62200	B	60100	B	109000		197000	
6010C	SODIUM	ug/L	Dissolved	60100	B	62400	B	109000		200000	
6010C	STRONTIUM	ug/L	Total	190		188		240		1740	
6010C	STRONTIUM	ug/L	Dissolved	178		180		213		1830	
6010C	THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	73.1		109		269		61	
6010C	ZINC	ug/L	Dissolved	22.5		21.2		184		13.3	J

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-607D		MW-701DD		MW-702DD	
			Field Sample ID	A03MW607D0001		A04AMW701DD0001		A04MW702DD0001	
			Sample Date	8/19/2011		8/19/2011		8/11/2011	
			Purpose	Original data		Original data		Original data	
Analytic Method	Parameter	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual
6010C	ALUMINUM	ug/L	Total	15200		236		200	U
6010C	ALUMINUM	ug/L	Dissolved	2580		80.8		200	U
6010C	ANTIMONY	ug/L	Total	5.8	J	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	4.4	J	10	U	10	U
6010C	ARSENIC	ug/L	Total	9.2	J	10	U	10	U
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	2.7	J
6010C	BARIUM	ug/L	Total	132		26.1	J	10.9	J
6010C	BARIUM	ug/L	Dissolved	64.1		23.1	J	11.4	J
6010C	BERYLLIUM	ug/L	Total	0.67	J	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	1	J	5	U	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	5	U	5	U
6010C	CALCIUM	ug/L	Total	719000		141000		468000	
6010C	CALCIUM	ug/L	Dissolved	159000		141000		473000	
6010C	CHROMIUM, TOTAL	ug/L	Total	17.1		10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	6.5	J	50	U	50	U
6010C	COBALT	ug/L	Dissolved	50	U	50	U	50	U
6010C	COPPER	ug/L	Total	21.6	J	25	U	25	U
6010C	COPPER	ug/L	Dissolved	25	U	25	U	25	U
6010C	IRON	ug/L	Total	16200		275		28.4	J
6010C	IRON	ug/L	Dissolved	2440		75.2	J	100	U
6010C	LEAD	ug/L	Total	41.8		10	U	10	U
6010C	LEAD	ug/L	Dissolved	6	J	10	U	10	U
6010C	MAGNESIUM	ug/L	Total	211000		60700		181000	
6010C	MAGNESIUM	ug/L	Dissolved	101000		58100		171000	
6010C	MANGANESE	ug/L	Total	2380		20.6		54.2	
6010C	MANGANESE	ug/L	Dissolved	561		12.5	J	52.4	
6010C	NICKEL	ug/L	Total	19.3	J	40	U	40	U
6010C	NICKEL	ug/L	Dissolved	40	U	40	U	40	U
6010C	SELENIUM	ug/L	Total	15	U	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U	15	U
6010C	SILVER	ug/L	Total	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	61600		254000		204000	B
6010C	SODIUM	ug/L	Dissolved	60200		252000		176000	B
6010C	STRONTIUM	ug/L	Total	830		2650		9620	B
6010C	STRONTIUM	ug/L	Dissolved	412		2590		9540	B
6010C	THALLIUM	ug/L	Total	20	U	20	U	4.4	J
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	15.3	J	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	305		20	U	13.1	J
6010C	ZINC	ug/L	Dissolved	47.7		7.1	J	20	U

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-703DD		MW-704DD		MW-704DD	
			Field Sample ID	A03MW703DD0001		A04BMW9001		A04DMW704DD0001	
			Sample Date	8/19/2011		8/10/2011		8/10/2011	
			Purpose	Original data		Field Duplicate		Original data	
Analytic Method	Parameter	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual
6010C	ALUMINUM	ug/L	Total	2010		200	U	200	U
6010C	ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U
6010C	ANTIMONY	ug/L	Total	50	U	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	50	U	10	U	10	U
6010C	ARSENIC	ug/L	Total	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	10	U
6010C	BARIUM	ug/L	Total	55		55.7		56.9	
6010C	BARIUM	ug/L	Dissolved	45.7	J	55.4		55.8	
6010C	BERYLLIUM	ug/L	Total	5	U	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	5	U	5	U
6010C	CALCIUM	ug/L	Total	382000		271000		274000	
6010C	CALCIUM	ug/L	Dissolved	265000		273000		275000	
6010C	CHROMIUM, TOTAL	ug/L	Total	11.5		10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	50	U	50	U	50	U
6010C	COBALT	ug/L	Dissolved	50	U	50	U	50	U
6010C	COPPER	ug/L	Total	11.4	J	25	U	25	U
6010C	COPPER	ug/L	Dissolved	25	U	25	U	25	U
6010C	IRON	ug/L	Total	4210		100	U	30.2	J
6010C	IRON	ug/L	Dissolved	521		100	U	100	U
6010C	LEAD	ug/L	Total	10.8		10	U	10	U
6010C	LEAD	ug/L	Dissolved	10	U	10	U	10	U
6010C	MAGNESIUM	ug/L	Total	110000		106000		106000	
6010C	MAGNESIUM	ug/L	Dissolved	76000		107000		107000	
6010C	MANGANESE	ug/L	Total	462		65.5		69.4	
6010C	MANGANESE	ug/L	Dissolved	18.7		68.8		66.7	
6010C	NICKEL	ug/L	Total	40	U	40	U	40	U
6010C	NICKEL	ug/L	Dissolved	40	U	40	U	40	U
6010C	SELENIUM	ug/L	Total	75	U	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	75	U	15	U	15	U
6010C	SILVER	ug/L	Total	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	191000		107000	B	105000	B
6010C	SODIUM	ug/L	Dissolved	187000		109000	B	112000	B
6010C	STRONTIUM	ug/L	Total	15200		4840		4990	
6010C	STRONTIUM	ug/L	Dissolved	15300		4730		4890	
6010C	THALLIUM	ug/L	Total	20	U	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	50	U	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	41.9		20	U	20	U
6010C	ZINC	ug/L	Dissolved	20	U	20	U	20	U

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-705D		MW-705DD		MW-706DD	
			Field Sample ID	MW705D0001		MW705DD0001		A04BMW706D0001	
			Sample Date	8/9/2011		8/9/2011		8/15/2011	
			Purpose	Original data		Original data		Original data	
Analytic Method	Parameter	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual
6010C	ALUMINUM	ug/L	Total	80.3	J	200	U	126	J
6010C	ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U
6010C	ANTIMONY	ug/L	Total	10	U	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Total	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	10	U
6010C	BARIUM	ug/L	Total	25.8	J	24.7	J	16	J
6010C	BARIUM	ug/L	Dissolved	26.9	J	23.9	J	15.4	J
6010C	BERYLLIUM	ug/L	Total	5	U	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	5	U	5	U
6010C	CALCIUM	ug/L	Total	125000		531000		520000	
6010C	CALCIUM	ug/L	Dissolved	94200		372000		560000	
6010C	CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	50	U	50	U	50	U
6010C	COBALT	ug/L	Dissolved	50	U	50	U	50	U
6010C	COPPER	ug/L	Total	25	U	25	U	25	U
6010C	COPPER	ug/L	Dissolved	25	U	25	U	25	U
6010C	IRON	ug/L	Total	48.2	J	36.1	J	393	
6010C	IRON	ug/L	Dissolved	100	U	100	U	340	
6010C	LEAD	ug/L	Total	10	U	10	U	10	U
6010C	LEAD	ug/L	Dissolved	10	U	10	U	10	U
6010C	MAGNESIUM	ug/L	Total	31000		287000		112000	
6010C	MAGNESIUM	ug/L	Dissolved	35200		234000		127000	
6010C	MANGANESE	ug/L	Total	9.5	J	14.5	J	105	
6010C	MANGANESE	ug/L	Dissolved	20.6		15	U	102	
6010C	NICKEL	ug/L	Total	40	U	40	U	40	U
6010C	NICKEL	ug/L	Dissolved	40	U	40	U	40	U
6010C	SELENIUM	ug/L	Total	15	U	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U	15	U
6010C	SILVER	ug/L	Total	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	174000		983000		166000	
6010C	SODIUM	ug/L	Dissolved	194000		449000		170000	
6010C	STRONTIUM	ug/L	Total	1680		13500		7350	
6010C	STRONTIUM	ug/L	Dissolved	1310		8860		7700	
6010C	THALLIUM	ug/L	Total	20	U	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	50	U	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	20	U	20	U	20	U
6010C	ZINC	ug/L	Dissolved	20	U	20	U	20	U

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-707DD		MW-708DD		MW-708DD	
			Field Sample ID	A04BMW707DD0001		A04DMW708DD0001		A04DMW9002	
			Sample Date	8/18/2011		8/11/2011		8/11/2011	
			Purpose	Original data		Original data		Field Duplicate	
Analytic Method	Parameter	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual
6010C	ALUMINUM	ug/L	Total	2320		89.5	J	151	J
6010C	ALUMINUM	ug/L	Dissolved	840		200	U	200	U
6010C	ANTIMONY	ug/L	Total	12.5		10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	8	J	10	U	10	U
6010C	ARSENIC	ug/L	Total	2.6	J	10	U	10	U
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	10	U
6010C	BARIUM	ug/L	Total	183		12.4	J	13.3	J
6010C	BARIUM	ug/L	Dissolved	172		11.6	J	11.6	J
6010C	BERYLLIUM	ug/L	Total	0.99	J	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	5	U	5	U
6010C	CALCIUM	ug/L	Total	1200000	E	178000		187000	
6010C	CALCIUM	ug/L	Dissolved	1260000	E	182000		177000	
6010C	CHROMIUM, TOTAL	ug/L	Total	4.2	J	10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	9.2	J	50	U	50	U
6010C	COBALT	ug/L	Dissolved	7.3	J	50	U	50	U
6010C	COPPER	ug/L	Total	14.4	J	25	U	25	U
6010C	COPPER	ug/L	Dissolved	25	U	25	U	25	U
6010C	IRON	ug/L	Total	3710		234		268	
6010C	IRON	ug/L	Dissolved	1400		144		147	
6010C	LEAD	ug/L	Total	2	J	10	U	10	U
6010C	LEAD	ug/L	Dissolved	10	U	10	U	10	U
6010C	MAGNESIUM	ug/L	Total	544000		52200		55600	
6010C	MAGNESIUM	ug/L	Dissolved	586000		51000		49400	
6010C	MANGANESE	ug/L	Total	862		19.4		21.4	
6010C	MANGANESE	ug/L	Dissolved	489		11	J	10.2	J
6010C	NICKEL	ug/L	Total	40	U	40	U	40	U
6010C	NICKEL	ug/L	Dissolved	40	U	40	U	40	U
6010C	SELENIUM	ug/L	Total	11.2	J	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U	15	U
6010C	SILVER	ug/L	Total	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	3700000		113000	B	115000	B
6010C	SODIUM	ug/L	Dissolved	4180000		114000	B	113000	B
6010C	STRONTIUM	ug/L	Total	19000	E	1890	B	1980	B
6010C	STRONTIUM	ug/L	Dissolved	21700	E	1970	B	1940	B
6010C	THALLIUM	ug/L	Total	20	U	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	4.5	J	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	47.3		20	U	20	U
6010C	ZINC	ug/L	Dissolved	19.6	J	20	U	20	U

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-709DD		MW-710D		MW-710DD	
			Field Sample ID	A04DMW709DD0001		A04DMW710D0001		A04DMW710DD0001	
			Sample Date	8/10/2011		8/15/2011		8/18/2011	
			Purpose	Original data		Original data		Original data	
Analytic Method	Parameter	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual
6010C	ALUMINUM	ug/L	Total	102	J	200	U	346	
6010C	ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U
6010C	ANTIMONY	ug/L	Total	10	U	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Total	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	10	U
6010C	BARIUM	ug/L	Total	73.4		30.6	J	51.9	
6010C	BARIUM	ug/L	Dissolved	68.5		47.6	J	51	
6010C	BERYLLIUM	ug/L	Total	5	U	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	5	U	5	U
6010C	CALCIUM	ug/L	Total	125000		117000		195000	
6010C	CALCIUM	ug/L	Dissolved	121000		113000		203000	
6010C	CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	50	U	50	U	50	U
6010C	COBALT	ug/L	Dissolved	50	U	50	U	50	U
6010C	COPPER	ug/L	Total	25	U	25	U	25	U
6010C	COPPER	ug/L	Dissolved	25	U	25	U	25	U
6010C	IRON	ug/L	Total	239		94	J	300	
6010C	IRON	ug/L	Dissolved	127		150		167	
6010C	LEAD	ug/L	Total	10	U	10	U	10	U
6010C	LEAD	ug/L	Dissolved	10	U	10	U	10	U
6010C	MAGNESIUM	ug/L	Total	38500		32100		34000	
6010C	MAGNESIUM	ug/L	Dissolved	37800		31400		34100	
6010C	MANGANESE	ug/L	Total	35.7		25.2		29.4	
6010C	MANGANESE	ug/L	Dissolved	25.6		26.4		26	
6010C	NICKEL	ug/L	Total	40	U	40	U	40	U
6010C	NICKEL	ug/L	Dissolved	40	U	40	U	40	U
6010C	SELENIUM	ug/L	Total	15	U	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U	15	U
6010C	SILVER	ug/L	Total	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	203000	B	214000		198000	
6010C	SODIUM	ug/L	Dissolved	203000	B	205000		214000	
6010C	STRONTIUM	ug/L	Total	1270		615		1120	
6010C	STRONTIUM	ug/L	Dissolved	1240		584		1130	
6010C	THALLIUM	ug/L	Total	4.4	J	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	50	U	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	20	U	20	U	11.3	J
6010C	ZINC	ug/L	Dissolved	20	U	20	U	12.4	J

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-711D		MW-711DD		MW-712DD	
			Field Sample ID	A04DMW711D0001		A04DMW711DD0001		A04DMW712DD0001	
			Sample Date	8/9/2011		8/15/2011		8/18/2011	
			Purpose	Original data		Original data		Original data	
Analytic Method	Parameter	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual
6010C	ALUMINUM	ug/L	Total	200	U	200	U	110	J
6010C	ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U
6010C	ANTIMONY	ug/L	Total	10	U	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Total	10	U	10	U	10	U
6010C	ARSENIC	ug/L	Dissolved	10	U	10	U	10	U
6010C	BARIUM	ug/L	Total	53.3		39.4	J	62.4	
6010C	BARIUM	ug/L	Dissolved	56		32	J	60.8	
6010C	BERYLLIUM	ug/L	Total	5	U	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Total	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	5	U	5	U
6010C	CALCIUM	ug/L	Total	120000		455000		169000	
6010C	CALCIUM	ug/L	Dissolved	118000		483000		166000	
6010C	CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U
6010C	COBALT	ug/L	Total	50	U	50	U	50	U
6010C	COBALT	ug/L	Dissolved	50	U	50	U	50	U
6010C	COPPER	ug/L	Total	121		7.6	J	25	U
6010C	COPPER	ug/L	Dissolved	104		25	U	25	U
6010C	IRON	ug/L	Total	93.2	J	81	J	145	
6010C	IRON	ug/L	Dissolved	33.8	J	100	U	43.8	J
6010C	LEAD	ug/L	Total	10	U	10	U	10	U
6010C	LEAD	ug/L	Dissolved	10	U	10	U	10	U
6010C	MAGNESIUM	ug/L	Total	39100		225000		47600	
6010C	MAGNESIUM	ug/L	Dissolved	38900		238000		47800	
6010C	MANGANESE	ug/L	Total	55.7		11.7	J	15.3	
6010C	MANGANESE	ug/L	Dissolved	59.6		6.2	J	9.7	J
6010C	NICKEL	ug/L	Total	40	U	40	U	40	U
6010C	NICKEL	ug/L	Dissolved	40	U	40	U	40	U
6010C	SELENIUM	ug/L	Total	15	U	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U	15	U
6010C	SILVER	ug/L	Total	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U	10	U
6010C	SODIUM	ug/L	Total	165000		673000		279000	
6010C	SODIUM	ug/L	Dissolved	164000		733000		276000	
6010C	STRONTIUM	ug/L	Total	615		7690		887	
6010C	STRONTIUM	ug/L	Dissolved	572		8640		878	
6010C	THALLIUM	ug/L	Total	20	U	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U	20	U
6010C	VANADIUM	ug/L	Total	50	U	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U	50	U
6010C	ZINC	ug/L	Total	20	U	20	U	84.4	
6010C	ZINC	ug/L	Dissolved	20	U	20	U	79.3	

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-713D		Seep-1108-01		Seep-1108-01	
			Field Sample ID	A04DMW713D0001		Seep-1108-01		Seep-1108-01	
			Sample Date	8/4/2011		8/8/2011		8/8/2011	
			Purpose	Original data		Original data		Field Duplicate	
Analytic Method	Parameter	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual
6010C	ALUMINUM	ug/L	Total	280		200	U	200	U
6010C	ALUMINUM	ug/L	Dissolved	200	U	200	U		
6010C	ANTIMONY	ug/L	Total	10	U	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved	10	U	10	U		
6010C	ARSENIC	ug/L	Total	14.2		10	U	10	U
6010C	ARSENIC	ug/L	Dissolved	9.3	J	10	U		
6010C	BARIUM	ug/L	Total	217		53.7		53	
6010C	BARIUM	ug/L	Dissolved	221		10	U		
6010C	BERYLLIUM	ug/L	Total	5	U	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved	5	U	5	U		
6010C	CADMIUM	ug/L	Total	5	U	5	U	5	U
6010C	CADMIUM	ug/L	Dissolved	5	U	5	U		
6010C	CALCIUM	ug/L	Total	146000		106000		104000	
6010C	CALCIUM	ug/L	Dissolved	141000		104000			
6010C	CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U		
6010C	COBALT	ug/L	Total	50	U	50	U	50	U
6010C	COBALT	ug/L	Dissolved	50	U	50	U		
6010C	COPPER	ug/L	Total	25	U	25	U	25	U
6010C	COPPER	ug/L	Dissolved	25	U	25	U		
6010C	IRON	ug/L	Total	583		109		100	U
6010C	IRON	ug/L	Dissolved	259		100	U		
6010C	LEAD	ug/L	Total	10	U	10	U	10	U
6010C	LEAD	ug/L	Dissolved	10	U	10	U		
6010C	MAGNESIUM	ug/L	Total	60900		29400		29800	
6010C	MAGNESIUM	ug/L	Dissolved	59200		29800			
6010C	MANGANESE	ug/L	Total	134		4.2	J	15	U
6010C	MANGANESE	ug/L	Dissolved	113		15	U		
6010C	NICKEL	ug/L	Total	40	U	40	U	40	U
6010C	NICKEL	ug/L	Dissolved	40	U	40	U		
6010C	SELENIUM	ug/L	Total	15	U	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved	15	U	15	U		
6010C	SILVER	ug/L	Total	10	U	10	U	10	U
6010C	SILVER	ug/L	Dissolved	10	U	10	U		
6010C	SODIUM	ug/L	Total	74700		195000	B	192000	U
6010C	SODIUM	ug/L	Dissolved	73000		192000	B		
6010C	STRONTIUM	ug/L	Total	1300		372		370	
6010C	STRONTIUM	ug/L	Dissolved	1270		370			
6010C	THALLIUM	ug/L	Total	20	U	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved	20	U	20	U		
6010C	VANADIUM	ug/L	Total	50	U	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved	50	U	50	U		
6010C	ZINC	ug/L	Total	8.8	J	73.4		65.5	
6010C	ZINC	ug/L	Dissolved	20	U	65.5			

Table 4-8

Groundwater Analytical Results - Metals (Unfiltered and Filtered)

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	Seep-1108-02		Seep-1108-02	
			Field Sample ID	Seep-1108-02		Seep-1108-02	
			Sample Date	8/8/2011		8/8/2011	
			Purpose	Field Duplicate		Original data	
Analytic Method	**Parameter**	**Units**	**Filtered**	**Result**	**LabQual**	**Result**	**LabQual**
6010C	ALUMINUM	ug/L	Total	200	U	200	U
6010C	ALUMINUM	ug/L	Dissolved			200	U
6010C	ANTIMONY	ug/L	Total	10	U	10	U
6010C	ANTIMONY	ug/L	Dissolved			10	U
6010C	ARSENIC	ug/L	Total	10	U	10	U
6010C	ARSENIC	ug/L	Dissolved			10	U
6010C	BARIUM	ug/L	Total	67.4		68.1	
6010C	BARIUM	ug/L	Dissolved			67.4	U
6010C	BERYLLIUM	ug/L	Total	5	U	5	U
6010C	BERYLLIUM	ug/L	Dissolved			5	U
6010C	CADMIUM	ug/L	Total	5	U	5	U
6010C	CADMIUM	ug/L	Dissolved			5	U
6010C	CALCIUM	ug/L	Total	124000		113000	
6010C	CALCIUM	ug/L	Dissolved			124000	
6010C	CHROMIUM, TOTAL	ug/L	Total	10	U	10	U
6010C	CHROMIUM, TOTAL	ug/L	Dissolved			10	U
6010C	COBALT	ug/L	Total	50	U	50	U
6010C	COBALT	ug/L	Dissolved			50	U
6010C	COPPER	ug/L	Total	220	U	226	U
6010C	COPPER	ug/L	Dissolved			50	U
6010C	IRON	ug/L	Total	100	U	100	U
6010C	IRON	ug/L	Dissolved			100	U
6010C	LEAD	ug/L	Total	10	U	10	U
6010C	LEAD	ug/L	Dissolved			10	U
6010C	MAGNESIUM	ug/L	Total	30700		30800	
6010C	MAGNESIUM	ug/L	Dissolved			30700	
6010C	MANGANESE	ug/L	Total	13.7	J	16.5	U
6010C	MANGANESE	ug/L	Dissolved			13.7	J
6010C	NICKEL	ug/L	Total	40	U	40	U
6010C	NICKEL	ug/L	Dissolved			40	U
6010C	SELENIUM	ug/L	Total	15	U	15	U
6010C	SELENIUM	ug/L	Dissolved			15	U
6010C	SILVER	ug/L	Total	10	U	10	U
6010C	SILVER	ug/L	Dissolved			10	U
6010C	SODIUM	ug/L	Total	197000	B	180000	B
6010C	SODIUM	ug/L	Dissolved			197000	B
6010C	STRONTIUM	ug/L	Total	542		485	
6010C	STRONTIUM	ug/L	Dissolved			542	
6010C	THALLIUM	ug/L	Total	20	U	20	U
6010C	THALLIUM	ug/L	Dissolved			20	U
6010C	VANADIUM	ug/L	Total	50	U	50	U
6010C	VANADIUM	ug/L	Dissolved			50	U
6010C	ZINC	ug/L	Total	38.9		45.4	
6010C	ZINC	ug/L	Dissolved			65.5	

Table 4-9

Anions

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-1		MW-2		MW-2		MW-3		MW-4		MW-5	
	Field Sample ID	A02MW010001		A02MW020001		A02MW9005		A02MW30001		A02MW40001		A02MW50001	
	Sample Date	8/23/2011		8/23/2011		8/23/2011		8/22/2011		8/19/2011		8/22/2011	
	Purpose	Original Data		Original Data		Field Duplicate		Original Data		Original Data		Original Data	
Analytic Method	**Parameter**	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	1540		342		344		410		352		400	
E300	CHLORIDE (AS CL)	mg/L	495		24.4		24.8		11.1		43.3		16.6	
E300	FLUORIDE	mg/L	0.77		1.2		1.2		4.4		1.2		2.9	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.038		0.01	B	0.19		0.02	U	0.14		0.02	U
E300	NITROGEN, NITRITE	mg/L	4	U	0.2	U	0.2	U	0.1	U	0.1	U	0.1	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L	192		36.6		35.6		41.6		44.4	J	73.2	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	346		229		229		325		202		254	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 4-9

Anions

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name		MW-6		MW-7		MW-8		MW-9		MW-10		MW-11	
	Field Sample ID		A02MW060001		A02MW070001		A02MW080001		A02MW090001		A02MW100001		A02MW110001	
	Sample Date		8/12/2011		8/12/2011		8/8/2011		8/8/2011		8/12/2011		8/8/2011	
	Purpose		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	641		495		1260		398		529		626	
E300	CHLORIDE (AS CL)	mg/L	31.2		45.8		296		22.9		25.6		101	
E300	FLUORIDE	mg/L	2.9		2.3		0.75		1.9		1.4		0.69	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.056		0.013	B	0.02	U	0.02	U	0.03		0.02	U
E300	NITROGEN, NITRITE	mg/L	0.04	U	0.04	U	0.2	U	0.02	U	0.04	U	0.2	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L	115		82.2		197		54.7		90.2		61.4	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	358		301		328		247		316		332	

Table 4-9

Anions

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name		MW-12		MW-13D		MW-14		MW-15		MW-16	
	Field Sample ID		A02MW120001		A03AMW13D0001		A03MW14D0001		A03MW15D0001		A03MW16D0001	
	Sample Date		8/22/2011		8/11/2011		8/16/2011		8/16/2011		8/19/2011	
	Purpose		Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual	Value	LabQual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	233		719		833		405		744	
E300	CHLORIDE (AS CL)	mg/L	1.8		135		60.1		79.9		96	
E300	FLUORIDE	mg/L	1.5		3.6		15.6		13.6		7.1	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.017	B	0.0084	B	0.046		0.02	U	0.0064	B
E300	NITROGEN, NITRITE	mg/L	0.02	U	0.1	U	0.2	U	0.2	U	0.1	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L	21.1		41.3		33.1		39.6		53.5	J
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	196		396		698		129		512	

Table 4-9

Anions

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-16		MW-17		MW-18		MW-19		MW-20	
	Field Sample ID	A03MW9004		A03MW17D0001		A04BMW180001		A04BMW190001		A04AMW200001	
	Sample Date	8/19/2011		8/16/2011		8/5/2011		8/4/2011		8/18/2011	
	Purpose	Field Duplicate		Original Data		Original Data		Original Data		Original Data	
Analytic Method	**Parameter**	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	747		975		619		500		461	
E300	CHLORIDE (AS CL)	mg/L	95.4		251		89.9		72.5		66.1	
E300	FLUORIDE	mg/L	7.1		0.19		2.6		1.4		0.58	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.1		0.1		0.0076	B	0.89		4.1	
E300	NITROGEN, NITRITE	mg/L	0.1	U	0.2	U	0.1	U	0.034	B	0.1	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L	53.5	J	69.1		47.8		95		25.7	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	503		410		381		400		270	

Table 4-9

Anions

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-21		MW-22		MW-23		MW-24		MW-25	
	Field Sample ID	A04AMW210001		A04AMW220001		A04DMW230001		A04DMW240001		A04BMW250001	
	Sample Date	8/18/2011		8/5/2011		8/4/2011		8/4/2011		8/12/2011	
	Purpose	Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	**Parameter**	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	913		387		411		633		3170	
E300	CHLORIDE (AS CL)	mg/L	231		34.4		23.1		116		1490	
E300	FLUORIDE	mg/L	0.24		1.5		0.92		0.89		2.1	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.091		0.099		0.082		0.02	U	0.09	
E300	NITROGEN, NITRITE	mg/L	0.2	U	0.02	U	0.02	U	0.04	U	1	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.066	BJ	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L	88.1		40.7		52.4		99.1		82.9	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	377		252		252		248		255	

Table 4-9

Anions

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-25		MW-26		MW-600D		MW-601D		MW-602D	
	Field Sample ID	A04BMW9003		A04BMW260001		A02MW600D0001		A04AMW610D0001		A04MW602D0001	
	Sample Date	8/12/2011		8/10/2011		8/22/2011		8/18/2011		8/11/2011	
	Purpose	Field Duplicate		Original Data		Original Data		Original Data		Original Data	
Analytic Method	**Parameter**	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	3020		1230		5400		678		645	
E300	CHLORIDE (AS CL)	mg/L	1490		530		2660		99.2		87.7	
E300	FLUORIDE	mg/L	2		1.7		0.13	B	0.66		2.1	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.087		0.061		0.2	U	0.64		0.011	B
E300	NITROGEN, NITRITE	mg/L	1	U	0.2	U	40	U	0.1	U	0.1	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U	0.5	U	0.5	U	0.16	BJ	0.5	U
E300	SULFATE (AS SO4)	mg/L	83.6		63.2		209		90.3		122	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	254		159		524		383		320	

Table 4-9

Anions

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-603D		MW-604D		MW-605D		MW-605D		MW-606D	
	Field Sample ID	A04AMW603D0001		A04MW604D0001		A04BMW605D0001		A04BMW9000		A03MW606D0001	
	Sample Date	8/5/2011		8/10/2011		8/10/2011		8/10/2011		8/16/2011	
	Purpose	Original Data		Original Data		Original Data		Field Duplicate		Original Data	
Analytic Method	**Parameter**	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	692		1240		502		496		848	
E300	CHLORIDE (AS CL)	mg/L	53.8		471		38.8		38.4		69.3	
E300	FLUORIDE	mg/L	1.9		1.2		3.3		3.4		14.6	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.097		0.044		0.57		0.3		0.014	B
E300	NITROGEN, NITRITE	mg/L	0.1	U	0.2	U	0.1	U	0.1	U	0.2	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U	0.5	U	0.5	U	0.12	BJ	0.5	U
E300	SULFATE (AS SO4)	mg/L	125		50.2		89.6		87.2		35.2	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	350		323		354		354		688	

Table 4-9

Anions

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-606DR		MW-607D		MW-701DD		MW-702DD		MW-703DD	
	Field Sample ID	A03MW606DR0001		A03MW607D0001		A04AMW701DD0001		A04MW702DD0001		A03MW703DD0001	
	Sample Date	8/15/2011		8/19/2011		8/19/2011		8/11/2011		8/19/2011	
	Purpose	Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	**Parameter**	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	1200		754		1430		3720		1940	
E300	CHLORIDE (AS CL)	mg/L	326		101		488		179		455	
E300	FLUORIDE	mg/L	6.6		4.9		0.56		1.2		0.64	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.02	U	0.042		0.018	B	31.8		0.018	B
E300	NITROGEN, NITRITE	mg/L	0.2	U	0.1	U	0.2	U	0.2	U	0.2	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U	0.077	BJ	0.5	U	0.5	U	0.087	BJ
E300	SULFATE (AS SO4)	mg/L	96.1		63.8	J	185	J	1960		413	J
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	405		1490		257		210		382	

Table 4-9

Anions

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-704DD		MW-704DD		MW-705D		MW-705DD		MW-706DD	
	Field Sample ID	A04BMW9001		A04DMW704DD0001		MW705D0001		MW705DD0001		A04BMW706D0001	
	Sample Date	8/10/2011		8/10/2011		8/9/2011		8/9/2011		8/15/2011	
	Purpose	Field Duplicate		Original Data		Original Data		Original Data		Original Data	
Analytic Method	**Parameter**	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	2170		2130		1550		6720		2660	
E300	CHLORIDE (AS CL)	mg/L	206		206		108		2180		247	
E300	FLUORIDE	mg/L	0.34		0.34		0.44		0.1	U	0.72	
E300	NITRATE AS NITROUS OXIDE	mg/L	43.8		44.8		0.012	B	0.02	U	0.02	U
E300	NITROGEN, NITRITE	mg/L	0.15	B	0.1	B	0.2	U	0.2	U	0.2	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U	0.5	U	0.5	U	0.13	B	5	U
E300	SULFATE (AS SO4)	mg/L	787		782		748		1850		1200	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	85.6		88.4		184		159		234	

Table 4-9

Anions

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-707DD		MW-708DD		MW-708DD		MW-709DD		MW-710D	
	Field Sample ID	A04BMW707DD0001		A04DMW708DD0001		A04DMW9002		A04DMW709DD0001		A04DMW710D0001	
	Sample Date	8/18/2011		8/11/2011		8/11/2011		8/10/2011		8/15/2011	
	Purpose	Original Data		Original Data		Field Duplicate		Original Data		Original Data	
Analytic Method	**Parameter**	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	13500		1240		1220		1100		960	
E300	CHLORIDE (AS CL)	mg/L	5750		211		207		346		314	
E300	FLUORIDE	mg/L	0.4	B	0.56		0.6		0.98		1	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.44		0.02	U	0.02	U	0.014	B	0.02	U
E300	NITROGEN, NITRITE	mg/L	4	U	0.2	U	0.2	U	0.2	U	0.2	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.63	BJ	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L	1860	J	357		346		153		73.4	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	1750		231		232		256		272	

Table 4-9

Anions

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-710DD		MW-711D		MW-711DD		MW-712DD		MW-713D	
	Field Sample ID	A04DMW710DD0001		A04DMW711D0001		A04DMW711DD0001		A04DMW712DD0001		A04DMW713D0001	
	Sample Date	8/18/2011		8/9/2011		8/15/2011		8/18/2011		8/4/2011	
	Purpose	Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	**Parameter**	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	1340		936		5030		1490		904	
E300	CHLORIDE (AS CL)	mg/L	352		199		806		463		173	
E300	FLUORIDE	mg/L	0.97		0.62		0.64	B	1.2		0.23	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.028		0.0086	B	0.02	U	0.15		0.075	
E300	NITROGEN, NITRITE	mg/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.28	BJ	0.5	U	5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L	263		150		2170		220		76.2	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	270		302		34.4		321		419	

Table 4-9

Anions

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	Seep-1108-01		Seep-1108-02	
			Field Sample ID	Seep-1108-01		Seep-1108-02	
			Sample Date	8/8/2011		8/8/2011	
			Purpose	Original Data		Original Data	
Analytic Method	**Parameter**	**Units**		**Value**	**LabQual**	**Value**	**LabQual**
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L		292		314	
E300	CHLORIDE (AS CL)	mg/L		298		248	
E300	FLUORIDE	mg/L		939		867	
E300	NITRATE AS NITROUS OXIDE	mg/L		0.083		0.46	
E300	NITROGEN, NITRITE	mg/L		0.044		0.33	
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L		0.2	U	0.2	U
E300	SULFATE (AS SO4)	mg/L		0.5	U	0.5	U
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L		51.3		75.9	

Table 4-10

Sewer Sample Results - Solids

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		StationName	Sewer #1 US-0001		Sewer #2 US-0001	
		FieldSampleID	CITY OF LOCKPORT SEWER #1 US-0001		CITY OF LOCKPORT SEWER #2 US-0001	
		SampleDate	7/27/2011		7/27/2011	
AnalyticMethod	**Parameter**	**Units**	**Value**	**LabQual**	**Value**	**LabQual**
A-01-R MOD	THORIUM-228	pCi/g	0.27		0.47	
A-01-R MOD	THORIUM-230	pCi/g	0.448		0.325	
A-01-R MOD	THORIUM-232	pCi/g	0.224		0.44	
A-01-R MOD	URANIUM-234	pCi/g	3.55		4.37	
A-01-R MOD	URANIUM-235	pCi/g	0.201		0.219	
A-01-R MOD	URANIUM-238	pCi/g	3.72		4.77	

pCi/g = picoCuries per gram

LabQual = Laboratory Qualifier

Table 4-11

Sewer Sample Results - Liquids

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

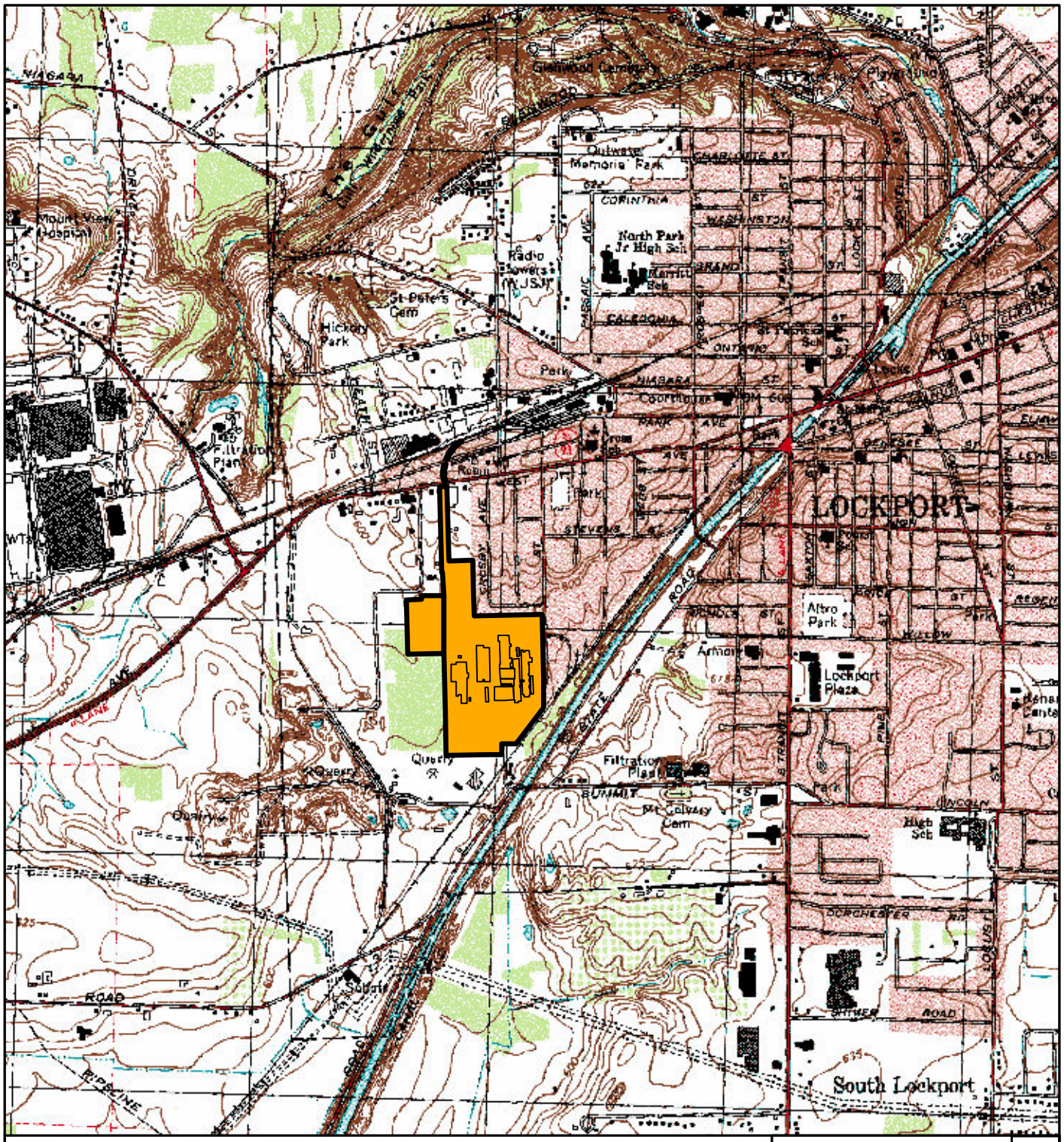
		StationName	Sewer #1 UW-0001		Sewer #2 UW-0001	
		FieldSampleID	CITY OF LOCKPORT SEWER #1 UW-0001		CITY OF LOCKPORT SEWER #2 UW-0001	
		SampleDate	7/27/2011		7/27/2011	
AnalyticMethod	**Parameter**	**Units**	**Value**	**LabQual**	**Value**	**LabQual**
A-01-R MOD	THORIUM-228	pCi/L	-0.002	U	0.053	U
A-01-R MOD	THORIUM-230	pCi/L	0.026		-0.005	U
A-01-R MOD	THORIUM-232	pCi/L	0.009	U	-0.005	U
A-01-R MOD	URANIUM-234	pCi/L	10.9		0.43	
A-01-R MOD	URANIUM-235	pCi/L	0.61		0.038	
A-01-R MOD	URANIUM-238	pCi/L	10.4		0.44	

LabQual = Laboratory Qualifier

pCi/L = picoCuries per liter

U = Analyte analyzed for, but was not detected.

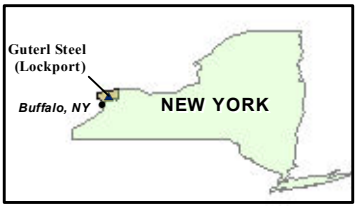
FIGURES



LEGEND

GUTERL SITE BOUNDARY

0 500 1,000 2,000 Feet



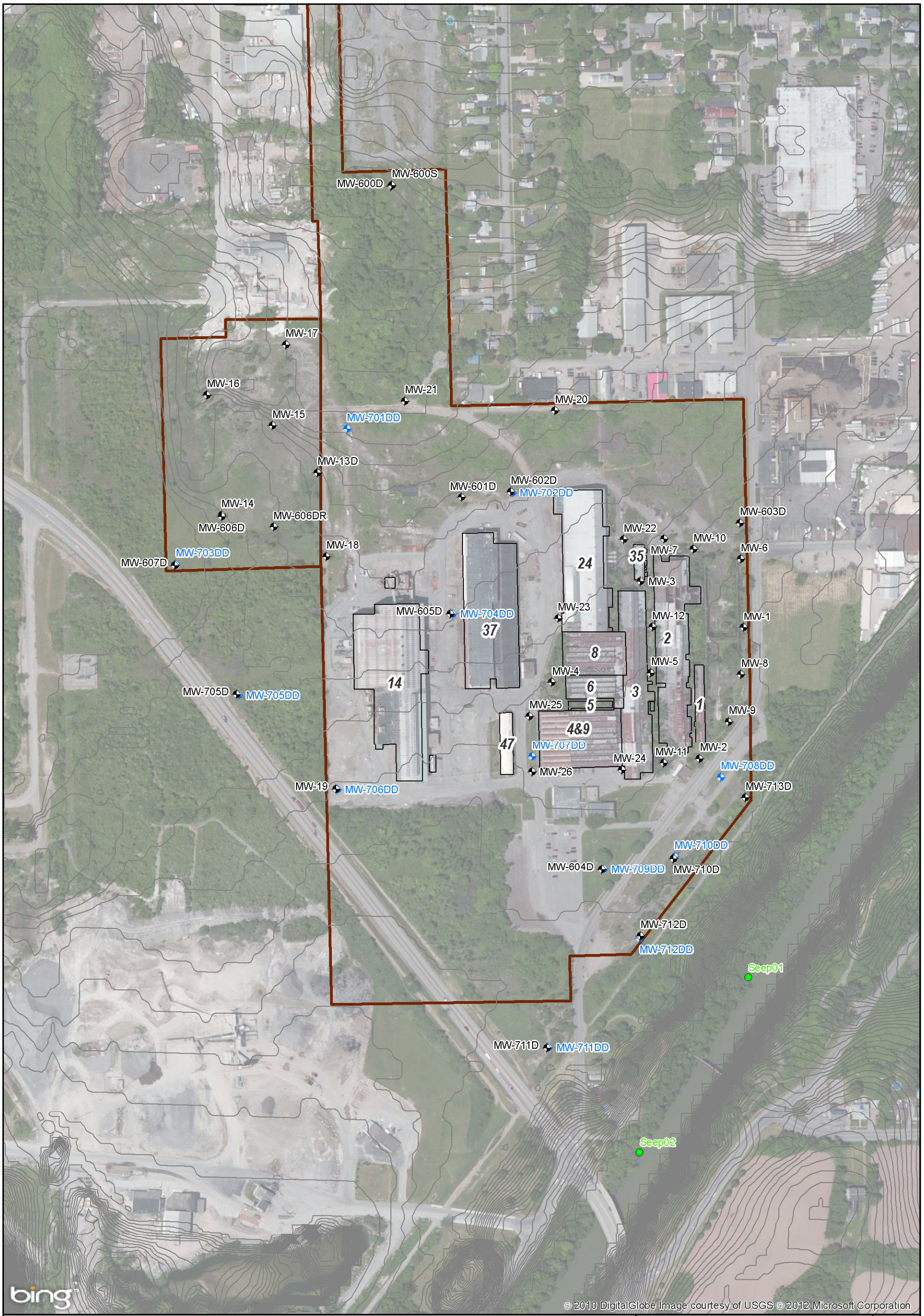
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

SITE LOCATION MAP

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
3/19/2012	1 inch = 2,000 feet	1-1

Filename: Fig1_Guterl_108_DGIR_Site_Location_rev1.pdf



0 75 150 300 Feet

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1 Ft CONTOUR)
- GUTERL SITE BOUNDARY

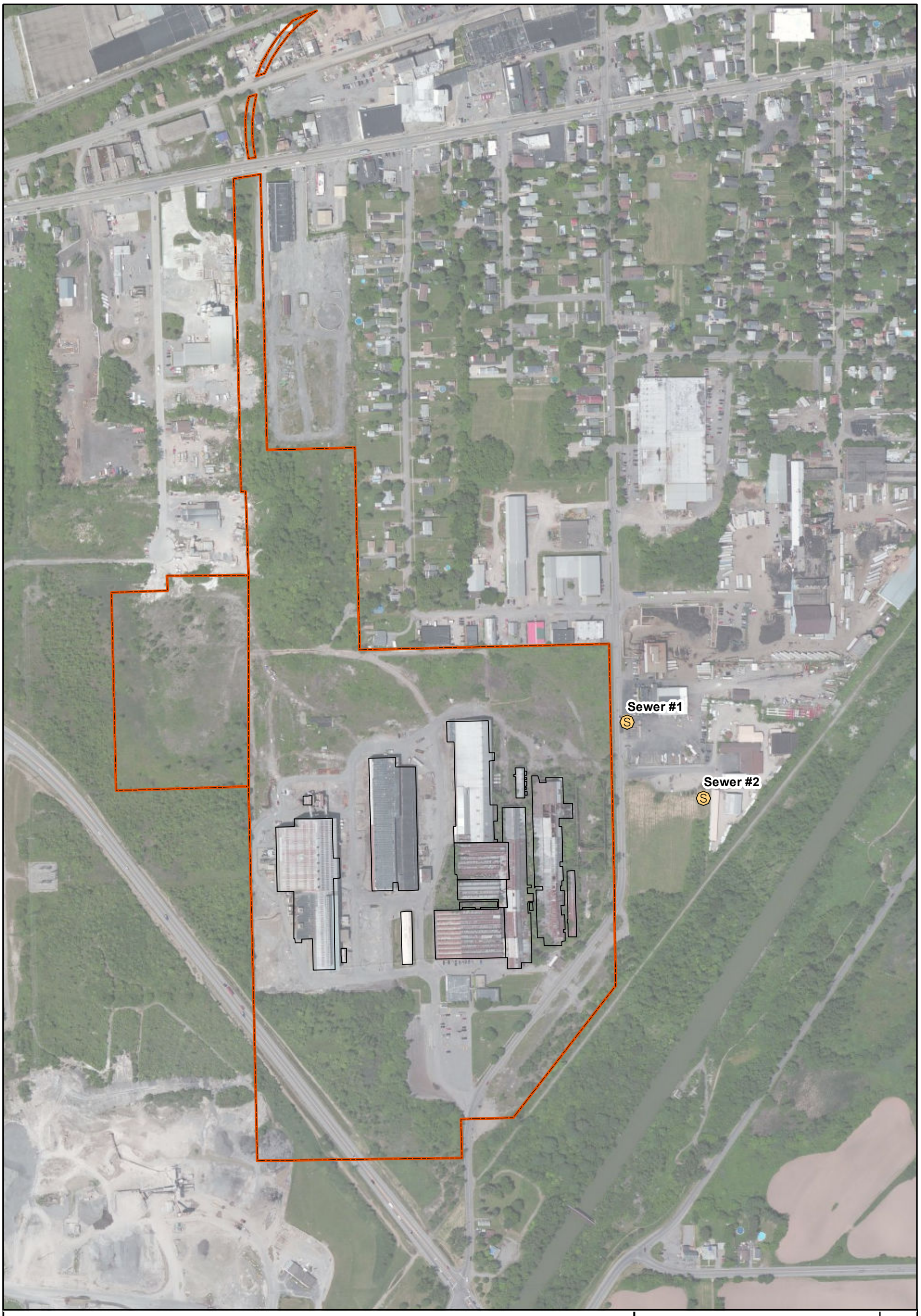
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

SITE PLAN WITH MONITORING WELL LOCATIONS
(AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
10/02/2012	1 inch = 300 feet	2-1

Filename: Fig2-1_Guterl_096_DGIR_MonWells_2011_rev1.pdf



0 75 150 300 Feet

Legend

- SANITARY SEWER MANHOLE LOCATION
- GUTERL SITE BOUNDARY

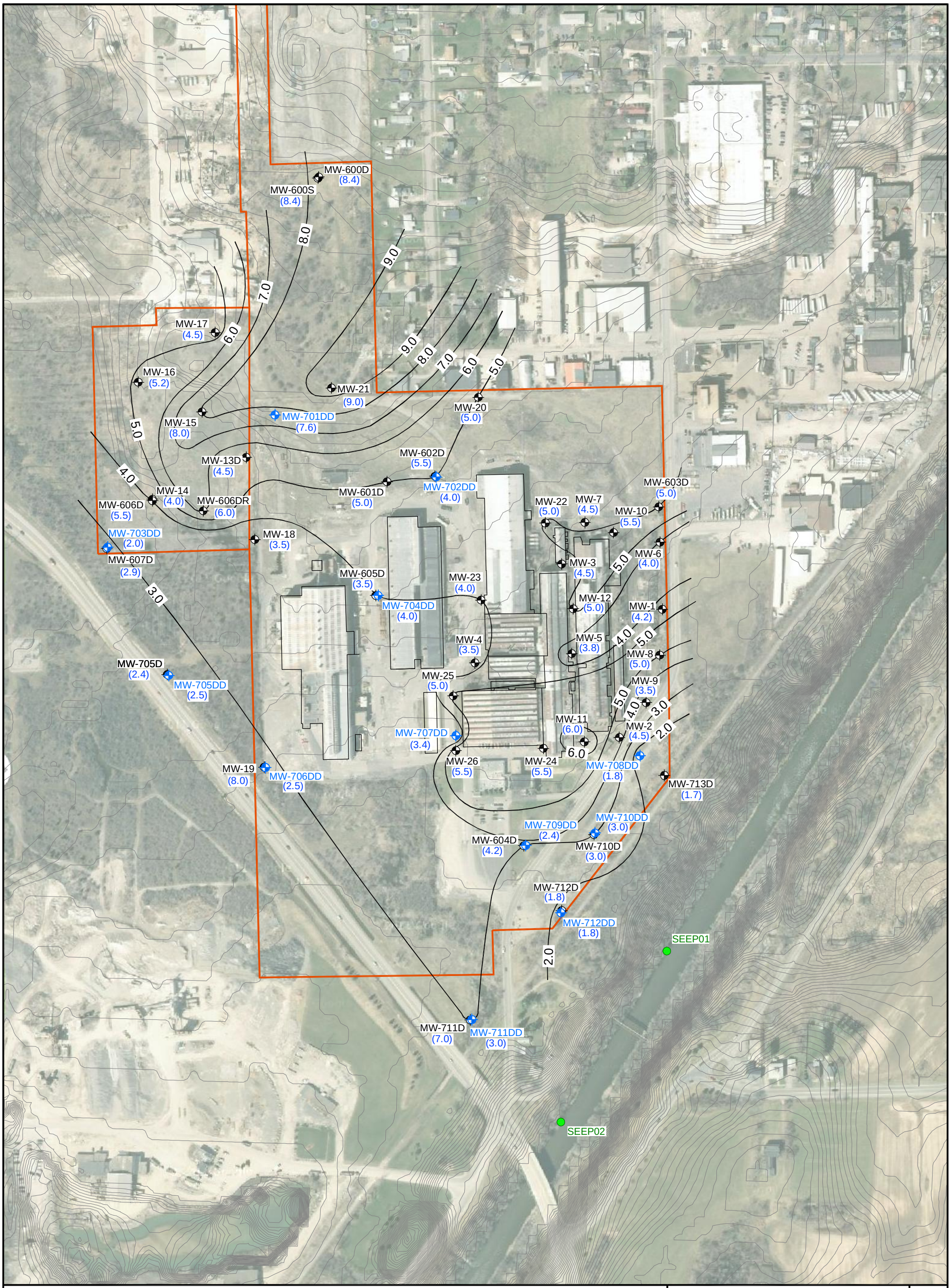
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

SANITARY SEWER SAMPLE LOCATIONS
JULY 2011

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
1/18/2012	1 inch = 350 feet	2-2

Filename: Fig 2-2_Guterl_103_DGIR_Sewer_Locs_rev1.pdf



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1FT CONTOUR)
- GUTERL SITE BOUNDARY
- (4.2) SOIL* THICKNESS (FEET)
- — 4.0 — SOIL* THICKNESS ISOPACH

0 75 150 300 Feet

Notes

1. * UNDIFFERENTIATED GLACIOLACUSTRINE SILTS AND CLAYS, GLACIAL TILL AND FILL MATERIAL.

2. MW-19 AND MW-711D NOT USED FOR CONTOURING DUE TO ANOMALOUS VALUE (MW-19) AND UNDERGROUND STRUCTURE ENCOUNTERED (MW-711D).

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

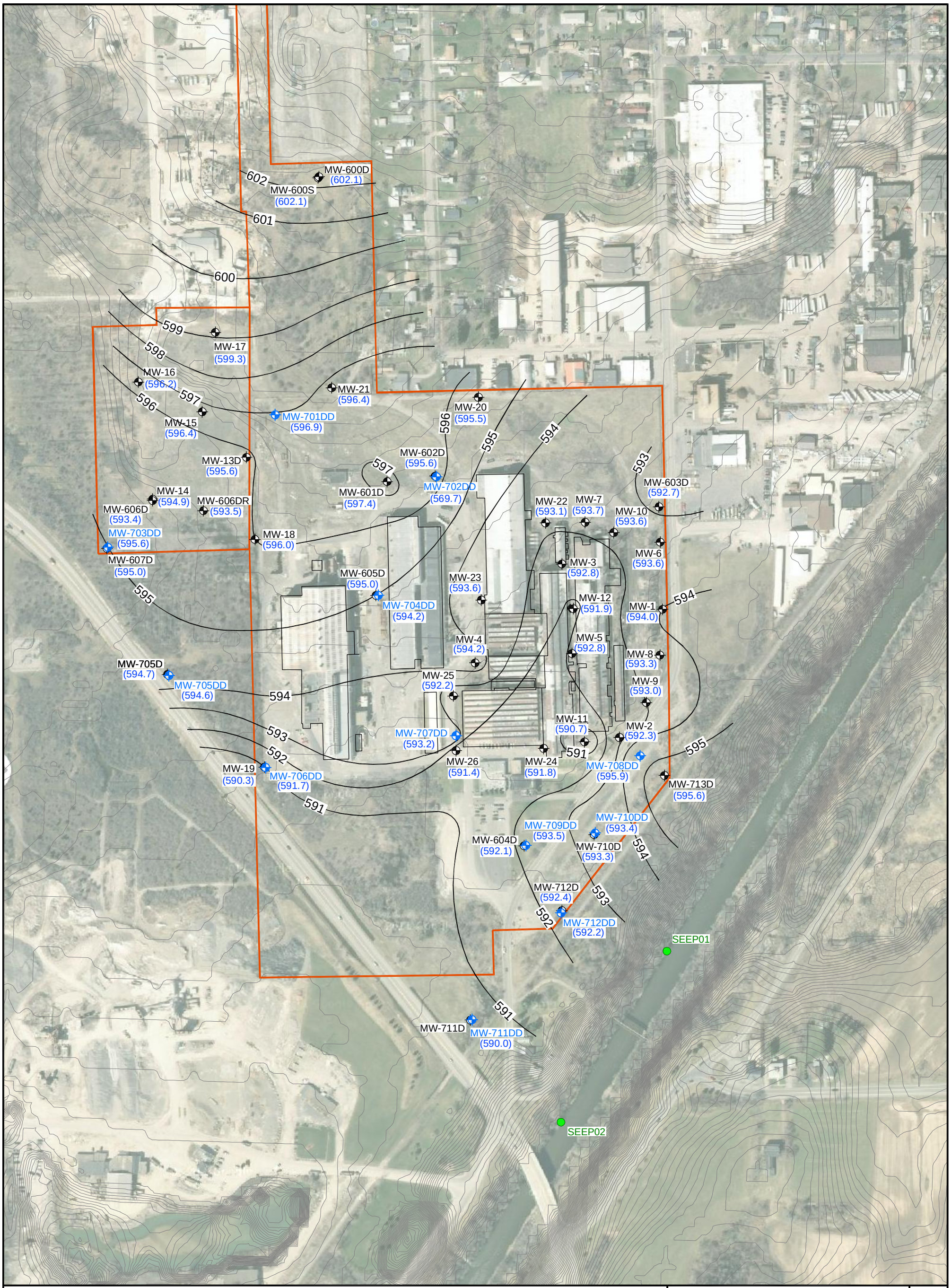
N W E S

SOIL OVERBURDEN THICKNESS MAP

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/18/2012	1 inch = 300 feet	4-1

File: O:\Project\140416\140416-B13.dwg



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1FT CONTOUR)
- GUTERL SITE BOUNDARY
- (583.68) TOP OF ROCK ELEVATION (FEET MSL)
- —586— TOP OF ROCK SURFACE CONTOUR

0 75 150 300 Feet

Notes

1. AVERAGE VALUE USED IN MW-604D / MW-709DD AREA.

2. MW-711D NOT USED FOR CONTOURING DUE TO UNDERGROUND STRUCTURE ENCOUNTERED.

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

TOP OF ROCK SURFACE ELEVATION CONTOUR MAP

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/6/2012	1 inch = 300 feet	4-2

File: O:\Project\140416\140416-B12.dwg

MW-600D
MW-600S
MW-17
MW-16
MW-21
MW-701DD
MW-15
MW-20
MW-13D
MW-602D
MW-601D
MW-702DD
MW-14
MW-606DR
MW-606D
MW-603D
MW-22
MW-7
MW-10
MW-703DD
MW-18
MW-6
MW-607D
MW-3
MW-605D
MW-23
MW-704DD
MW-12
MW-1
MW-705D
MW-4
MW-5
MW-8
MW-705DD
MW-25
MW-9
MW-707DD
MW-11
MW-2
MW-26
MW-24
MW-708DD
MW-19
MW-706DD
MW-713D
MW-710DD
MW-709DD
MW-710D
MW-604D
MW-712D
MW-712DD
SEEP01
MW-711DD
MW-711D
SEEP02
A
A'
B
B'
C
C'
D
D'
E
E'
F
F'

Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1FT CONTOUR)
- GUTERL SITE BOUNDARY
- CROSS SECTION LINE AND VIEWING DIRECTION

0 75 150 300 Feet

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

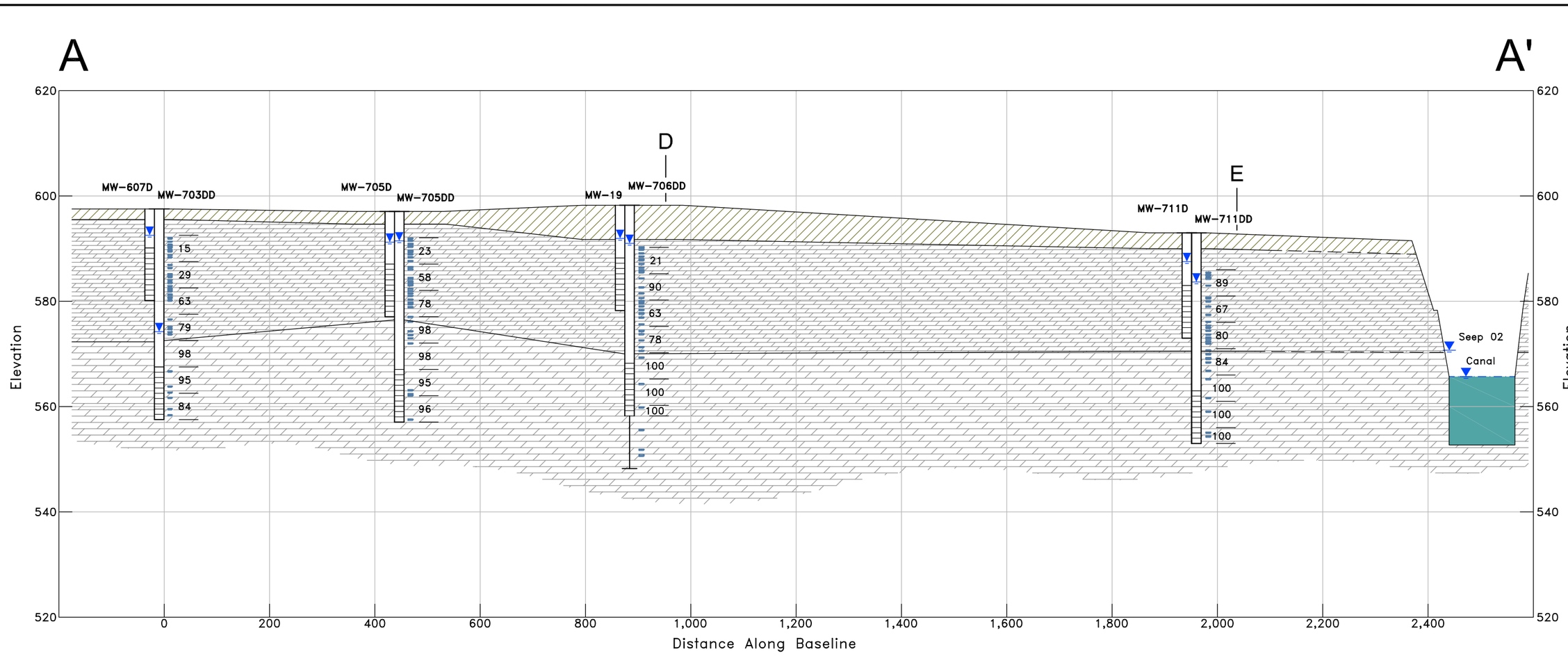
N W E S

GEOLOGIC CROSS SECTION LOCATOR MAP

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/6/2012	1 inch = 300 feet	4-3

File: O:\Project\140416\140416-B6.dwg



LEGEND:

- MONITORING WELL
- WATER LEVEL, AUGUST 2011
- SCREENED INTERVAL
- BOTTOM OF BORING
- 23 FRACTURES / RQD (%)
- OVERBURDEN SOIL
- FRACTURED DOLOSTONE, RQD <80%
- DOLOSTONE, RQD >80%
- D INTERSECTING CROSS SECTION LOCATION

NOTES

1. CANAL WATER LEVEL AND BOTTOM REFERENCED FROM AUGUST 2011 GAUGE READING AT LOCK 35, APPROXIMATELY 1.75 MILES DOWNSTREAM.

2. RQD = ROCK QUALITY DESIGNATION

VERTICAL SCALE: 20' / 0

HORIZONTAL SCALE: 0 / 200'

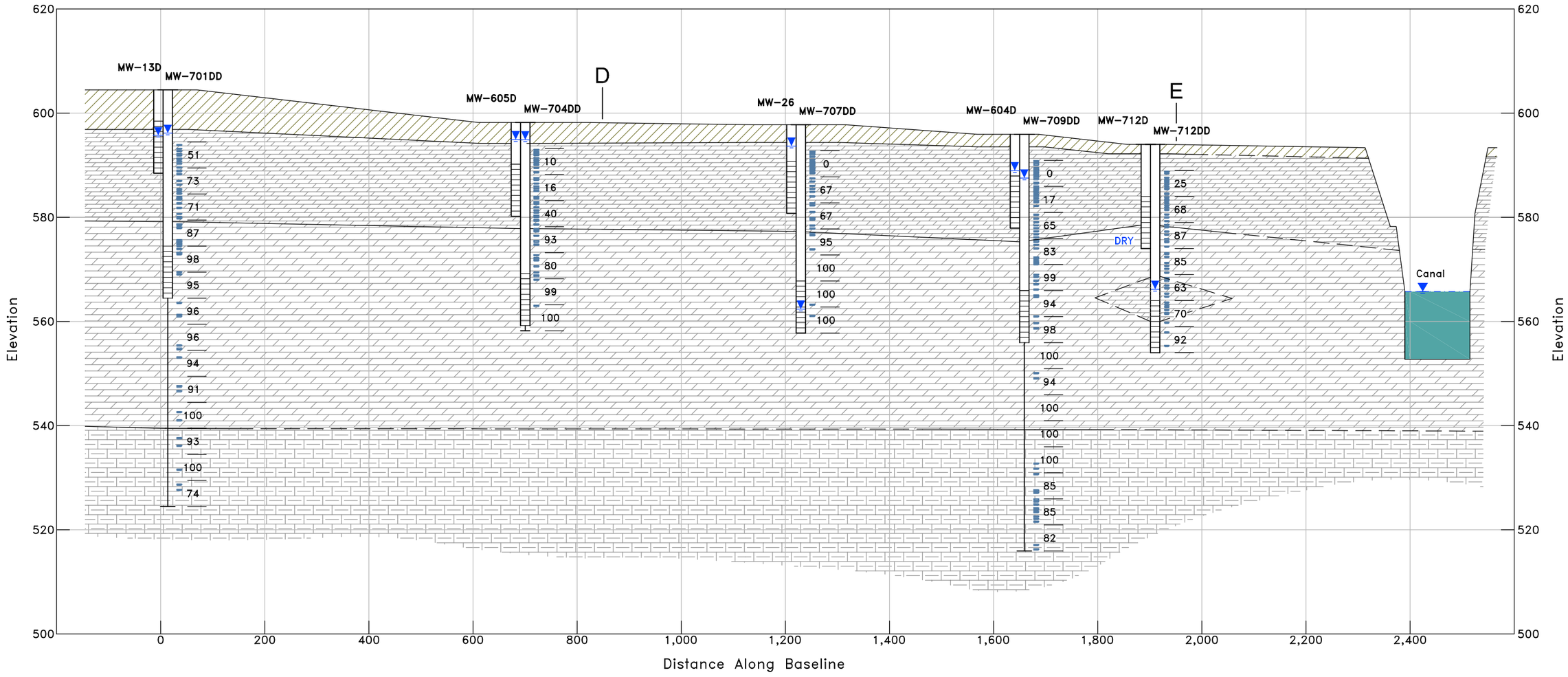
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

CROSS SECTION A-A'

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/5/2012	AS SHOWN	4-4

File: O:\Project\140416\140416-B1.dwg



LEGEND:

- MONITORING WELL
- WATER LEVEL, AUGUST 2011
- SCREENED INTERVAL
- BOTTOM OF BORING
- 23 FRACTURES / RQD (%)
- OVERBURDEN SOIL
- FRACTURED DOLOSTONE, RQD <80%
- DOLOSTONE, RQD >80%
- SHALEY DOLOSTONE
- D INTERSECTING CROSS SECTION LOCATION

NOTES

1. CANAL WATER LEVEL AND BOTTOM REFERENCED FROM AUGUST 2011 GAUGE READING AT LOCK 35, APPROXIMATELY 1.75 MILES DOWNSTREAM.
2. RQD = ROCK QUALITY DESIGNATION

VERTICAL SCALE: 20' / 0

HORIZONTAL SCALE: 0 / 200'

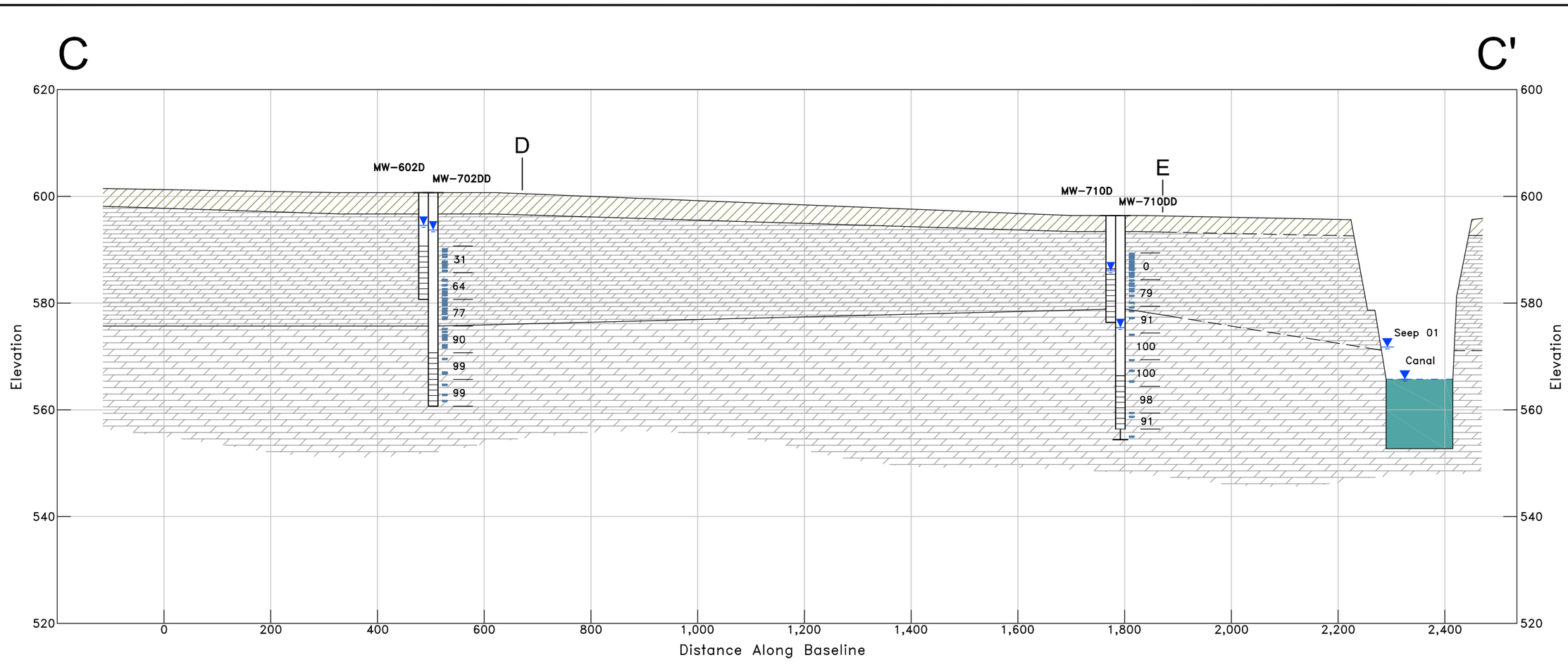
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

CROSS SECTION B-B'

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/5/2012	AS SHOWN	4-5

File: O:\Project\140416\140416-B2.dwg



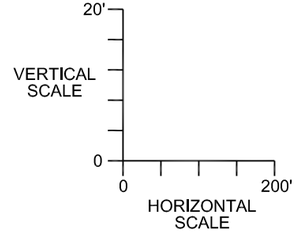
LEGEND:

- MONITORING WELL
- WATER LEVEL, AUGUST 2011
- SCREENED INTERVAL
- BOTTOM OF BORING
- 23 FRACTURES / RQD (%)
- OVERBURDEN SOIL
- FRACTURED DOLOSTONE, RQD <80%
- DOLOSTONE, RQD >80%
- D INTERSECTING CROSS SECTION LOCATION

NOTES

1. CANAL WATER LEVEL AND BOTTOM REFERENCED FROM AUGUST 2011 GAUGE READING AT LOCK 35, APPROXIMATELY 1.75 MILES DOWNSTREAM.

2. RQD = ROCK QUALITY DESIGNATION



US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

CROSS SECTION C-C'

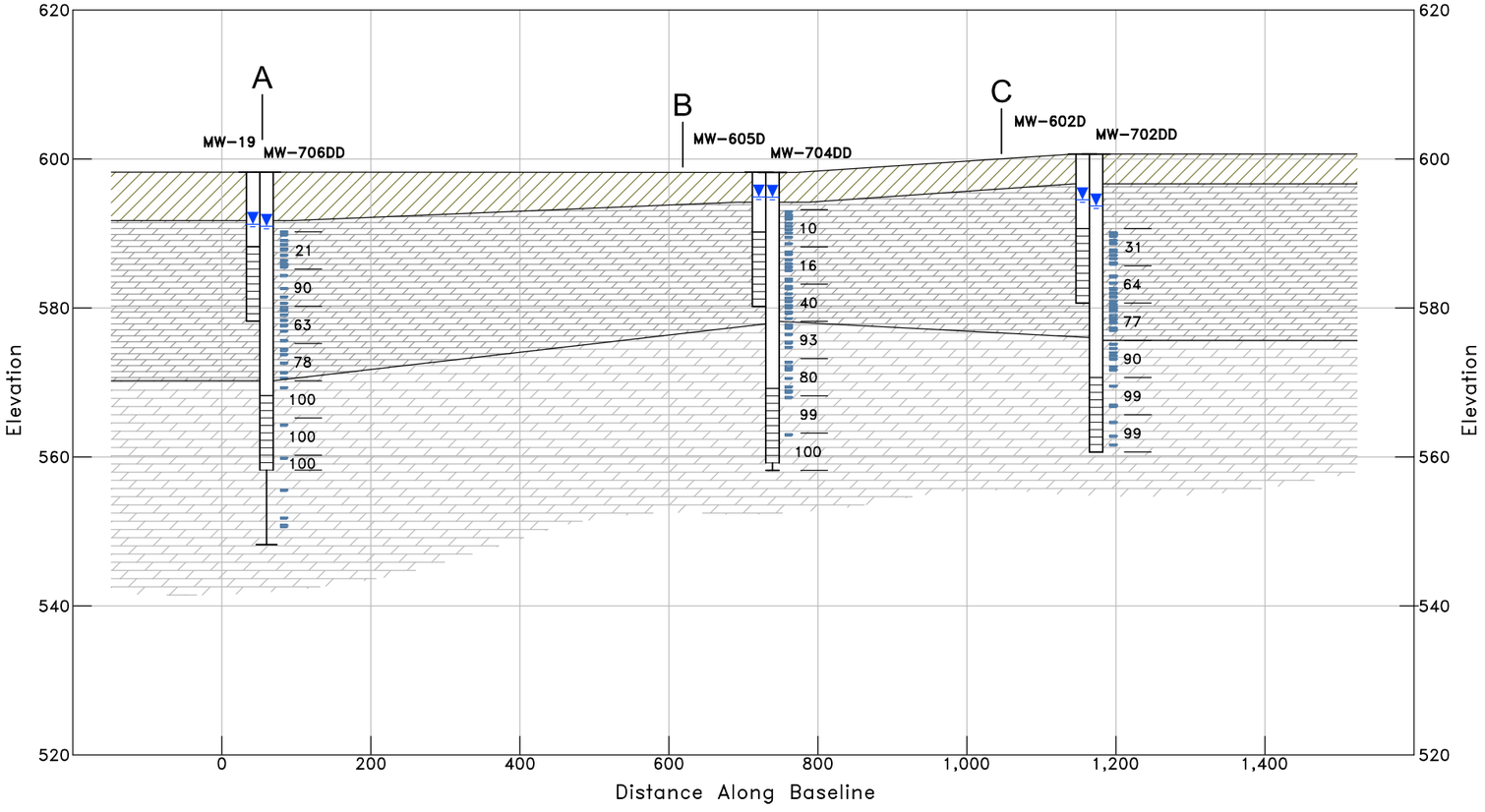
GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/6/2012	AS SHOWN	4-6

File: O:\Project\140416\140416-B3.dwg

D

D'



LEGEND:

- MONITORING WELL
- WATER LEVEL, AUGUST 2011
- SCREENED INTERVAL
- BOTTOM OF BORING
- 23 FRACTURES / RQD (%)
- OVERBURDEN SOIL
- FRACTURED DOLOSTONE, RQD <80%
- DOLOSTONE, RQD >80%
- A INTERSECTING CROSS SECTION LOCATION

NOTE

RQD = ROCK QUALITY DESIGNATION

VERTICAL SCALE: 20' / 0

HORIZONTAL SCALE: 0 / 200'

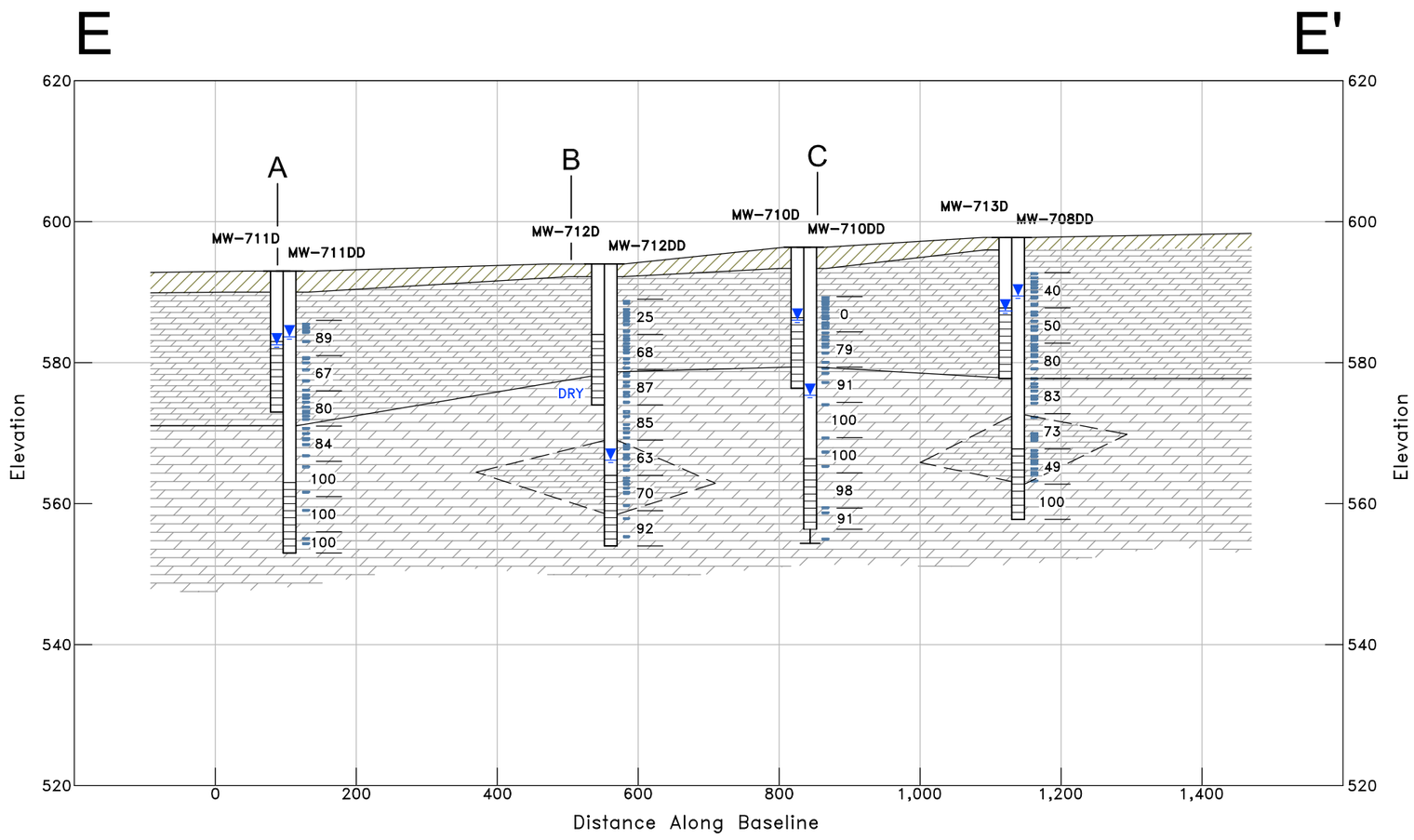
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

CROSS SECTION D-D'

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/5/2012	AS SHOWN	4-7

File: O:\Project\140416\140416-B4.dwg



LEGEND:

- MONITORING WELL
- WATER LEVEL, AUGUST 2011
- SCREENED INTERVAL
- BOTTOM OF BORING
- 23 FRACTURES / RQD (%)
- OVERBURDEN SOIL
- FRACTURED DOLOSTONE, RQD <80%
- DOLOSTONE, RQD >80%
- A INTERSECTING CROSS SECTION LOCATION

NOTE

RQD = ROCK QUALITY DESIGNATION

VERTICAL SCALE: 20' / 0

HORIZONTAL SCALE: 0 / 200'

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

CROSS SECTION E-E'

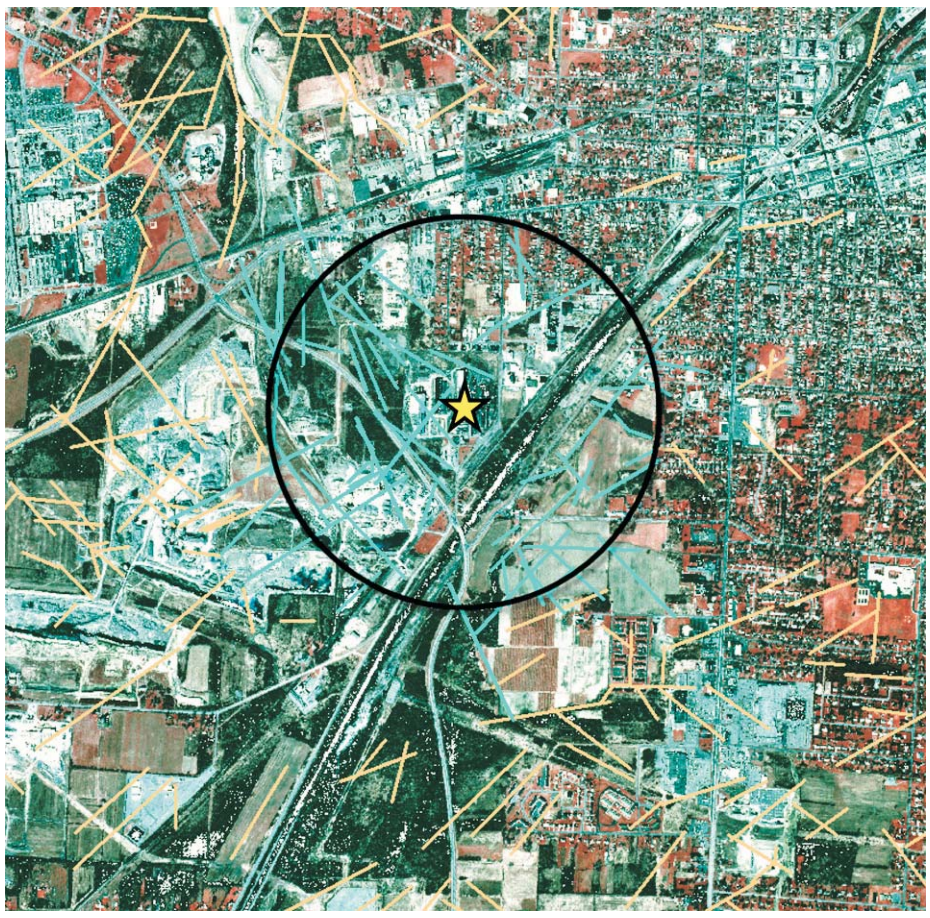
GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/6/2012	AS SHOWN	4-8

File: O:\Project\140416\140416-B5.dwg

Half-Mile Radius Rose Diagram

AGC Study Area

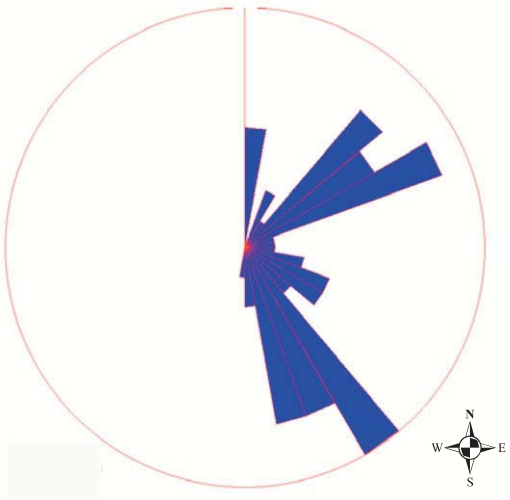


AGC Study area fracture traces included in rose diagram

AGC Study area fracture traces NOT included in rose diagram

Project Site Location

The cyan colored fractures show the 61 fractures collected by AGC analysis in a 1/2-mile radius rose diagram. If a portion of a fracture is crossed by the circle, the complete length of the fracture trace is considered in the rose diagram.



Half-mile Radius Rose Diagram

(61 fracture traces out of 224 total number of fracture traces in the study area)

One-Mile Radius Rose Diagram

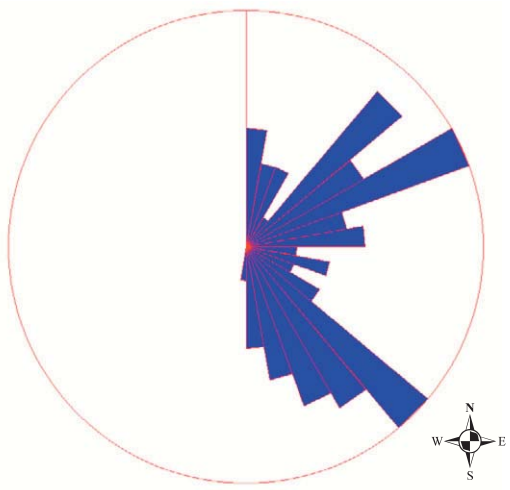
AGC Study Area

AGC Study area fracture traces included in rose diagram

AGC Study area fracture traces NOT included in rose diagram

Project Site Location

The cyan colored fractures show the 133 fractures collected by AGC analysis in a one-mile radius rose diagram. If a portion of a fracture is crossed by the circle, the complete length of the fracture trace is considered in the rose diagram.



One-mile Radius Rose Diagram

(133 fracture traces out of 224 total number of fracture traces in the study area)

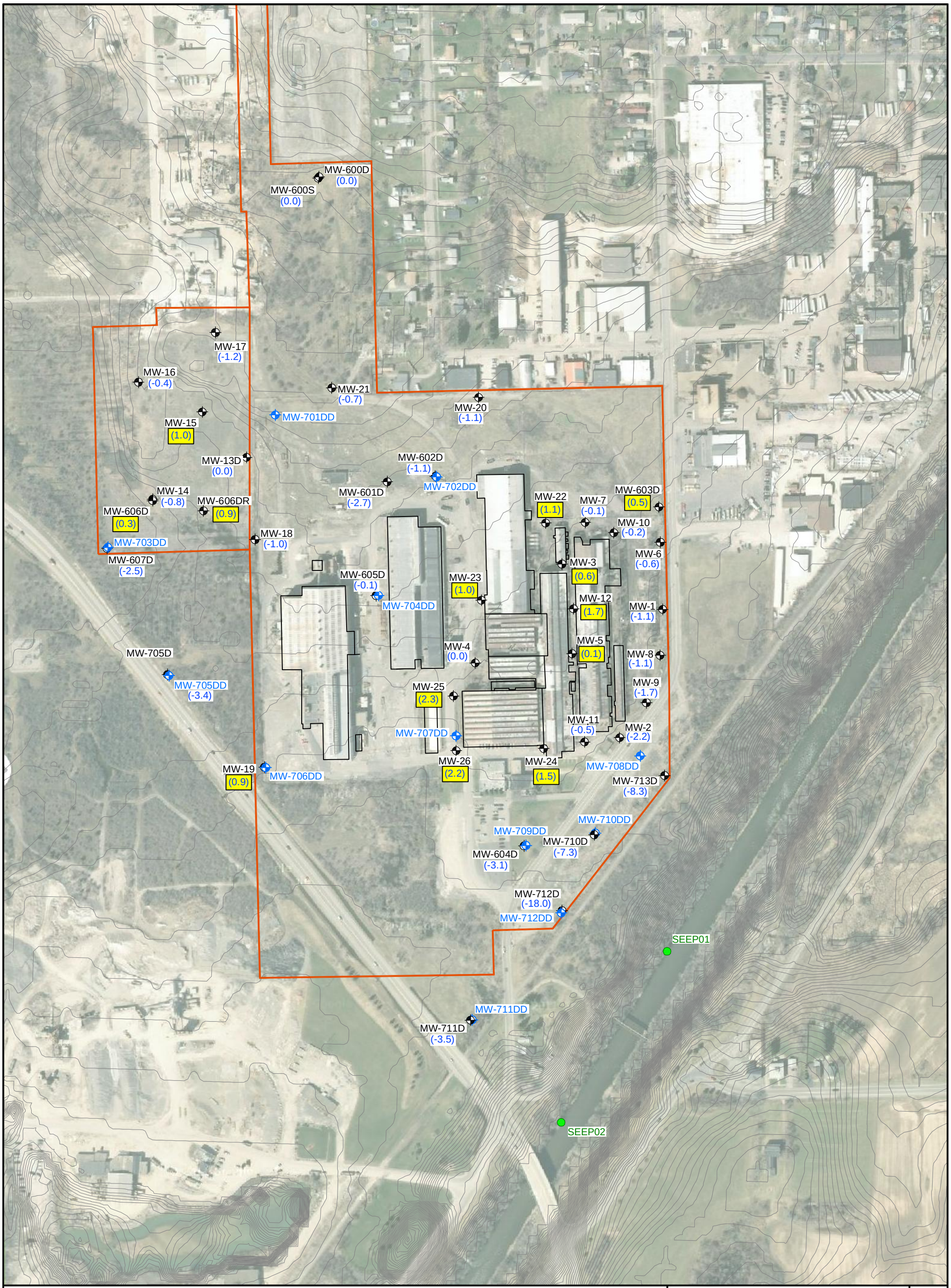
US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG®

HALF-MILE RADIUS ROSE DIAGRAM AND ONE-MILE RADIUS ROSE DIAGRAM

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:		Figure No.:
12/23/11	No Scale	4-9

s-140416-12/11-w



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1FT CONTOUR)
- GUTERL SITE BOUNDARY
- (-1.1) NEGATIVE VALUES INDICATE DISTANCE WATER LEVEL IS BELOW THE TOP OF BEDROCK
- (1.5) POSITIVE VALUES INDICATE DISTANCE WATER LEVEL IS ABOVE THE TOP OF BEDROCK. POSITIVE VALUES ARE HIGHLIGHTED

0 75 150 300 Feet

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

GROUNDWATER LEVELS RELATIVE TO BEDROCK SURFACE

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/6/2012	1 inch = 300 feet	4-10

File: O:\Project\140416\140416-B11.dwg

Note

VERTICAL HYDRAULIC GRADIENT IS THE DIFFERENCE IN WATER LEVELS FROM TWO WELLS IN CLOSE PROXIMITY DIVIDED BY THE VERTICAL DISTANCE BETWEEN THE MID-POINT OF THE WELL SCREENS. A POSITIVE VALUE INDICATES AN UPWARD GRADIENT.

Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1FT CONTOUR)
- GUTERL SITE BOUNDARY
- (0.057) VERTICAL HYDRAULIC GRADIENT

- LESS THAN 0.01
- 0.01 TO 0.1
- 0.1 TO 1
- GREATER THAN 1

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

GROUNDWATER VERTICAL GRADIENTS

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/5/2012	1 inch = 300 feet	4-11

File: O:\Project\140416\140416-B16.dwg

MW-600D (602.13)
MW-600S
MW-17 (598.05)
MW-16 (595.83)
MW-15 (597.39)
MW-13D (595.62)
MW-14 (594.12)
MW-606DR (594.42)
MW-606D (593.72)
MW-703DD
MW-607D (592.55)
MW-18 (594.94)
MW-705D (591.29)
MW-705DD
MW-19 (591.23)
MW-706DD
MW-701DD
MW-21 (595.73)
MW-20 (594.44)
MW-602D (594.54)
MW-702DD
MW-601D (594.68)
MW-605D (594.90)
MW-704DD
MW-23 (594.54)
MW-4 (594.18)
MW-25 (594.56)
MW-707DD
MW-26 (593.66)
MW-24 (593.25)
MW-22 (594.19)
MW-7 (593.58)
MW-603D (593.21)
MW-10 (593.38)
MW-3 (593.35)
MW-6 (593.00)
MW-12 (593.58)
MW-1 (592.90)
MW-5 (593.02)
MW-8 (592.23)
MW-9 (591.32)
MW-11 (590.23)
MW-2 (590.19)
MW-708DD
MW-713D (587.34)
MW-710DD
MW-709DD
MW-710D (586.02)
MW-604D (588.92)
MW-712D (574.46)
MW-712DD
SEEP01 (571.7)
MW-711DD
MW-711D (582.54)
SEEP02 (570.7)
602
601
600
599
598
597
596
595
594
593
592
591
590
589
588
587
586
584
583
582
580
578
576
574
572
585
581
579
577
575
573
571

Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1FT CONTOUR)
- GUTERL SITE BOUNDARY
- (583.68) GROUNDWATER ELEVATION (FEET MSL)
- 586 GROUNDWATER CONTOUR
- GROUNDWATER FLOW PATH (INFERRED)

0 75 150 300 Feet

Note

CANAL WATER LEVEL WAS 565.7 FEET AT 10:00 AM ON 8/8/2011. CANAL BOTTOM IS APPROXIMATELY 552.7 FEET. CANAL WATER ELEVATION WAS REFERENCED FROM GAUGE READING AT LOCK 35, APPROXIMATELY 1.75 MILES DOWNSTREAM.

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

POTENTIOMETRIC SURFACE MAP
SHALLOW WELLS
AUGUST 3, 2011

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/6/2012	1 inch = 300 feet	4-12

File: O:\Project\140416\140416-B8.dwg

Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1FT CONTOUR)
- GUTERL SITE BOUNDARY
- (583.68) GROUNDWATER ELEVATION (FEET MSL)
- —586— GROUNDWATER CONTOUR
- GROUNDWATER FLOW PATH (INFERRED)

0 75 150 300 Feet

Note

WELL MW-707DD WAS NOT USED FOR CONTOURING BECAUSE IT DOES NOT INTERSECT WATER PRODUCING FRACTURES.

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

POTENTIOMETRIC SURFACE MAP
DEEP WELLS
AUGUST 3, 2011

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/6/2012	1 inch = 300 feet	4-13

File: O:\Project\140416\140416-B7.dwg

Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1FT CONTOUR)
- GUTERL SITE BOUNDARY
- (110) HORIZONTAL HYDRAULIC CONDUCTIVITY (FT/DAY)
- NM NOT MEASURED

0 75 150 300 Feet

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

HYDRAULIC CONDUCTIVITY DISTRIBUTION MAP SHALLOW BEDROCK WELLS

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/6/2012	1 inch = 300 feet	4-14

File: O:\Project\140416\140416-B14.dwg

0 75 150 300 Feet

Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1FT CONTOUR)
- GUTERL SITE BOUNDARY
- (41.4) HORIZONTAL HYDRAULIC CONDUCTIVITY (FT/DAY)

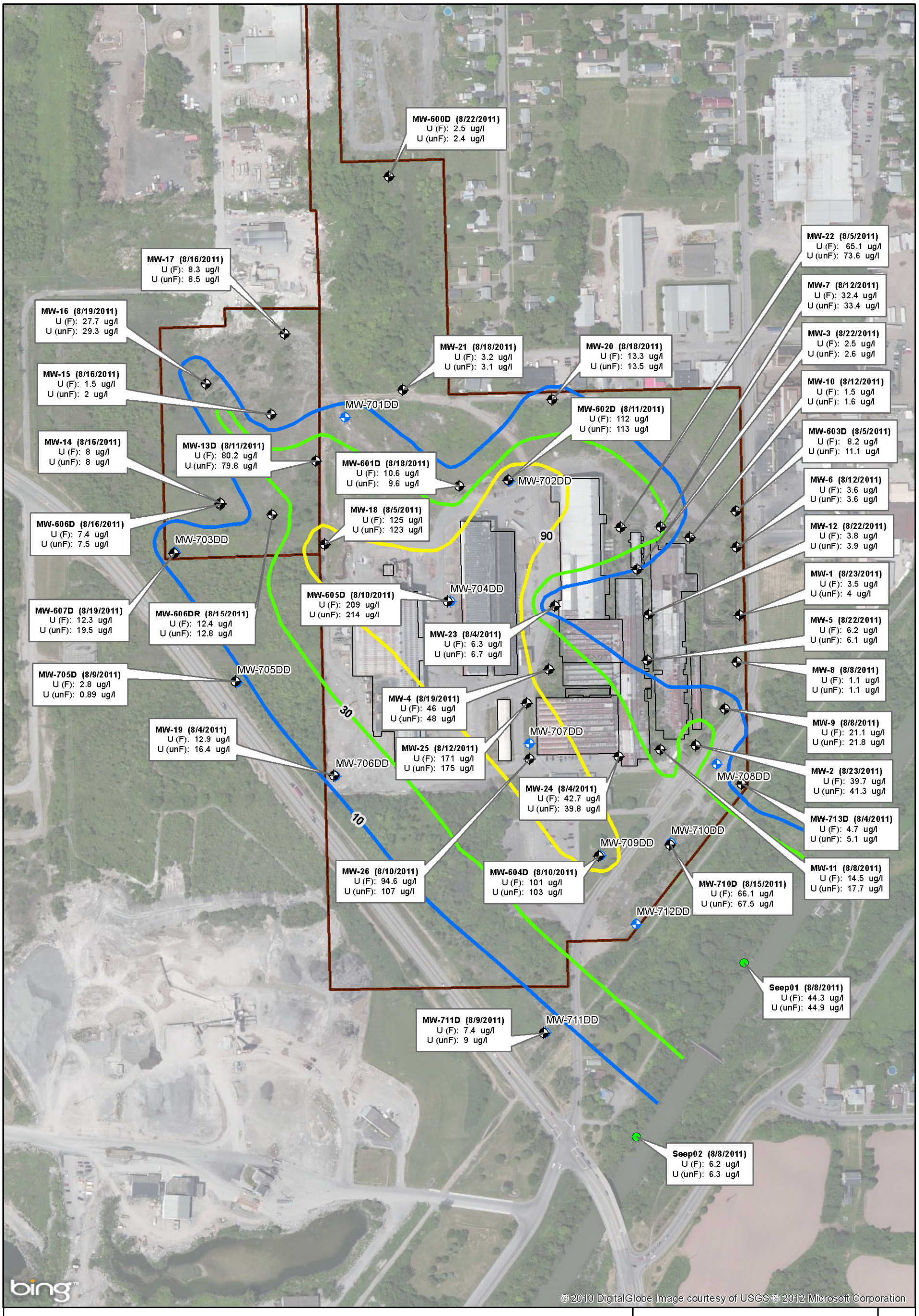
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

HYDRAULIC CONDUCTIVITY DISTRIBUTION MAP DEEP BEDROCK WELLS

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/6/2012	1 inch = 300 feet	4-15

File: O:\Project\140416\140416-B15.dwg



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP SAMPLE
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- EXTENT OF GROUNDWATER 90 µg/l
- GUTERL SITE BOUNDARY

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

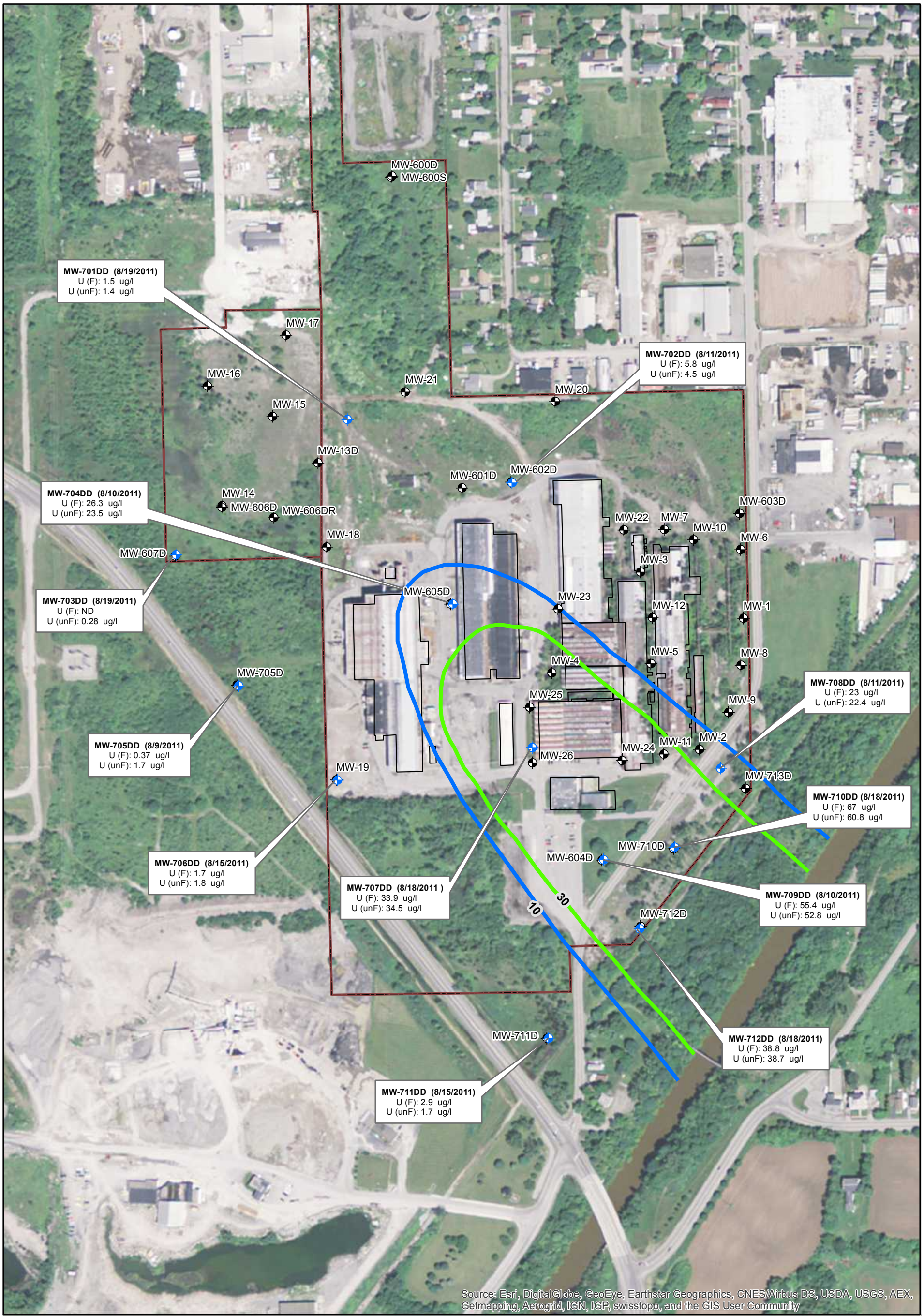
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

TOTAL URANIUM IN SHALLOW GROUNDWATER
(AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
10/02/2012	1 inch = 300 feet	4-16

Date: 10/2/2012 Path: G:\Guterl\140416\GIS_Documents\Project_Maps\Fig 4-16_Guterl_107_GWUr_2011_Shallow_rev2.mxd



0 75 150 300 Feet

Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- GUTERL SITE BOUNDARY

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER
ND = NOT DETECTED

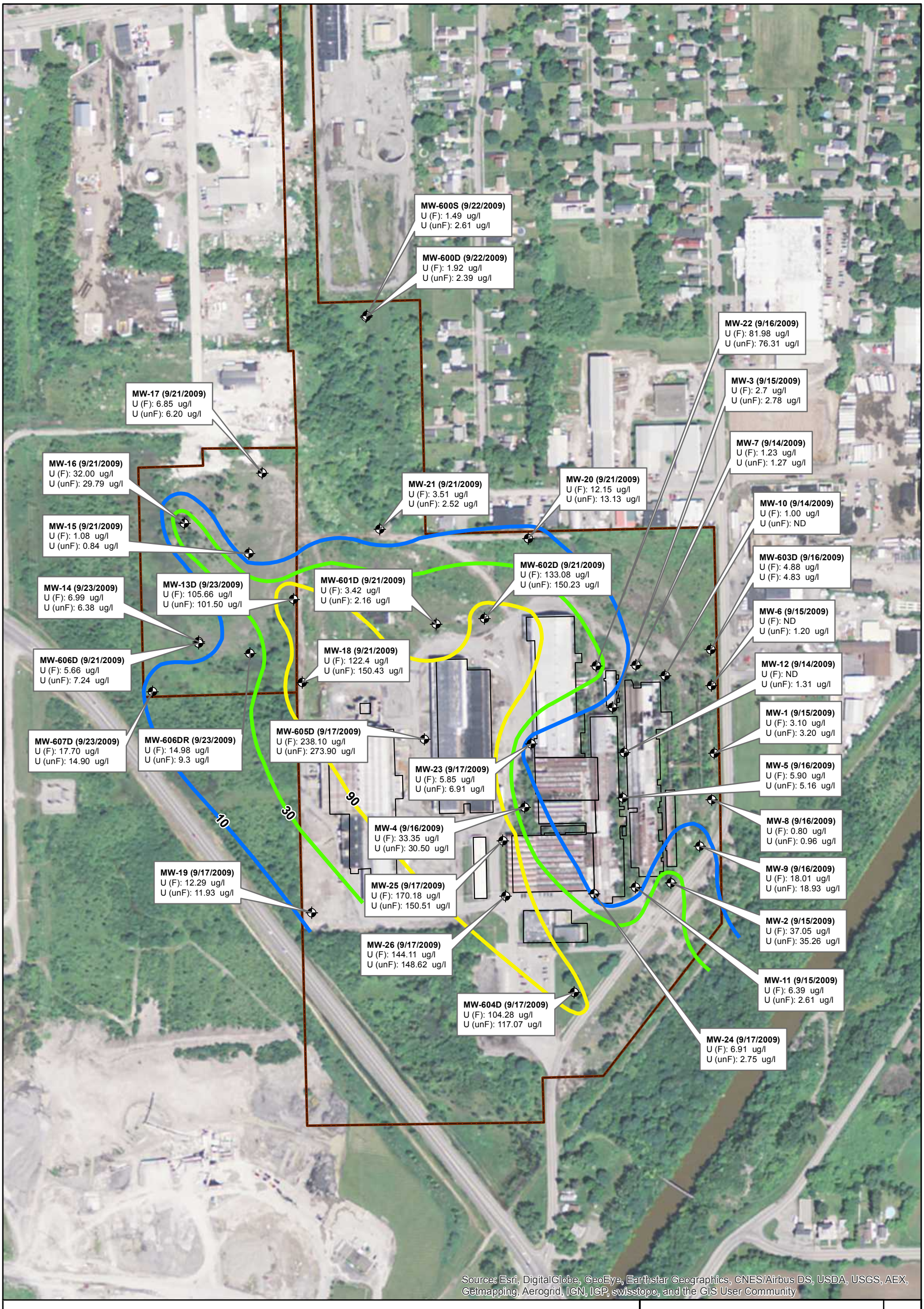
US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

TOTAL URANIUM IN DEEP GROUNDWATER
(AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
5/14/2015	1 inch = 300 feet	4-17

Date: 5/14/2015 Path: G:\Guterl\140416\GIS_Documents\Project_Maps\Fig 4-17_Guterl_101_GWTotUr_2011_Deep_rev3.mxd



Legend

- SHALLOW WELL LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- EXTENT OF GROUNDWATER 90 µg/l
- GUTERL BUILDINGS
- GUTERL SITE BOUNDARY

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER
ND = NOT DETECTED

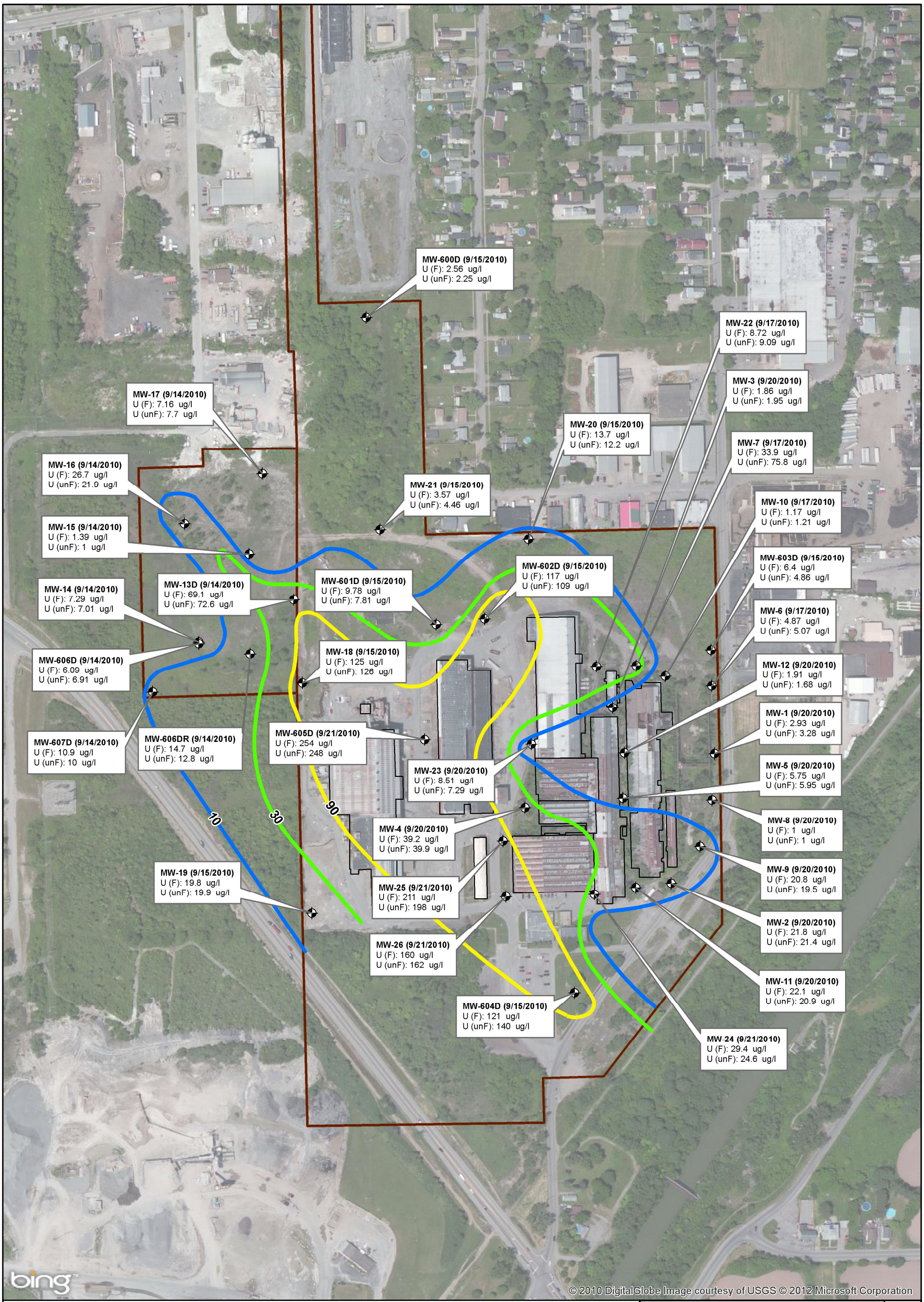
US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

TOTAL URANIUM IN GROUNDWATER
(SEPTEMBER 2009)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
5/14/2015	1 inch = 300 feet	4-18

Name: Fig 4-18 Guterl_091_GWTotUrDis_2009_rev3.pdf



Legend

- SHALLOW WELL LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- EXTENT OF GROUNDWATER 90 µg/l
- GUTERL BUILDINGS
- GUTERL SITE BOUNDARY

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

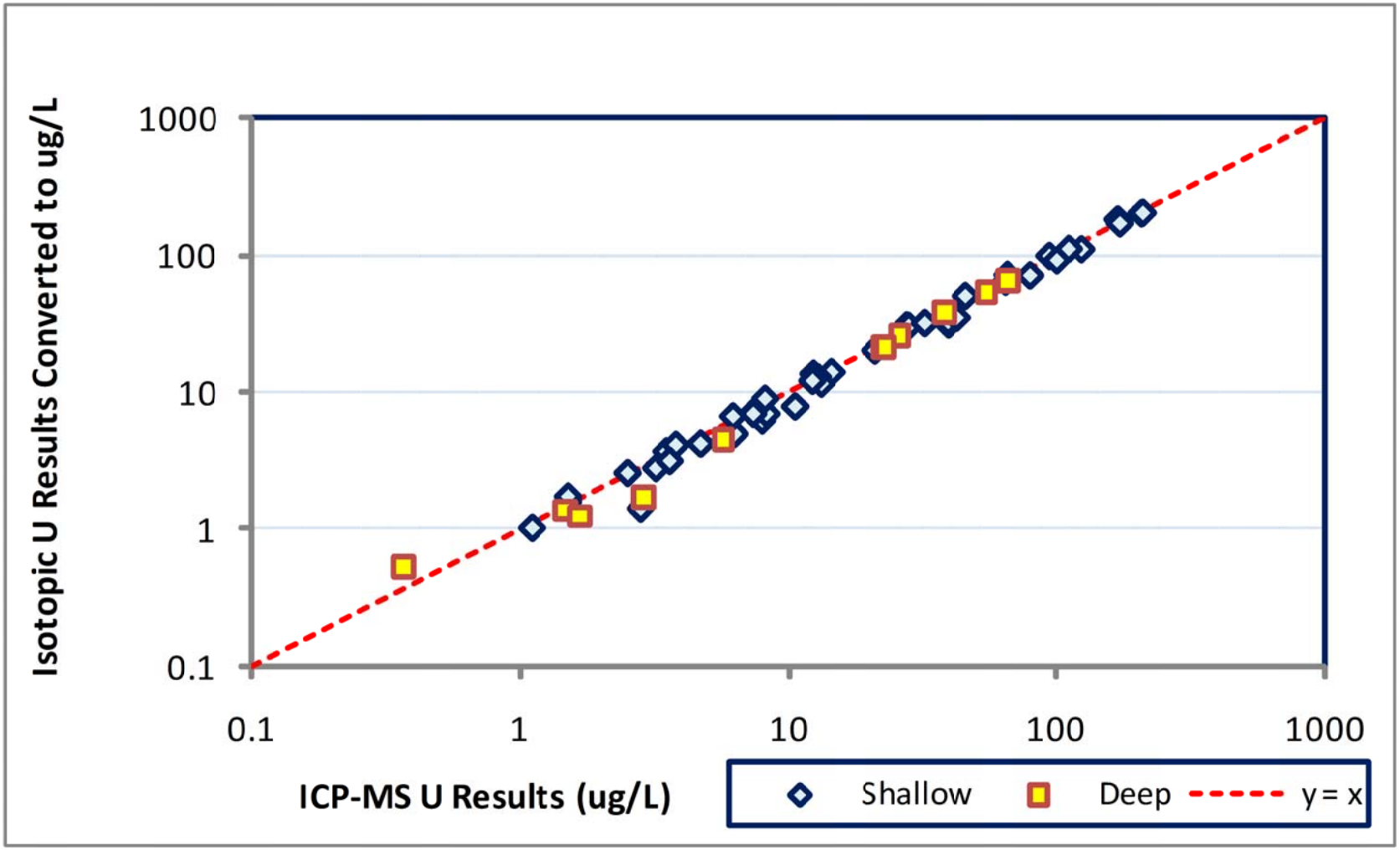
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

TOTAL URANIUM IN GROUNDWATER
(SEPTEMBER 2010)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
10/24/2012	1 inch = 300 feet	4-19

Name: Fig 4-19 Guterl_089_GWTotUrDis_2010_rev2



US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

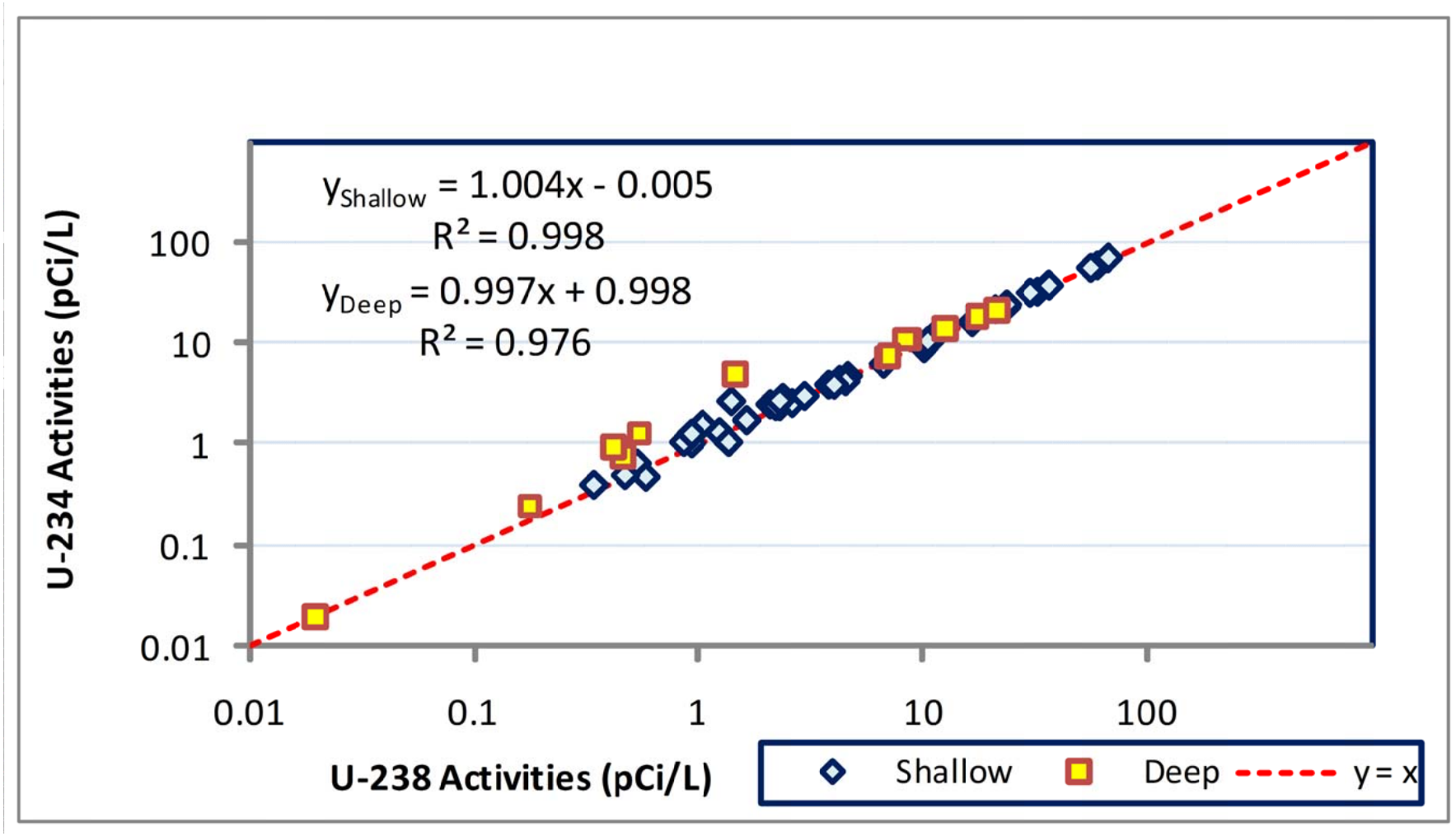
N
W E
S

ICP VS. ISO. CONVERTED ISOTOPIC URANIUM VS. ICP-MS URANIUM RESULTS FOR 2011 FILTERED GROUNDWATER SAMPLES

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No.:
1/18/2012	NO SCALE	4-20

C:\CAD-GIS\Acad 2011\140416 Guterl\140416-01.dwg - Monday, 6/11/12 - 4:12 PM



US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

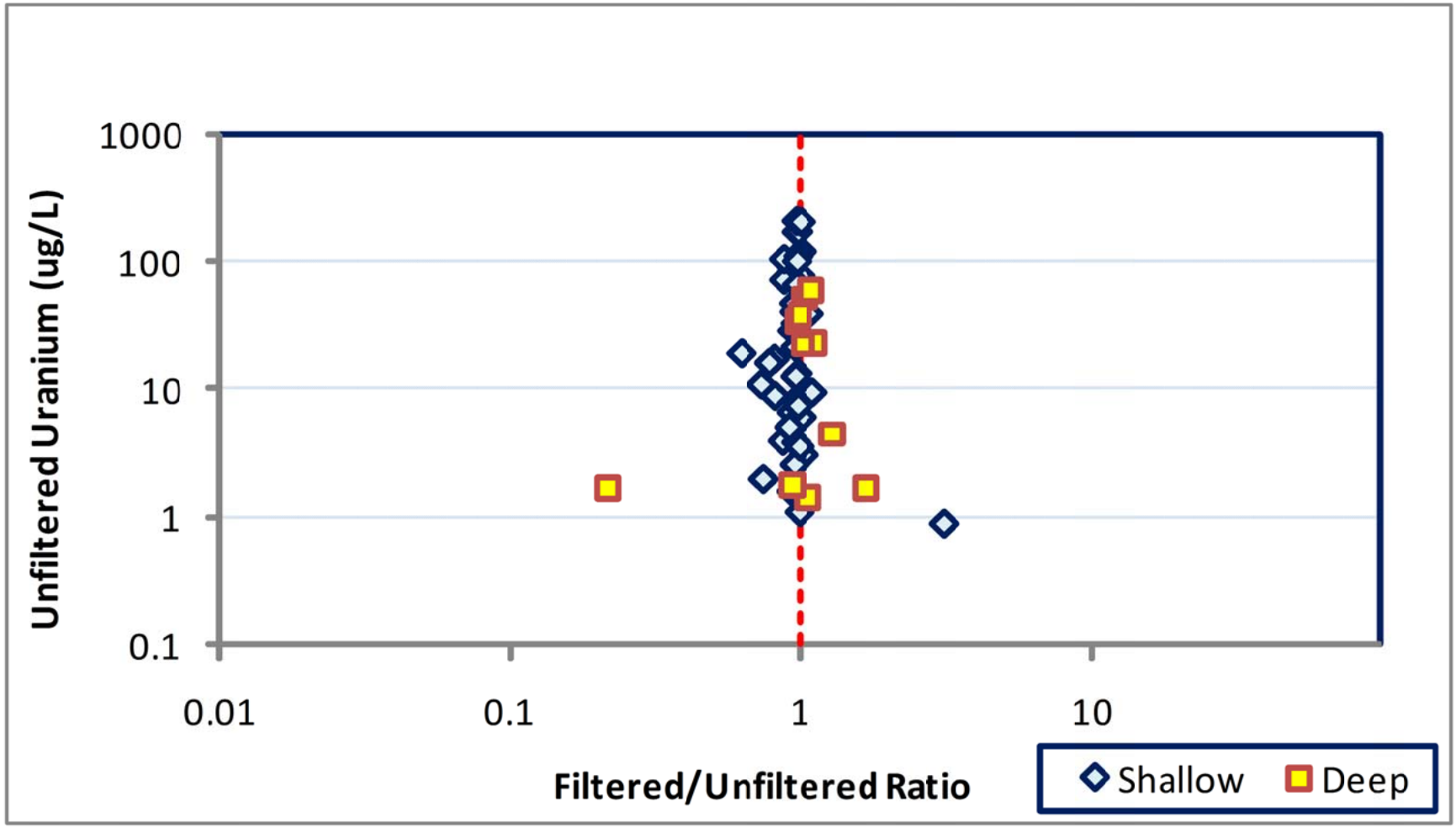
N
W E
S

^{234}U VS. ^{238}U ACTIVITIES IN 2011 FILTERED GROUNDWATER SAMPLES

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No.:
1/18/2012	NO SCALE	4-21

C:\CAD-GIS\Acad 2011\140416 Guterl\140416-01.dwg - Monday, 6/11/12 - 4:12 PM



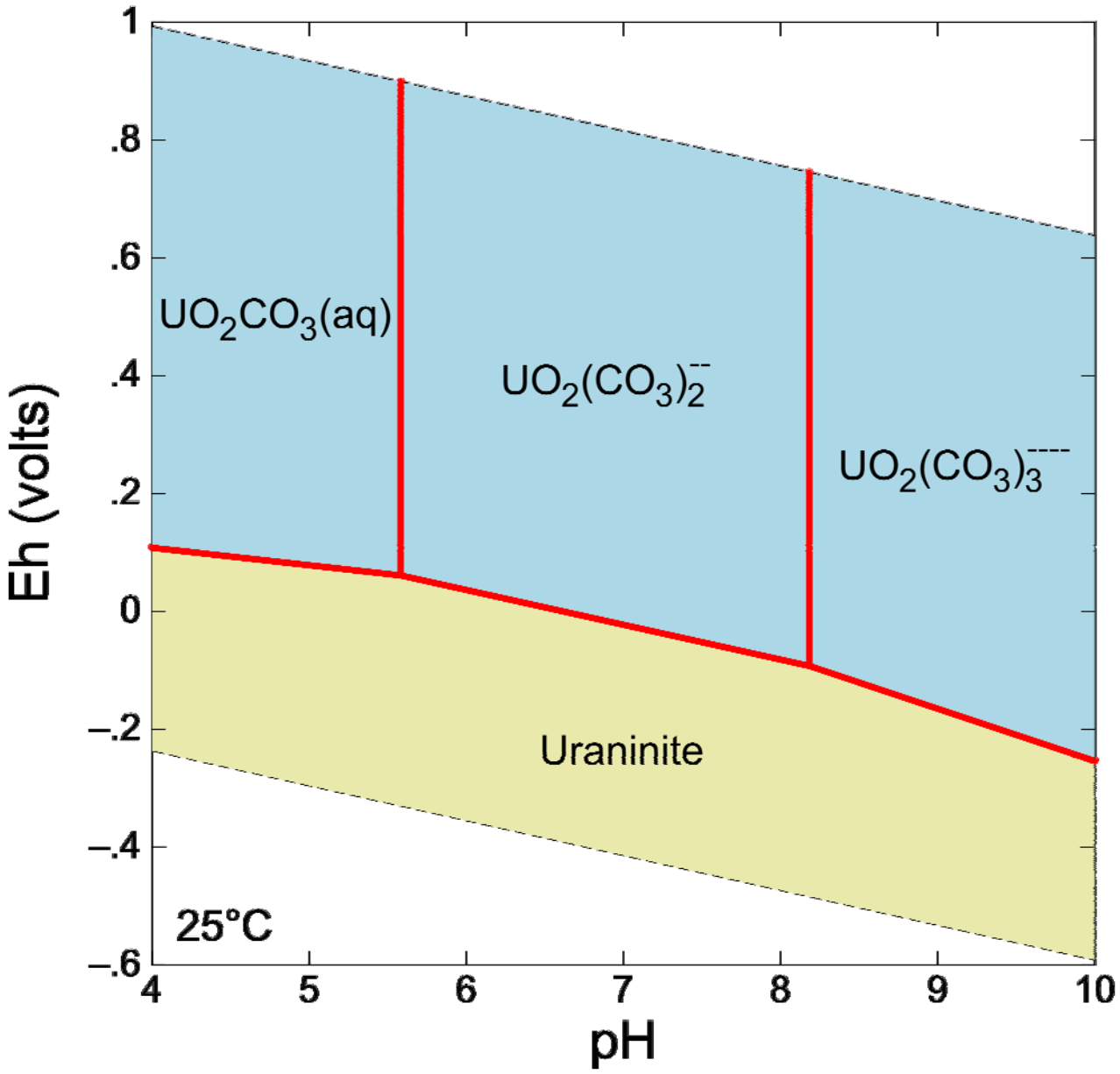
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

N
W
E
S

UNFILTERED URANIUM VS.
FILTERED/UNFILTERED RATIOS IN 2011
GROUNDWATER SAMPLES
GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No.:
1/18/2012	NO SCALE	4-22

C:\CAD-GIS\Acad 2011\140416 Guterl\140416-01.dwg - Monday, 6/11/12 - 4:12 PM



US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

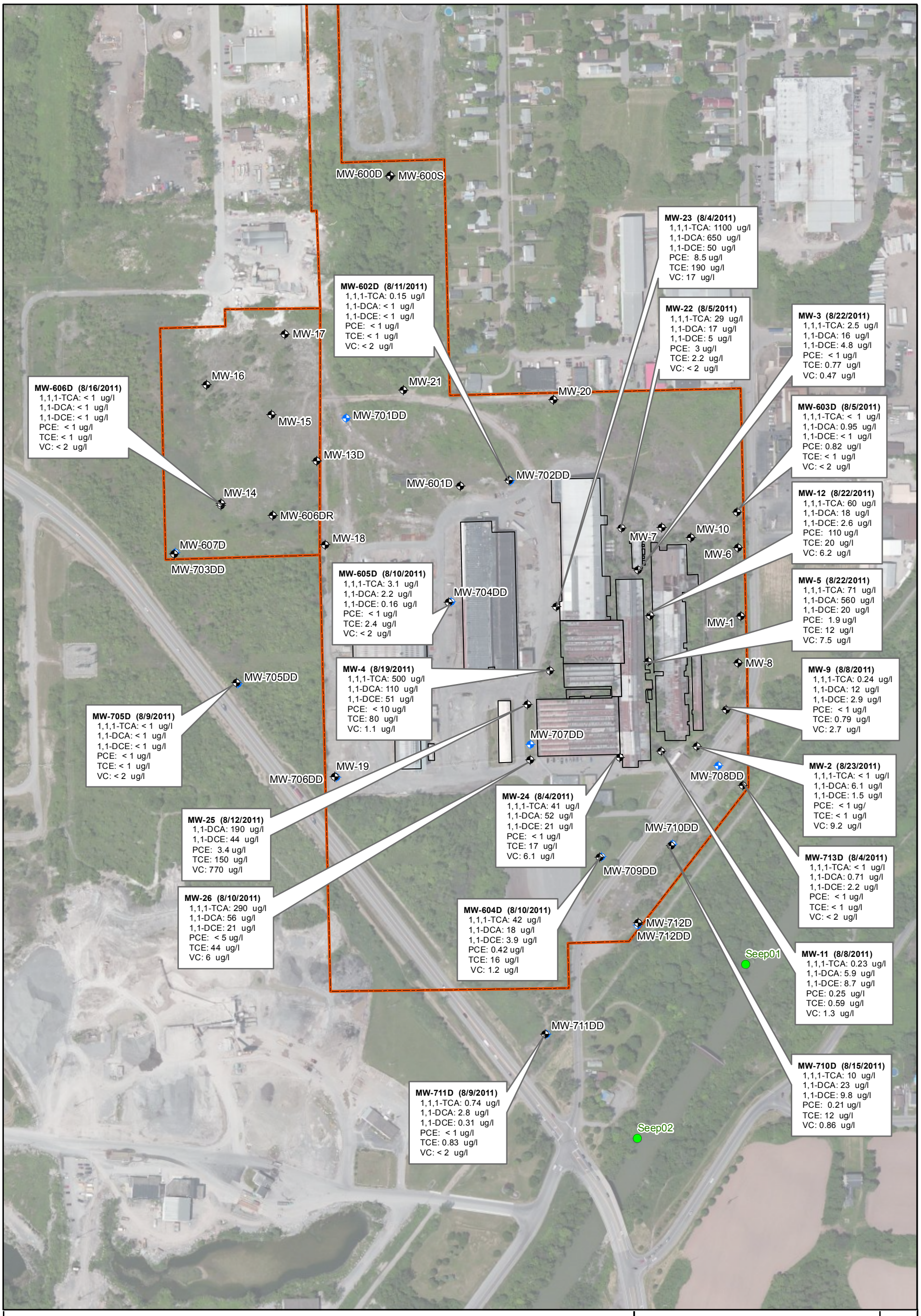
N
W E
S

URANIUM Eh-pH DIAGRAM

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No.:
1/18/2012	NO SCALE	4-23

C:\CAD-GIS\Acad 2011\140416 Guterl\140416-01.dwg - Monday, 6/11/12 - 4:12 PM



0 75 150 300 Feet

Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- GUTERL SITE BOUNDARY

µg/l = MICROGRAMS PER LITER
VOCS = VOLATILE ORGANIC COMPOUNDS

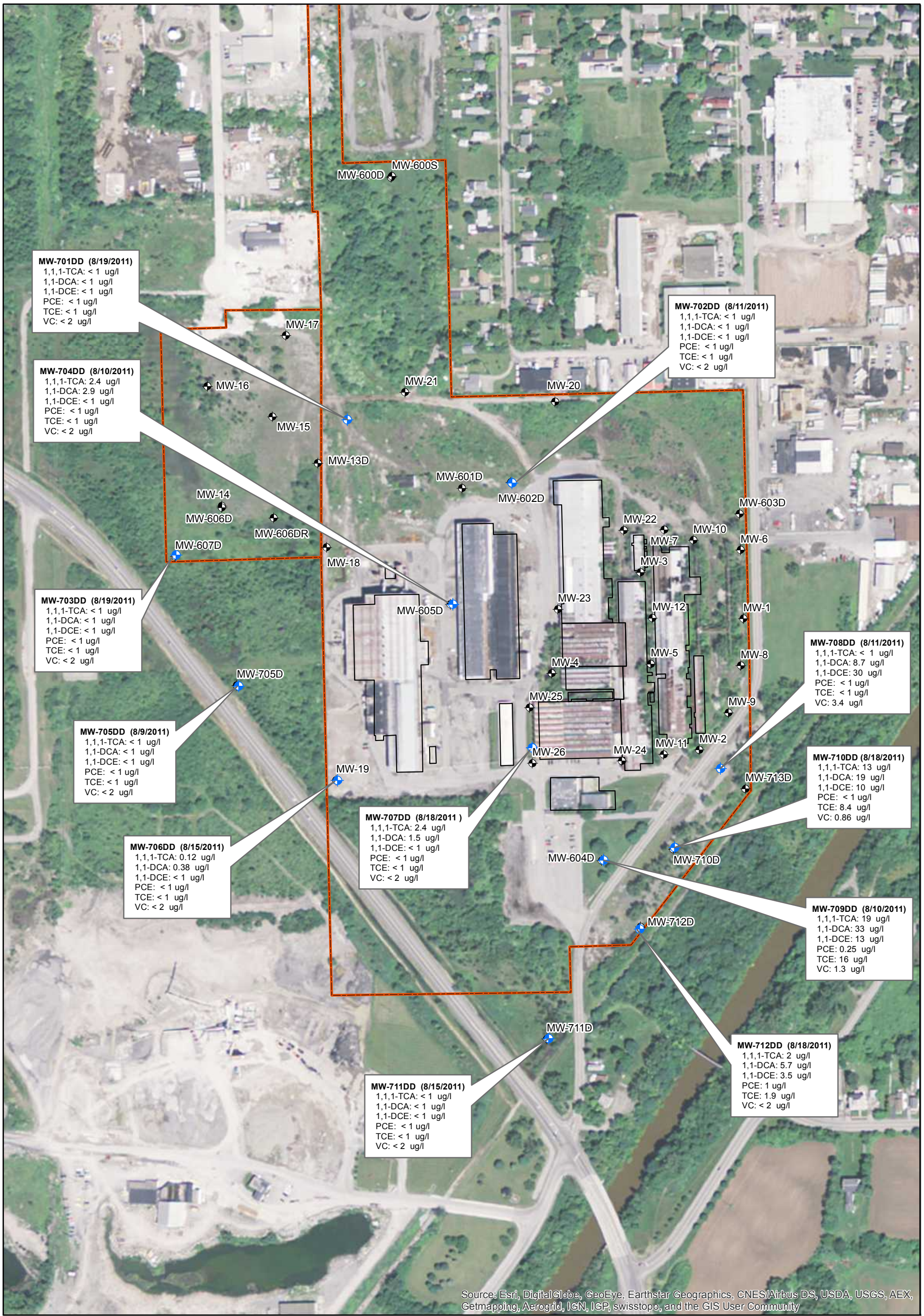
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

VOCS IN SHALLOW GROUNDWATER
(AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/18/2012	1 inch = 300 feet	4-24

Name: Fig 4-24_Guterl_104_GW_VOC_2011_Shallow_rev1.pdf



0 75 150 300 Feet

Legend

- DEEP WELL LOCATION
- SHALLOW WELL LOCATION
- SEEP LOCATION
- GUTERL SITE BOUNDARY

µg/l = MICROGRAMS PER LITER
VOCS = VOLATILE ORGANIC COMPOUNDS

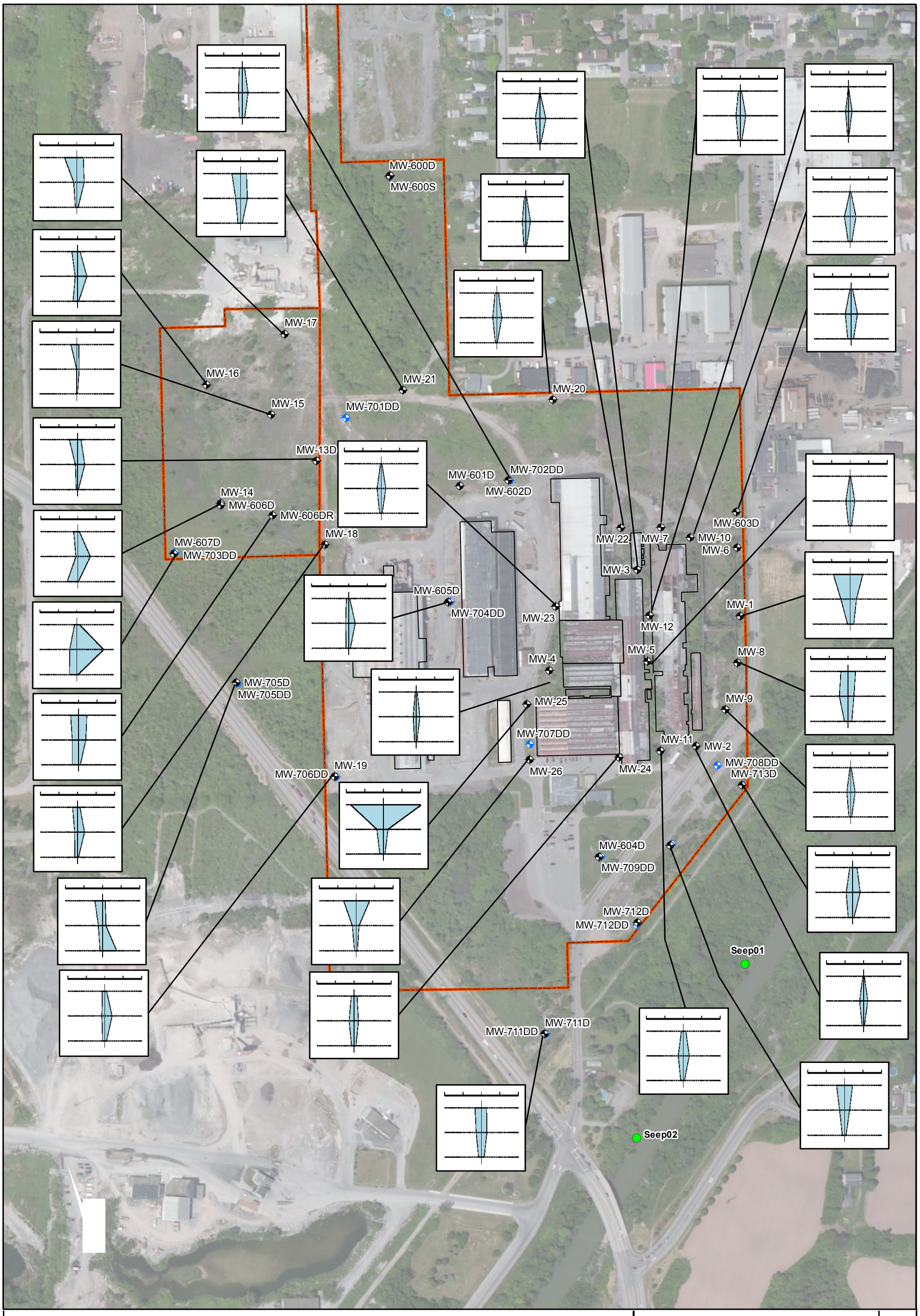
US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

VOCS IN DEEP GROUNDWATER
(AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
5/14/2015	1 inch = 300 feet	4-25

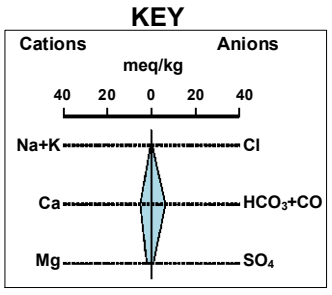
Name: Fig 4-25_Guterl_105_GW_VOC_2011_Deep_rev2



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- GUTERL SITE BOUNDARY

KEY



0 75 150 300 Feet

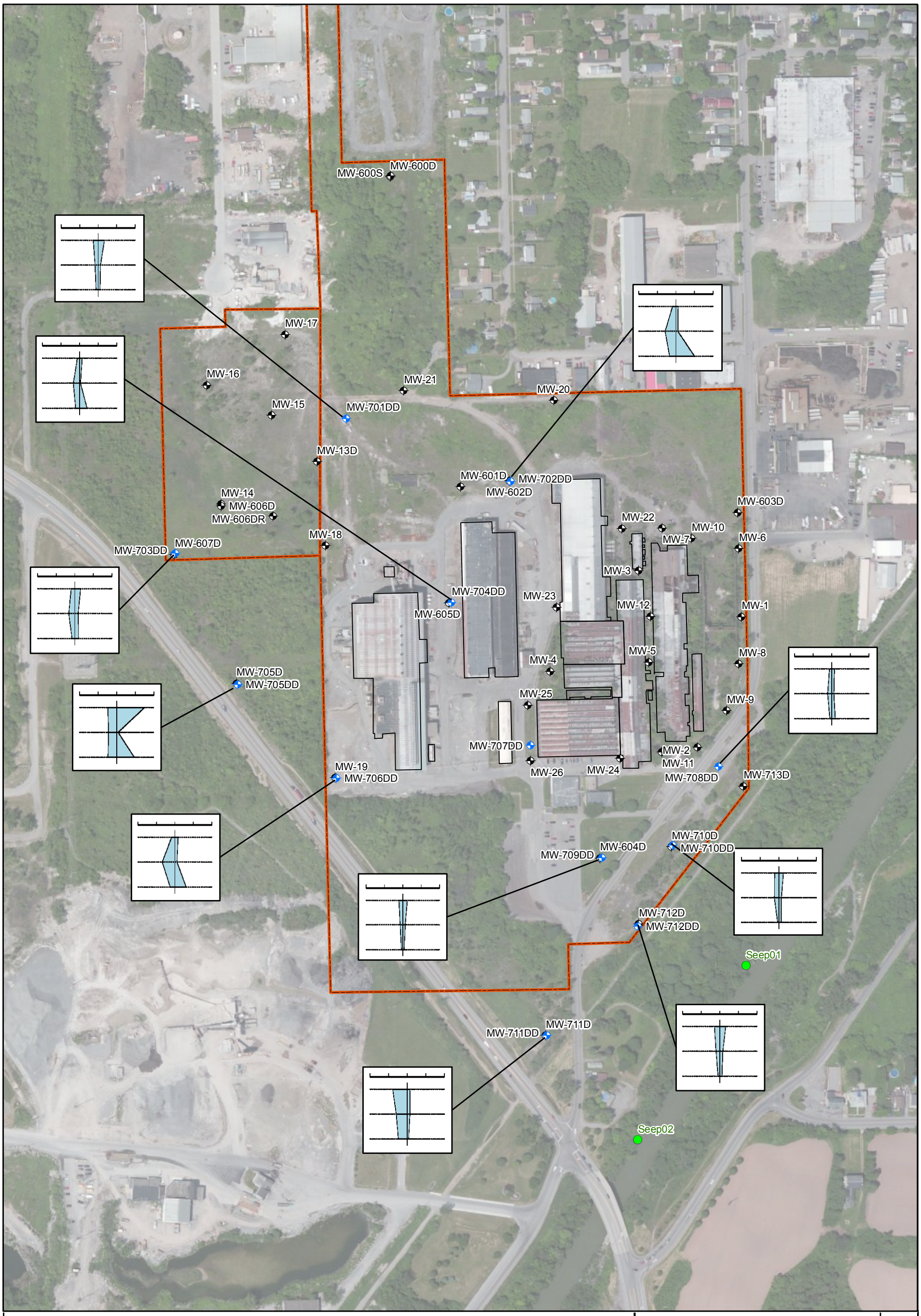
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

STIFF DIAGRAMS FOR SHALLOW WELLS
(AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/18/2012	1 inch = 300 feet	4-26

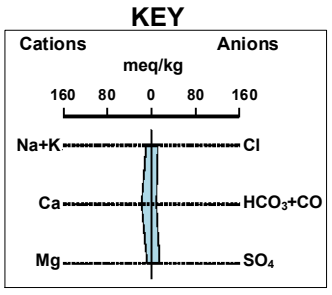
Filename: Fig 4-26 Guterl_097_Stiff_Shallow_2011.pdf



Legend

- DEEP WELL LOCATION
- SHALLOW WELL LOCATION
- SEEP LOCATION
- GUTERL SITE BOUNDARY

KEY



0 75 150 300 Feet

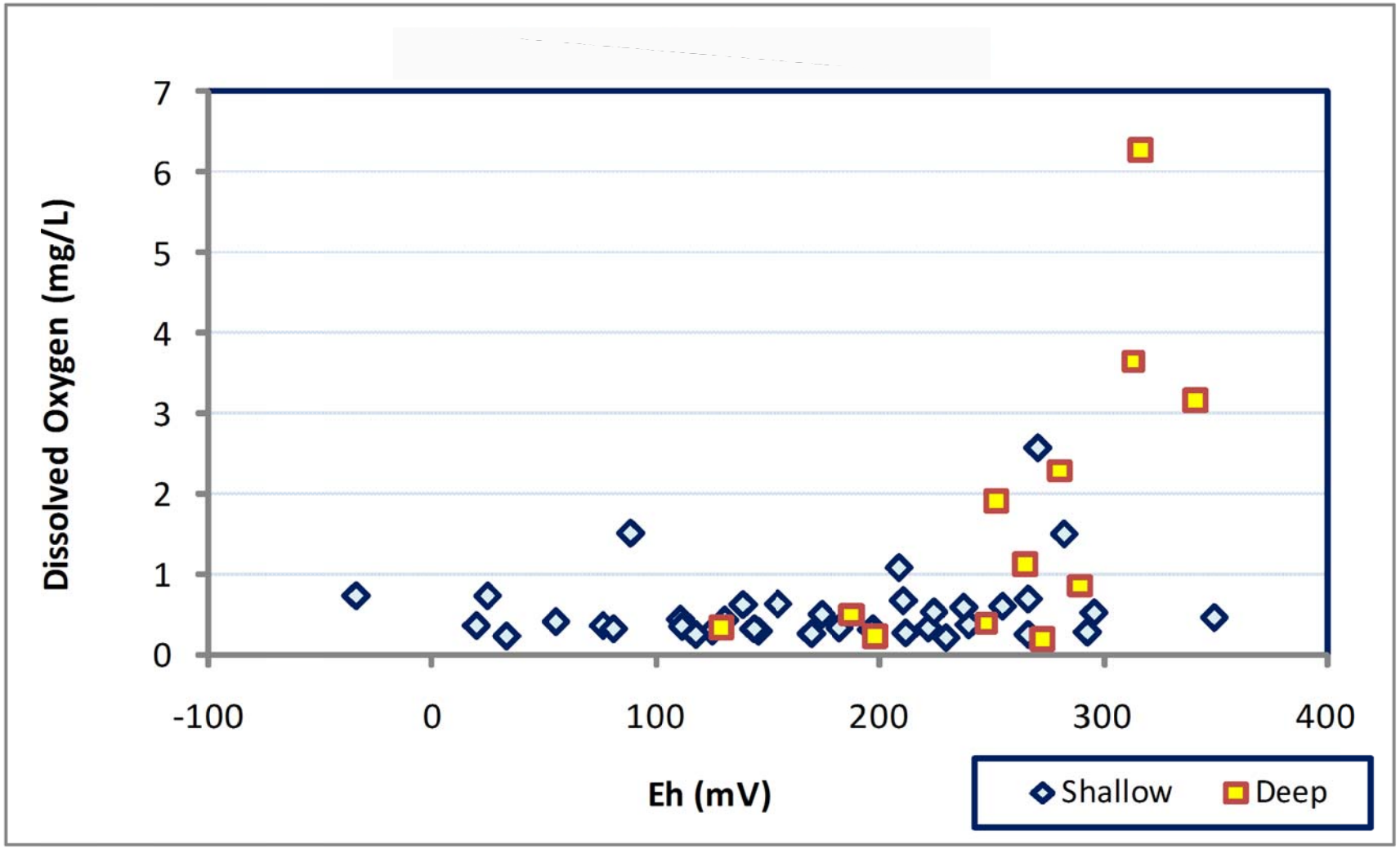
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

STIFF DIAGRAMS FOR DEEP WELLS
(AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/18/2012	1 inch = 300 feet	4-27

Filename: Fig 4-27 Guterl_098_Stiff_Deep_2011.pdf



US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

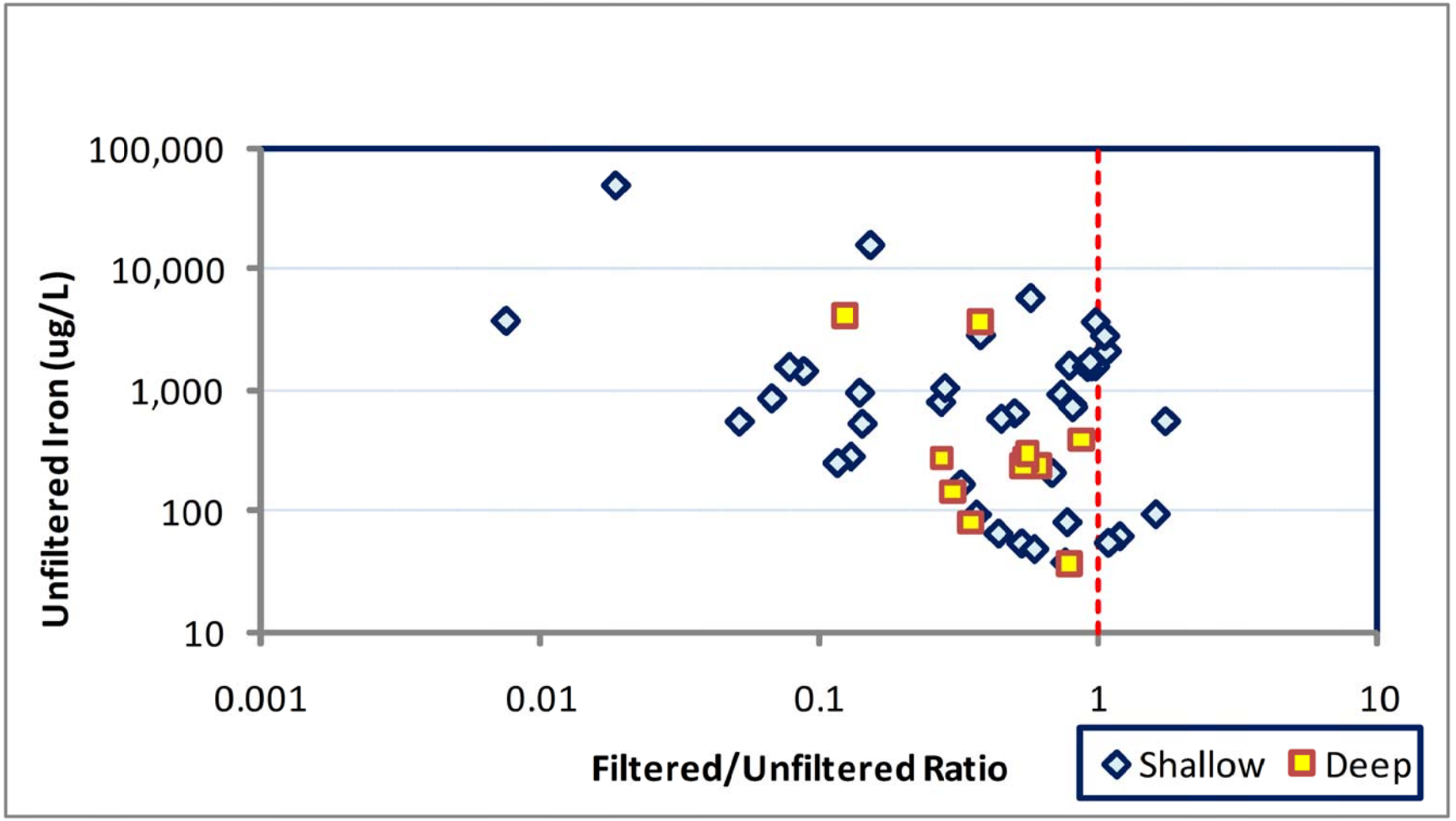
N
W
E
S

DISSOLVED OXYGEN VS. Eh

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No.:
1/18/2012	NO SCALE	4-28

C:\CAD-GIS\Acad 2011\140416 Guterl\140416-01.dwg - Monday, 6/11/12 - 4:12 PM



US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

N
W
E
S

UNFILTERED IRON VS. FILTERED/UNFILTERED RATIOS IN 2011 GROUNDWATER SAMPLES

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No.:
1/18/2012	NO SCALE	4-29

C:\CAD-GIS\Acad 2011\140416 Guterl\140416-01.dwg - Monday, 6/11/12 - 4:12 PM

Sewer #1 US-0001 (7/27/2011)
THORIUM-228: 0.27 pCi/g
THORIUM-230: 0.44 pCi/g
THORIUM-232: 0.22 pCi/g
URANIUM-234: 3.55 pCi/g
URANIUM-235: 0.2 pCi/g
URANIUM-238: 3.72 pCi/g

Sewer #1 UW-0001 (7/27/2011)
THORIUM-228: < 0.002 pCi/l
THORIUM-230: 0.02 pCi/l
THORIUM-232: < 0.009 pCi/l
URANIUM-234: 10.9 pCi/l
URANIUM-235: 0.61 pCi/l
URANIUM-238: 10.4 pCi/l

Sewer #1

Sewer #2

Sewer #2 US-0001 (7/27/2011)
THORIUM-228: 0.47 pCi/g
THORIUM-230: 0.32 pCi/g
THORIUM-232: 0.44 pCi/g
URANIUM-234: 4.37 pCi/g
URANIUM-235: 0.21 pCi/g
URANIUM-238: 4.77 pCi/g

Sewer #2 UW-0001 (7/27/2011)
THORIUM-228: < 0.05 pCi/l
THORIUM-230: < 0.005 pCi/l
THORIUM-232: < 0.005 pCi/l
URANIUM-234: 0.43 pCi/l
URANIUM-235: 0.03 pCi/l
URANIUM-238: 0.44 pCi/l

0 75 150 300 Feet

Legend

- SANITARY SEWER MANHOLE LOCATION
- GUTERL SITE BOUNDARY
- pCi/g = PICOCURIES PER GRAM
- pCi/l = PICOCURIES PER LITER

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

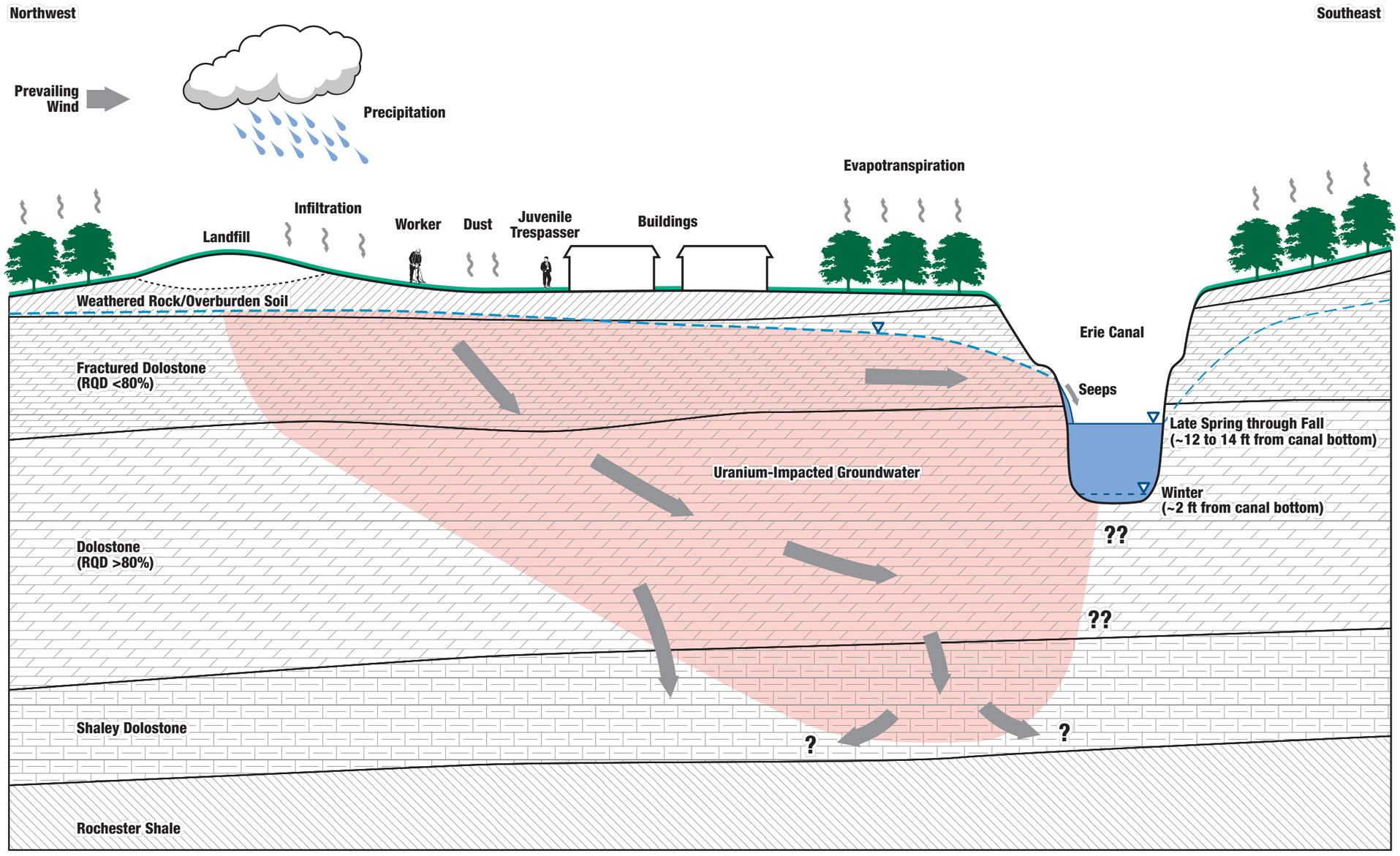
N W E S

SANITARY SEWER SAMPLING RESULTS
JULY 2011

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/14/2012	1 inch = 350 feet	4-30

Name: Fig 4-30_Guterl_106_DGIR_Sewer_Sample_Data_rev1.pdf



US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG®

REVISED CONCEPTUAL SITE MODEL

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:		Figure No.:
1/17/12	No Scale	5-1

s-140416-12/11-w

APPENDIX A

Daily Reports and Field Notes (Provided on CD)

APPENDIX B

Photographs
(Provided on Same CD as Appendix A)

APPENDIX C

Boring Logs
(Provided on Same CD as Appendix A)

APPENDIX D

Well Development Records
(Provided on Same CD as Appendix A)

APPENDIX E

Slug Test Data Plots
(Provided on Same CD as Appendix A)

APPENDIX F

Sample Collection Logs
(Provided on Same CD as Appendix A)

APPENDIX G

Analytical Data
(Provided on Same CD as Appendix A)

APPENDIX H

Data Validation Reports
(Provided on Same CD as Appendix A)

APPENDIX I

IDW Bill of Lading
(Provided on Same CD as Appendix A)

APPENDIX J

Geotechnical Report
(Provided on Same CD as Appendix A)

APPENDIX K

Historical Documents
(Provided on Same CD as Appendix A)

APPENDIX L

Evaluation of Uranium Concentration Trends

Appendix L

Evaluation of Uranium Concentration Trends

Time trends in uranium concentrations at 18 wells were evaluated using graphical and statistical methods to determine if any significant trends are present. The wells selected for evaluation had four or more sample events and uranium concentrations above 10 µg/L in one or more samples. This concentration screening value was developed in a previous evaluation based on $^{234}U/^{238}U$ ratios. Samples with uranium concentrations below 10 µg/L have isotopic ratios that indicate a natural background source, whereas most samples with uranium concentrations above 10 µg/L have ratios that suggest a local contaminant source for the majority of the detected uranium. An additional 12 wells that were sampled four or more times are part of the monitoring network. Samples from these wells have on average less than 10 µg/L U and are not discussed here because they most likely represent background concentrations.

The 18 impacted wells were grouped for plotting purposes into four categories based on ranges of uranium concentrations so that the trends can be clearly seen on the trend plots. These categories are 10-15, 15-30, 30-90, and >90 µg/L U, which allows three to six wells per plot, as shown on Figures 1, 2, 3, and 4. Most of the wells were sampled four times during November 2007; September 2009; September 2010; and August 2011. Three of the 18 impacted wells that appear on Figure 4 were also sampled during February 2012, yielding five samples for those wells.

The U concentrations shown on the plots were calculated by converting the activities (as pCi/L) of each of the ^{234}U, ^{235}U, and ^{238}U isotopes to mass (as µg/L) based on their specific activity constants (as Ci/g) and summed. Analyses of filtered (0.45 micron) samples were used in the evaluation. Duplicate results were averaged together for plotting purposes. Figures 1 through 4 do not appear to show any consistent trends.

An additional perspective is provided in Figure 5, which shows mean U concentrations for each of the four sample events calculated from the 18 impacted wells. Error bars are set equal to plus and minus one standard deviation for each sample event. This plume-wide mean perspective shows that the standard deviations in U concentrations at each sample event are of the same magnitude as the mean concentrations at each sample event, and that the differences in means between events is much less than the standard deviations of the individual means. These results imply that any trend in the plume-wide averages, if present, would not be detectable over the four-year monitoring period.

Kendall-Tau Test of Trend

Kendall's tau, which is equivalent to the Mann-Kendall test, is used here as a trend estimator as recommended by the EPA. It compares repeated measurements of an analyte concentration over time, and tests the null hypothesis that the measurements exhibit no temporal trend. It is a nonparametric test, which means that it is based on the direction of change in concentration (up or down) over time rather than the magnitude of the change over time.

To perform the test, the *signs* (positive for increases, negative for decreases) of all possible pairs of data points are summed. For instance, if there are four sequential measurements (1, 2, 3, and 4), then the signs of 1 versus 2, 1 versus 3, 1 versus 4, 2 versus 3, 2 versus 4, and 3 versus 4 are summed. If there is no real trend, then the number of positive and negative signs will be roughly equal, although some differences would be expected due to chance. However, if there are many more increases than decreases between the pairs, then a real upward trend is indicated, and if there are many more decreases than increases between the pairs, then a real downward trend is indicated.

The test returns a *tau* coefficient that equals the sum of the signs divided by the total number of sample pairs available. If the concentrations consistently increase at each successive sample event, then *tau* equals +1, if the concentrations consistently decrease at each successive sample event, then *tau* equals –1, and if the number of positive and negative signs are equal, than *tau* equals zero. For all other arrangements *tau* lies between −1 and 1. The test was performed at a 95 percent confidence level, at which there is only a five percent chance of incorrectly accepting the null hypothesis (no trend is present) when a trend actually is present.

Trends at all 30 wells (impacted and unimpacted wells sampled four or more times) were tested. Test results are shown in Table 1. Only 3 of the 30 wells showed significant trends, which are highlighted in bold. MW-3 is a background well with a significant downward trend, and MW-603D is a background well with a significant upward trend. One impacted well, MW-24, had a significant upward trend with concentrations that increased from 5.49 to 35.08 µg/L in the four successive samples. For an increasing or decreasing trend to be considered statistically significant at a 95 percent confidence level with only four samples, the concentrations must increase or decrease sequentially at all four sample events. With four rounds, there are only [½ $n(n\text{-}1)$] = six pairs of samples that can be compared for an increase or decrease over time. Four random increases in a row can be expected just due to chance with a probability of 1/6. With 30 wells, this should occur on average about [30 x 1/6] = five times due to chance. These results indicate that no statistically significant trends in uranium concentrations are detectable over the four-year monitoring period, with the possible exceptions of MW-3, MW-603D, and MW-24. For the remaining wells, no statistically significant trends in uranium concentrations

are detectable over the four-year monitoring period. However, it should be noted that four samples obtained over a 4-year period may be insufficient to detect upward or downward trends in wells with shallow slopes.

Table 1. Kendall-Tau Trend Test Results

Well	Tau	Direction	Significant?	Category (U range in ug/L)
MW-1	0.67	Up	No	<10
MW-14	0	None	No	<10
MW-15	-0.67	Down	No	<10
MW-17	0.67	None	No	<10
MW-21	-0.67	Down	No	<10
MW-23	-0.67	Down	No	<10
MW-3	**-1.0**	**Down**	**Yes**	**<10**
MW-5	0	None	No	<10
MW-6	0	None	No	<10
MW-600D	0	None	No	<10
MW-603D	**1.0**	**Up**	**Yes**	**<10**
MW-8	0.33	Up	No	<10
MW-19	0.33	Up	No	10-15
MW-20	0	None	No	10-15
MW-606DR	0	None	No	10-15
MW-607D	0.33	Up	No	10-15
MW-11	0.33	Up	No	15-30
MW-16	0.33	Up	No	15-30
MW-2	0.33	Up	No	15-30
MW-24	**1.0**	**Up**	**Yes**	**15-30**
MW-601D	-0.33	Down	No	15-30
MW-9	0	None	No	15-30
MW-13D	0	None	No	30-90
MW-22	0	None	No	30-90
MW-4	0	None	No	30-90
MW-18	-0.67	Down	No	>90
MW-26	-0.60	Down	No	>90
MW-602D	0	None	No	>90
MW-604D	-0.60	Down	No	>90
MW-605D	-0.33	Down	No	>90

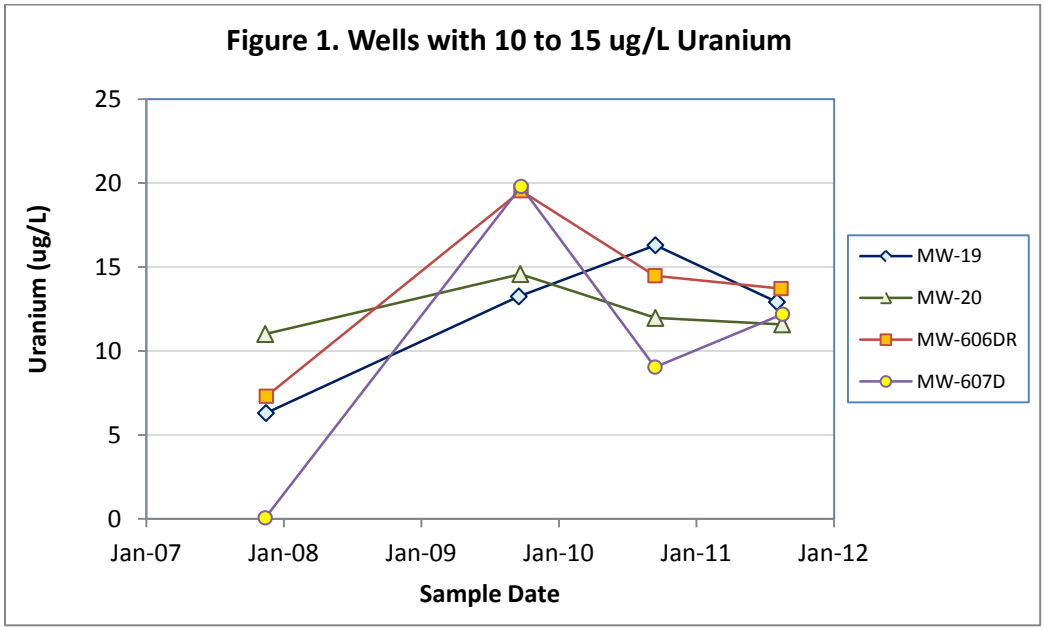


Figure 1. Wells with 10 to 15 ug/L Uranium
Uranium (ug/L)
25
20
15
10
5
0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Sample Date
MW-19
MW-20
MW-606DR
MW-607D

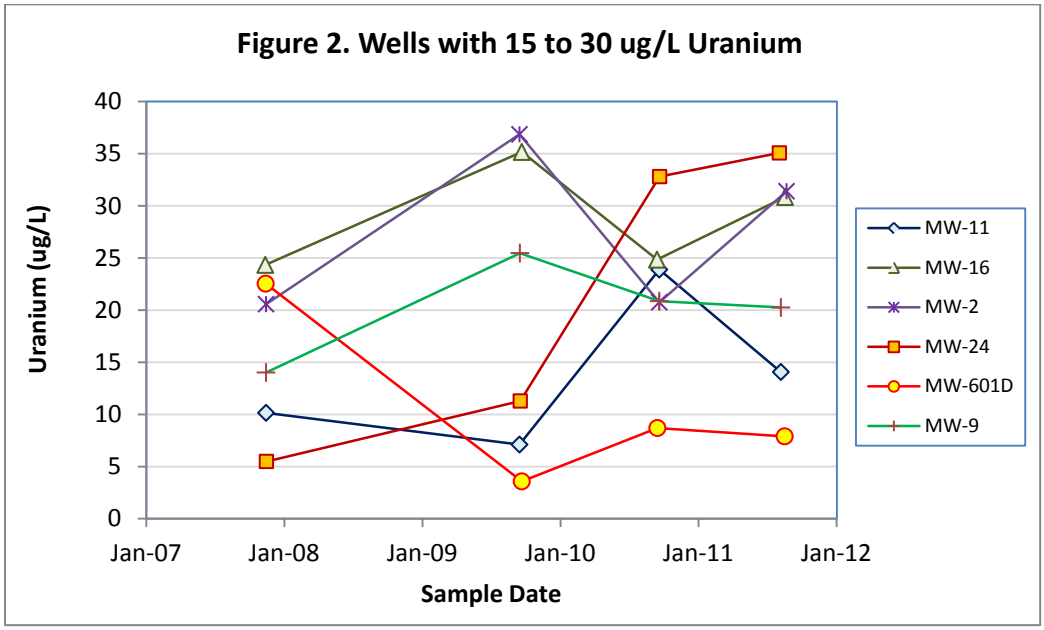


Figure 2. Wells with 15 to 30 ug/L Uranium
Uranium (ug/L)
40
35
30
25
20
15
10
5
0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Sample Date
MW-11
MW-16
MW-2
MW-24
MW-601D
MW-9

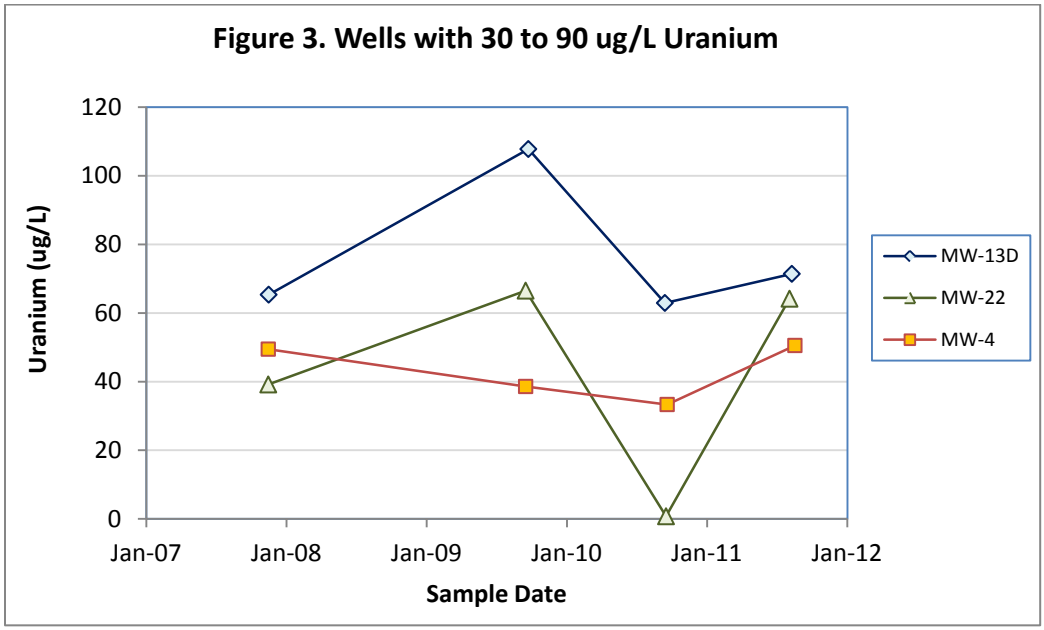


Figure 3. Wells with 30 to 90 ug/L Uranium
120
100
80
60
40
20
0
Uranium (ug/L)
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Sample Date
MW-13D
MW-22
MW-4

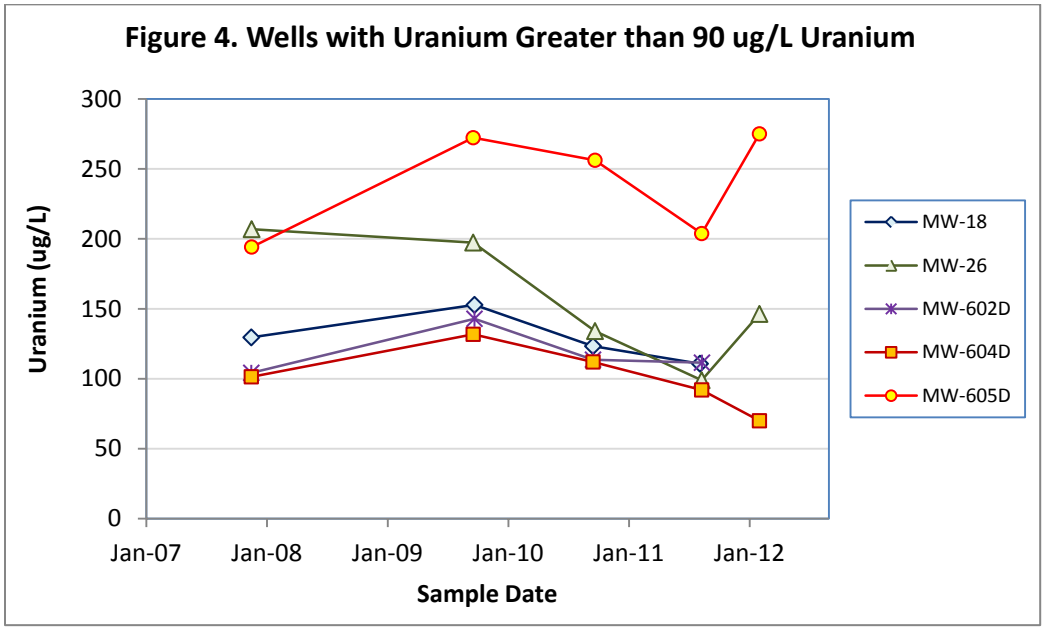


Figure 4. Wells with Uranium Greater than 90 ug/L Uranium
300
250
200
150
100
50
0
Uranium (ug/L)
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Sample Date
MW-18
MW-26
MW-602D
MW-604D
MW-605D

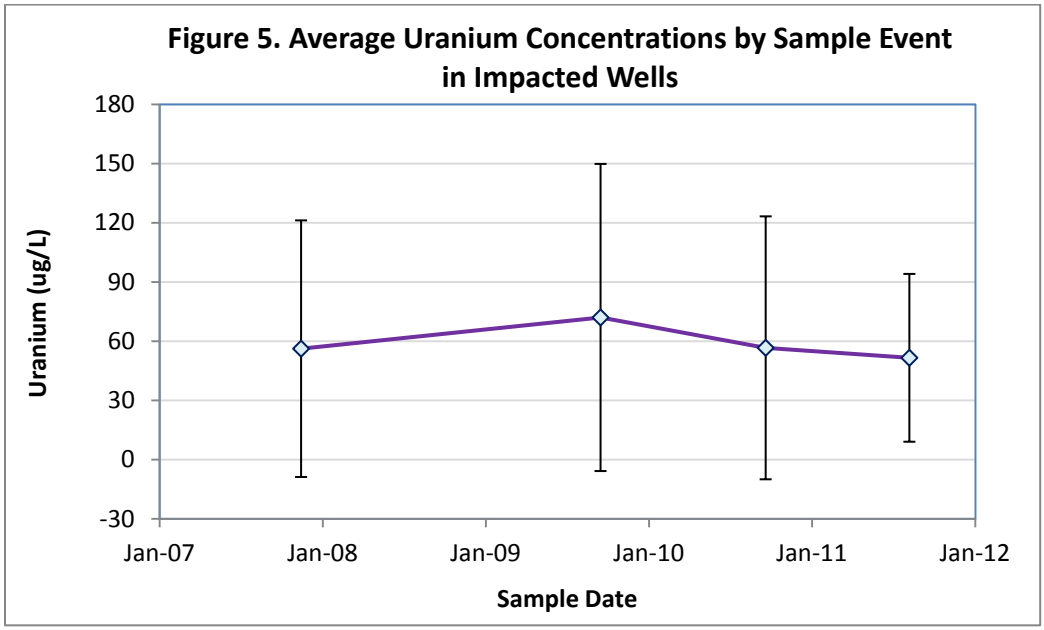


Figure 5. Average Uranium Concentrations by Sample Event in Impacted Wells
Uranium (ug/L)
180
150
120
90
60
30
0
-30
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Sample Date

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

FINAL
TECHNICAL MEMORANDUM

Data Gap Investigation to Support the Feasibility Study
Former Guterl Specialty Steel Corporation
Formerly Utilized Sites Remedial Action Program (FUSRAP) Site
Lockport, New York

APPENDIX A

Daily Reports and Field Notes

(Provided on CD)

U.S. Army Corps of Engineers

Buffalo District

12 May 2015

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number __2_ Page 1 of _2__
DAILY LOG OF CONSTRUCTION	Date 6/14/11
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: Calm, slight breeze 55-70, mist to sunny

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No – PM Karl Van Keuren discussed charging overtime with Nothnagle drilling for extended work days. Rate is $30/hr per person – will be used on an as needed basis – completing almost finished well, etc. to help production rate. Will not go over 2hr/day for HS concerns since drillers drive about 1 hour/day. No affect to USACE – Shaw cost management of project.
-

Activities In Progress:

- Cleared utilities with Allvac Maintenance Supervisor, air knifed in new locations at 701, 703, and 709, and set casing at 701DD.
- Did location recon at 705, 710,711, 712, and 713. All appear reachable other than 713. No good access point and large amount of clearing involved.
- PM will call in offsite dig locations after finalized (onsite already called in).

Were there any Delays in Work Progress today?

- Yes, Reg Buri was delayed from clearing 701DD by staff meetings.
- Drillers didn't have acetate liners for split spoons.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- none

Safety Inspection / Safety Meetings:
- Tailgate, AHA, JSA, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- Drill rig and other equipment surveyed for radiological contamination,

ACTIVITY STAR/FINISH
- Started drilling today.

QC REQUIREMENTS

- - Need undisturbed geotech samples for Oak Ridge Lab leaching studies for U to GW, contactor to macro-core stratigraphy in unconsolidated, then push split-spoon with liner where Shaw wants geotech sample.

QA/QC PUNCH LIST
-none

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1700 (drillers and well installation)- no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
none

Contractor Certification : On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _061511__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/15/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: Calm, sunny 55-80 F

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:
- Soil sampling, setting and grouting 4" steel casings, begin bedrock coring.

Were there any Delays in Work Progress today?
- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately. Noise monitoring performed at rig during operations.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Sample soil, set and grout casings at 706 DD and 709 DD. Begin bedrock coring at 701 DD during early PM.

QC REQUIREMENTS
- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End – open

LABOR HOURS
Start 0700 - End 1630 (drillers and well installation)- no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification : On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date Kevin C. Cronin	Superintendent's Initials and Date

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _061611__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/16/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; sunny, 55-70, PM; becoming cloudy, rain showers after 1500.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:
- Utility clearance, continue/finish bedrock coring, set groundwater monitoring well.

Were there any Delays in Work Progress today?
- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Clear utilities at 702 DD and 711 D, DD. Continue coring at 701 DD, finish in PM at ~80' BGL.
- Plug back 701 DD corehole with bentonite to ~41' BGL, set 2" PVC screen from ~30' – 40'. Well construction documented separately.

QC REQUIREMENTS
- -None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End – open

LABOR HOURS
Start 0700 - End 1700 (drillers and well installation)- no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _061711__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/17/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly cloudy, slight breeze 65-70, PM; same, light showers

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
May have increased number of flush mounted roadboxes installed at Reg Buri's request due to plant traffic.

Activities In Progress:

- Began coring bedrock at 709 DD, suspended due to water coming back to surface; regrouted borehole with additional grout and will set over the weekend. Cleared 711 D, DD and began clearing 705 D, DD. Sampled soils at 704 DD and 707 DD and collected 3" splitspoon samples.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
-

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1400 (drillers)- no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification : On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _062011__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/20/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, slight breeze 65°-75° F, PM; Partly sunny, 80° F, breezy

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Restarted coring bedrock at 709 DD (suspended due to water coming back to surface 06/17/11; regrouted) Cored from ~10' – 80' BGL. Plugged back with bentonite chips to ~48' BGL – will hydrate overnight and begin well install 6/21/11 am. Cleared 710 D, DD. UFPO called in by Karl V. for 705, 708, 710 & 711 locations.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – no USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1630 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _062111__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/21/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, slight breeze 65°-75° F, PM; Mostly cloudy, 85° F, humid, breezy

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Cut 4" casing at 709 DD and installed 2" PVC monitoring well at ~ 41' bgl (well construction diagram completed). Started coring bedrock to ~10' bgl at 707 DD but was suspended due to water coming back to surface. Regrouted from surface to ~10'bgl. Moved to 706 DD to begin coring there but coring also suspended due to water coming back to surface. Regrouted from surface to ~10'bgl. Moved to 706 DD and cored from ~8' – 38' bgl. Cleared 703 DD and located 708 DD and 710 D, DD locations on east side of Ohio Street.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – no USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, forklift awareness/procedures, hot work permit for 709 DD casing cut down, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1600 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _062211__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/22/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, rain showers, light breeze 65°-75° F, PM; Mostly cloudy, 85° F, humid, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Continued coring at 706 DD and cored from ~38' – 50' bgl (10' extra to look for deeper fracture zone). Plugged back to ~41' with bentonite and installed monitoring well – documented separately. Move drilling rig back to 704 DD to continue coring begun 6/21/11. Cored to ~40' bgl and set well from ~29'-39' bgl after consultation with K. Van Keuren and V. Tandon. Will complete 6/23/11 am. Premier Locating at Allvac in pm to locate utilities for offsite locations.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected, however rain fell in the morning.

Verbal Instructions given by Government:
- None – no USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, hot work permit for 704 DD casing cut down, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1630 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _062311__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/23/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly sunny, light breeze 65°-75° F, PM; Mostly cloudy, 85° F, humid, breezy, rain showers after 1510, thunderstorms

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
Began using 8" temporary casing and running 6" tricone roller bit to approximately 10' bgl to adequately seat and grout 4" permanent casing in boreholes.

Activities In Progress:

- Soil sampled (Macrocore® and 3" ssp samples for geotech analysis) and ran 8" temporary casing and set and grouted 4" permanent casings at 702 DD, 711DD and 711 D. Moved coreboxes back to decon pad area.

Were there any Delays in Work Progress today?

- No, PM thunderstorm arrived after casing work was completed at 1530.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – no USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, hot work permit for 702 DD, 711 D, DD casings, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1545 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _062411__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/24/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, showers/rain/thunderstorm, breezy 65°F, PM; Mostly cloudy, 70° F, humid, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Drilled out grout from 4" casing at 702 DD and cored from 10' – 40' bgl. Installed 702 DD groundwater monitoring well (documented separately). Moved 702 DD coreboxes back to decon pad area. Cleared utilities at 708 DD and 710 D, DD.

Were there any Delays in Work Progress today?

- Yes; AM thunderstorm/heavy rain arrived after 0845 –lost ~45 minutes waiting for storms to pass.

General Comments:
- No elevated radiological readings detected however rain event during work.

Verbal Instructions given by Government:
- None – no USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End – open

LABOR HOURS
Start 0700 - End 1315 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR) DAILY LOG OF CONSTRUCTION	Report Number _062711__ Page 1 of _1__ Date 06/27/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, light breeze 65°-75° F, PM; Sunny, 80° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Soil sampled (Macrocore® and 3" ssp sample for geotechnical analysis) and ran 8" temporary casing and set and grouted 4" permanent casing at 708 DD. Collected Macrocore® soil samples and ran 8" temporary casing and set and grouted 4" permanent casings at 710D and 710 DD. Moved back to 707 DD to resume coring but had water leaking out around 4" casing again. Pulled 4" casing, drove 8" temporary casing and rollerbit (6") to ~10' bgl and grouted after installing ~11' length of 4" casing into borehole. Work on well completion at 702 DD location. (Driller has to leave early today for doctor's appt.).

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – Mark , Jeff Hall and Bill Fredricks (USACE personnel) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, hot work permit for 708 DD, 710 D, DD casings, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1600 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _062811__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/28/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, breezy 65°-75° F, PM; Mostly sunny, 85° F, humid, windy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
Flush mounted protective casing requested for well 708 DD instead of stickup casing. Possible that some restoration work will be needed on rutted lawn leading into 707 DD location (multiple moves on and off location due to leaking surface casing work).

Activities In Progress:

- Completed coring at 708 DD, cored from ~5' – 40' bgl and installed monitoring well – documented separately. Move CME 85 drilling rig back to 707 DD to continue coring begun 6/21/11. Cored to ~30' bgl. Will complete coring and well installation 6/29/11 am. Nothnagle brought CME 55LC ATV rig onsite this am, moved to 705 D, DD location.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, hot work permit for 708 DD casing cut down, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1545 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _062911__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/29/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, breezy 65° F, PM; Mostly sunny, 70° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
Possible that some restoration work will be needed on rutted lawn leading into 707 DD location (multiple moves on and off location due to leaking surface casing work, well drilling and installation).

Activities In Progress:

- Completed coring at 707 DD, cored from ~30' – 40' bgl and installed monitoring well – documented separately. Utilized CME 55LC ATV rig to set 4" casings at 705 D and 705 DD locations. Cored bedrock from ~7' – 32' at 710 DD with CME 85 rig.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, hot work permit for 707 DD casing cut down, 705 D and DD casings, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies. Noted grout overspray at 705 location on Daily Safety Inspection Report.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1545 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _063011__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/30/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm 65° F, PM; Sunny, 80° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Completed coring at 710 DD, cored from ~32' – 42' bgl and installed monitoring well – documented separately. Moved CME 85 to 703 DD location and soil sampled (Macrocore & 3" ssp) and set and grouted 4" casing to ~5' bgl. Utilized CME 55LC ATV rig to begin coring at 705 DD location but after 1st run (from ~5' – 10' bgl) in weathered bedrock 4" casing was leaking. Regrouted that casing (now called 705 D) and moved to other 4" casing (now called 705 DD) and cored bedrock from ~10' – 40' and installed monitoring well – documented separately.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, hot work permit for 703 DD casing cut down, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1630 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _070111__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/01/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm 70° F, PM; Sunny, 80° F, calm.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Resumed coring with CME 55LC at 705 D; cored from ~10' – 20' bgl and installed monitoring well – documented separately. Moved ATV rig to 703 DD location for the holiday weekend. Moved CME 85 rig to begin coring at 710 D location and cored bedrock from ~7' – 20' and installed monitoring well – documented separately.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies. Air sampling performed at 710 D location only as the generator's pull cord broke when starting sampling at 705 D in am. Hertz onsite at 1130 to replace pull cord. Sampling begun thereafter.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1215 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _070511__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/05/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm 75° F, PM; Partly to mostly sunny, 75°-80° F, calm.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Began coring with CME 85 at 711 DD; cored from ~7' – 40' bgl and installed monitoring well – documented separately. Moved to ATV rig parked at 703 DD location and begin coring. Cored bedrock from ~5' – 40' and installed monitoring well – documented separately.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies. Air sampling performed at 711 DD location but the generator would cut out at times – concluded it was from vapor lock from high temperature. After cooling down a short while, generator would start right back up.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1630 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR) DAILY LOG OF CONSTRUCTION	Report Number _070611__ Page 1 of _1__ Date 07/06/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy 70° F, PM; Cloudy with scattered showers, becoming sunny, humid, 80° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Began coring with CME 85 at 711 D; cored from ~7' – 20' bgl and installed monitoring well – documented separately. Worked on well pads at 711D and DD, 703 DD, and 702 DD. Began well development; developed 708 DD and 709 DD - documented separately.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies. Air sampling performed at 711 D location..

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011 at 701 DD, finished 07/06/11 at 711 D. No access granted for 712 or 713 clusters as of today.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1545 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _070711__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/07/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy 70° F, PM; Mostly cloudy, humid, 80° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Continued well development; developed 710 D and 710 DD (both completed), 707 DD (drying out), 706 DD (drying out) and 704 DD (completed) - documented separately. Both Nothnagle drilling rigs were radiologically scanned out and released offsite. 706 DD and 707 DD will be revisited 07/08/11.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011 at 701 DD, finished 07/06/11. Well development began 07/06/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 06/13/11
End - open

LABOR HOURS
Start 0700 - End 1530 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage.

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _070811__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/08/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm 70° F. PM; Mostly sunny, becoming humid, 80° F, calm.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Continued well development; developed 707 DD (drying out), 706 DD (drying out), 711 D and DD (both drying out) and 705 D and DD (both drying out). These locations will be revisited 07/11/11.Trent Richards continues scanning bedrock cores begun 07/07/11 at the decon pad. Richards/Cronin/Legeza attended Shaw/USACE conference call in AM.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Well development began 07/06/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 06/13/11
End - open

LABOR HOURS
Start 0700 - End 1530 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage.

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _071111__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/11/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy 70° F. PM; Mostly sunny, humid, 85° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Continued well development; completed 701 DD and 703 DD – documented separately. Developed 702 DD (drying out), 706 DD (drying out), 711 D and DD (both drying out) and 705 D and DD (both drying out). Well 707 DD hadn't recharged much over the weekend and had little groundwater in it. These locations will be revisited 07/12/11.Trent Richards continues scanning bedrock cores begun 07/07/11 at the decon pad. Nothnagle personnel will not be onsite 7/12/11 due to a family funeral – Shaw personnel will continue development with Nothnagle's Whale pump.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Well development began 07/06/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 06/13/11
End - open

LABOR HOURS
Start 0700 - End 1530 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage.

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _071211__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/12/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy 75° F. PM; Sunny, humid, 85° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Continued well development; completed 706 DD – documented separately. Developed 702 DD (drying out), 711 D and DD (both drying out) and 705 D and DD (both drying out). Well 707 DD hadn't recharged much overnight and had little groundwater (<0.4 gal.) in it. These locations will be revisited 07/13/11.Trent Richards completed scanning bedrock cores, begun 07/07/11 and performed a release survey on the rented generator. Generator was returned to Hertz this am.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Well development began 07/06/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 06/13/11
End - open

LABOR HOURS
Start 0700 - End 1530 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage.

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _071311__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/13/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy 70° F. PM; Mostly sunny, 80° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Continued well development. Developed 702 DD (drying out), 711 D and DD (both drying out) and 705 D and DD (both drying out). Well 707 DD hadn't recharged much overnight and groundwater elevation changed only ~0.12 foot. These locations will be revisited 07/14/11.Trent Richards completed release surveys on two high-vol air samplers which will be returned to Shaw's Findlay, Ohio shop.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies. Began bi-monthly Project Safety Inspection Report. Additional supplies ordered for office trailer.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Well development began 07/06/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 06/13/11
End - open

LABOR HOURS
Start 0700 - End 1430 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage.

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _071411__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/14/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm 70° F. PM; Sunny, 85° F, somewhat breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Continued well development. Developed 702 DD (drying out), 711 D and DD (both drying out) and 705 D and DD (both drying out). Well 707 DD hadn't recharged much overnight and groundwater elevation changed only ~0.04 foot from July 13, 2011am. These locations will be revisited 07/15/11. Attempted to locate 712 and 713 well locations on NYS Erie Canal parcel – looks improbable to clear/locate suitable drilling locations due to surface conditions (boulders, excavated rock piles and berms, steep slopes, narrow property dimensions).

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies. Completed bi-monthly Project Safety Inspection Report. Fire extinguisher purchased and installed in office trailer.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Well development began 07/06/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 06/13/11
End - open

LABOR HOURS
Start 0700 - End 1530 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage.

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _071511__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/15/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy 60° F. PM; Sunny, 85° F, somewhat breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Finished well development. Developed 702 DD (drying out), 711 D and DD (both drying out) and 705 D and DD (both drying out). Development task completed – documented separately. Well 707 DD hadn't recharged much overnight and groundwater elevation changed only ~0.11 foot from July 14, 2011am. Nothnagle's 250-gallon poly tank was cleaned out and radiologically scanned for release. Nothnagle transports 16 unused 55-gal. drums offsite (8 remain at decon pad for future use). 58 drums (all labeled) of IDW are at decon pad area.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Well development began 07/06/11 and was completed 07/15/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 06/13/11
End – 07/15/11 (Nothnagle Drilling to remobe late July – early August for drilling of 712 and 713 locations [2 wells each]).

LABOR HOURS
Start 0700 - End 1415 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage.

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _071811__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/18/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, breezy 60° F., rain showers. PM; Mostly sunny, 87° F, humid, somewhat breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Searched for City of Lockport Sanitary Sewer manholes to be sampled; unable to locate along Ohio Street and inside the eastern boundary of the Excised Area. Called Al Campisano (City of Lockport Water & Sewer) to assist in locating these structures. Staked 712 and 713 locations as per Karl VanKeuren's location map. UFPO request will be made when locations are approved by the USACE.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Located 713 D and DD but may need to move staked 712 locations northward to be on AllVac property.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _071911__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/19/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy 70° F., PM; Mostly sunny, 87° F, humid, somewhat breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Met with Rolando Moreno, CE (City of Lockport Eng. Dept.) to determine locations of Sewer Sampling points. City personnel haven't been able to locate sample Location #2 in years (paved over?). Used metal detector to locate possible location in middle of Ohio St. Direction will be needed on how to proceed with this sample location.
- Restaked 712 and 713 locations to avoid property lines as per latest GPS location map received by Trent Richards. UFPO request will be made when locations are approved by the USACE.
- Trent Richards traveled to Nothnagle Drilling to perform additional scans requested by Jim Langsted on the 250-gallon poly tank that was cleaned out and radiologically scanned for release on July 15, 2011. Documented separately.
- Contacted TestAmerica to process sample bottle order and begin receiving bottles/coolers at the site.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Relocated 712 D and DD and 713 D and DD locations. Will confirm that staked locations fall on ATI/Allvac property. UFPO will be contacted to clear utilities when USACE approval is given.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _072011__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/20/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy, humid 75° F., PM; Sunny, 88° F, breezy, humid.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Reshot 708 DD, 712 and 713 proposed locations as latest GPS location map received by Trent Richards appears to be skewed. UFPO request will be made when locations are approved by the USACE.
- Contacted TestAmerica St. Louis to process sample bottle order and begin receiving bottles/coolers at the site.
- Investigated submersible pump and Teflon-lined tubing costs for upcoming groundwater sampling. Peristaltic pump received at Cooper Avenue office 07/19/11 and is onsite.
- Awaiting clarification on Sewer Sampling locations.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Shawn Andrews) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Reshot 712 D and DD and 713 D and DD locations with GPS handheld and sent coordinates to Cincinnati office for plotting in order to confirm that staked locations fall on ATI/Allvac property. UFPO will be contacted to clear utilities when USACE approval is given.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _072111__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/21/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy, humid 81° F., PM; Sunny, breezy, humid, 93° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- UFPO request called in for proposed 712D, DD and 713D, DD locations. Estimated start date is 07/27/11 (3 business days notice). UFPO Ticket expires 08/10/11.
- Conducted background radiation surveys in an upwind area covered by soil and vegetation and an area covered by crushed rock/gravel. Performed survey of adjoining former guard house for possible sample cooler storage area.
- Investigated submersible pump and Teflon-lined tubing costs for upcoming groundwater sampling.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Performed background radiation area surveys which was covered by soil and vegetation grasses and an area covered by crushed rock/gravel. Surveyed possible storage area inside former guard house adjacent to office trailer.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _072211__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/22/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm, humid 75° F., PM; Sunny, calm, humid, 93° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Richards/Cronin attended Shaw/USACE Guterl PDT Bi-weekly Status Call in AM.
- Investigated Sanitary Sewer line (15") that crosses undeveloped Newfane Lumber parcel for upcoming sampling. Spoke with Paul Henning (?) – owner, who located southwest manhole. Northeast sewer manhole is under Newfane Lumber parking lot pavement. City of Lockport Engineering Department (Rolando Moreno) was contacted to get sewer construction specifics; awaiting callback. Spoke with Norm Baker regarding water lines.
- Called Nothnagle Drilling regarding remobe to site for 712D, DD and 713D drilling, awaiting callback with date.
- First shipment of sample bottles (6 boxes) and coolers (23) received from TestAmerica, more expected next week. All brought on site.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Begin storing sample supplies onsite.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _072511__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/25/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, calm, occasional rain showers and thunderstorms, humid 70° F., PM; Mostly sunny, breezy, humid, 83° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- City of Lockport Engineering Department (Rolando Moreno) was contacted to coordinate sewer sampling with City personnel. Sampling scheduled for Wednesday July 27, 2011 at 1330. Four gas meter ordered from Pine Environmental.
- Reviewed Nothnagle Drilling invoice for tasks completed to date.
- Inventoried shipment of sample bottles and coolers received from TestAmerica. Determined bottle needs for sewer sampling task later this week. Ordered sixty 45 µm in-line filters for upcoming groundwater sampling task. Verified that no QC samples are required to be collected during this task.

Were there any Delays in Work Progress today?

- No

General Comments:
- No radiological readings detected. All instruments were sourced checked.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Begin storing sample supplies onsite.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _072611__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/26/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly sunny, breezy, 70° F., PM; Sunny, breezy, 83° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Four gas meter received from Pine Environmental for sewer sampling. Purchased sampling equipment (extendable pole, disposable plastic cups, longer gloves).
- Prepared electronic copy of TestAmerica Chain-of-Custody to be used during sampling. Called TestAmerica Amherst to arrange courier service for collected samples. Worked on Master sampling list to track progress of site-wide sampling effort.
- Prepared sample bottles, labels and COC for groundwater and sewer sampling tasks 07/27/11.
- Cronin/Richards attend Guterl Team Meeting conference call.
- Perform well survey to locate existing wells and check on tubing in them. Unable to locate several wells.

Were there any Delays in Work Progress today?

- No

General Comments:
- No radiological readings detected. All instruments were sourced checked.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Begin storing sample supplies onsite.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _072711__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/27/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, slightly breezy, 70° F., PM; Mostly sunny, breezy, 81° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Prepared for City of Lockport Sewer Sampling task (calibrated PID and 4-gas meter), met with City engineering personnel and collected Sewer Location #1 (Clark Rigging property) and Sewer Location #2 (Newfane Lumber property) samples. Radiologic release procedure being performed on bottles and cooler prior to pick up. Called TestAmerica Amherst to arrange courier service for collected samples. Samples to be released August 1, 2011 for transport.
- Picked up Grunfos submersible pump and tubing from Shaw office.
- Finalized sample cooler release procedure to utilize locale TestAmerica's courier service for sample shipping.

Were there any Delays in Work Progress today?

- No

General Comments:
- No radiological readings detected. All instruments were sourced checked.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately. Performed biweekly Project Safety Inspection Report, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Begin and finish City of Lockport Sanitary Sewer sampling. Store samples onsite to perform radiologic releaseprior to shipping.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _072811__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/28/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, showers, calm 75° F, PM; Cloudy, 80° F, calm, humid.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Nothnagle Drilling remobes to site for 712 D, DD and 713 D well drilling. T. Richards performs rad surveys of the CME 85 drilling rig and the 712 and 713 drilling locations. Nothnagle hand clears all drilling locations. Work on setting 4" casings at all 3 locations; 4" casing set at ~7' bgl at 713 D, ~5' bgl at both 712 D and DD.
- Performed release survey of Sanitary Sewer sample bottles and cooler for later shipping.
- Purchased tools and fittings for Grunfos Redi-Flo 2 submersible pump and tubing.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza, Steven Curry, Lindsey Bartolomei) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 07/28/2011.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 07/28/11
End - open

LABOR HOURS
Start 0745 - End 1200 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR) DAILY LOG OF CONSTRUCTION	Report Number _072911__ Page 1 of _1__ Date 07/29/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, rain showers – heavy at times, calm 75° F, PM; Cloudy, 82° F, calm, humid.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Nothnagle Drilling cores bedrock from ~7' to 20' bgl at 713 D and installs 2" PVC well – documented separately. Move to 712 DD and core bedrock from ~5' to 40' bgl and install 2" PVC well – documented separately.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected. Approximately 30 minutes standby time in AM due to thunderstorm in area.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 07/28/2011.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 07/28/11
End - open

LABOR HOURS
Start 0745 - End 1245 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _080111__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 08/01/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm 75° F, PM; Cloudy, 82° F, calm, humid.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Nothnagle Drilling finishes well installation at 712 DD then cores bedrock from ~5' to 20' bgl at 712 D and installs 2" PVC well – documented separately. Well pads installed at 712 D, 712 DD and 713 D. All wells (17) have now been installed.
- Begin/complete development at 713 D – documented separately.
- Begin/complete development at 712 DD – documented separately.
- Sewer sample locations #1 and #2 were shipped off today to TestAmerica St. Louis via TestAmerica courier.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 07/28/2011.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 07/28/11
End - open

LABOR HOURS
Start 0745 - End 1530 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _080211__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 08/02/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm 75° F, PM; Mostly sunny, 84° F, calm, humid.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Determined screened interval of 712 D was presently dry when setting up to begin development at – documented separately.
- Performed Exit Survey on Nothnagle drilling rig – documented separately. Nothnagle offsite at 1030.
- 61 drums of IDW at decon area, 8 empty drums available to contain sampling purge water.
- Worked on groundwater sampling strategy and scheduling.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 07/28/2011. Finish 08/01/11. Development began 08/01/11, ended 08/02/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 07/28/11
End – 08/02/11

LABOR HOURS
Start 0700 – End 1030 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _080311__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 08/03/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, rain showers, calm 73° F, humid. PM; Cloudy, 84° F, slightly breezy, late PM rain showers, humid.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Worked on groundwater sampling strategy and scheduling.
- Completed a round of groundwater level readings (53 wells) across the site – documented separately.

Were there any Delays in Work Progress today?
No.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater level measurement task began and finished 08/03/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
-None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
-None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
-None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _080511__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 08/05/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly sunny, calm 68° F. PM; Partly sunny, 85° F, slightly breezy, humid.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-603 D, MW-22 (first MS/MSD collected here), and MW-18 – documented separately. Samples handed off to TestAmerica Buffalo courier in PM for Saturday delivery. Confirmed receipt of groundwater samples collected 08/04/11 at TestAmerica St. Louis.
- Assemble sampling supplies for scheduled Erie Canal Seep Sampling task and groundwater sampling Monday 08/08/11.
- Cronin/Richards attended USACE PDT conference call.

Were there any Delays in Work Progress today?
No.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Shawn Andrews, Lindsey Bartolomei) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
-None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
-None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
-None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _080811__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 08/08/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, calm 72° F, humid. PM; *Partly sunny, 85° F, slightly breezy, humid.*

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-08, MW-09 and MW-11 – documented separately. Samples handed off to TestAmerica Buffalo courier in PM for Tuesday delivery to TestAmerica St. Louis..
- Two Seep samples (Seep 01 & Seep 02) collected along the bedrock faces of the Erie Canal by USACE and Shaw (Vikas Tandon) personnel. These samples shipped along with today's groundwater samples.

Were there any Delays in Work Progress today?
No.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Jeff King, Bill Frederick, Dennis Reimer, and Lindsey Bartolomei) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
-None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
-None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
-None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR) DAILY LOG OF CONSTRUCTION	Report Number _080911__ Page 1 of _1__ Date 08/09/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, rain showers throughout AM, calm 70° F, humid. PM; Cloudy, scattered rain showers, calm 75° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-705 D, MW-705 DD and MW-711 D – documented separately. Samples handed off to TestAmerica Buffalo courier in PM for Wednesday delivery to TestAmerica St. Louis. Had difficulty purging groundwater with larger diameter silicone tubing, ordered replacement tubing from Shaw Electronics.
- Vikas Tandon onsite to inspect rock cores.

Were there any Delays in Work Progress today?
No.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
-None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
-None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
-None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR) DAILY LOG OF CONSTRUCTION	Report Number _081011__ Page 1 of _1__ Date 08/10/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly cloudy becoming mostly sunny, breezy 72° F. PM; Mostly sunny, breezy, 77° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-604 D, MW-605 D, MW-704 DD MW-709 DD, and MW-26 – documented separately. Collected duplicates at MW-605 D and MW-704 DD. Samples handed off to TestAmerica Buffalo courier in PM for Thursday delivery to TestAmerica St. Louis. Collected NYSDEC split samples at MW-604 D, MW-605 D, MW-704 DD and MW-26 – USACE to handle shipment to NYSDEC.
- Mc Intosh Surveyors onsite to survey in new well locations and elevations. Provided Rad support for their activities.

Were there any Delays in Work Progress today?
No.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today. No NYSDEC personnel onsite today for sampling.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
-None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
-None.

LABOR HOURS
-Mc Intosh Surveyors (0815 – 1535). No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
-None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _081111__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 08/11/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly sunny, breezy 72° F. PM; Mostly sunny, breezy, 76° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-602 D, MW-702 DD, MW-708 DD, and MW-13D – documented separately. Collected duplicate sample at MW-708 DD. Samples handed off to TestAmerica Buffalo courier in PM for Friday delivery to TestAmerica St. Louis. Collected 3 remaining NYSDEC split samples at MW-602 D, MW-708 DD and MW-13D – handed seven 1-gallon plastic jugs to NYSDEC personnel (John Mitchell) – documented separately.

Were there any Delays in Work Progress today?
No.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today. NYSDEC personnel (John Mitchell) onsite today for sampling.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011. Well surveying completed 08/10/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
-None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
-None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
-None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _081211__ Page 1 of _1__ Date 08/12/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly sunny, calm, 72° F. PM; Mostly sunny becoming cloudy, breezy, humid, occasional showers, 76° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-25, MW-06, MW-07, and MW-10 – documented separately. Collected fourth duplicate sample at MW-25. Samples handed off to TestAmerica Buffalo courier in PM for Saturday delivery to TestAmerica St. Louis.

Were there any Delays in Work Progress today?
No.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Shawn Andrews) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
-None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
-None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
-None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _081511__ Page 1 of _1__ Date 08/15/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, breezy, 72° F. PM; Mostly cloudy becoming partly sunny, breezy, humid, 76° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-706 DD, MW-710 D, and MW-711 DD – documented separately. Could not fill full bottle set at MW-711 DD due to slow recharge at depth. Will continue to collect groundwater at that location tomorrow. Samples handed off to TestAmerica Buffalo courier in PM for Tuesday delivery to TestAmerica St. Louis.
- Set up Grunfos Redi-Flo 2 submersible pump at MW-710 DD but keep getting 'ground fault' message at controller unit. Consult with Pine Environmental – likely an electrical short in the pump cable. Replacement pump unit being delivered 08/16 am to the Lockport Comfort Inn.

Were there any Delays in Work Progress today?
-Yes, issues with the Grunfos submersible pump.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _081611__ Page 1 of _1__ Date 08/16/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Clear, slightly breezy, 68° F. PM; Sunny, slightly breezy, 83° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-606 D, MW-14, MW606 DR, MW-15 and MW-17 – documented separately. Completed sampling at MW-711 DD using disposable bailer to collect remaining unfiltered and filtered metal samples. Samples handed off to TestAmerica Buffalo courier in PM for Wednesday delivery to TestAmerica St. Louis.
- Packaged geotechnical soil samples collected in acetate tubes during earlier drilling operations. Samples handed off to TestAmerica Buffalo courier in PM for shipment to Shaw Knoxville, TN office – documented separately.

Were there any Delays in Work Progress today?
- None..

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _081711__ Page 1 of _1__ Date 08/17/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Clear, slightly breezy, 69° F. PM; Sunny, slightly breezy, 84° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Continued groundwater sampling task. Attempted to use replacement Grunfos pump but had problem with Hertz generator's GFCI tripping repeatedly. Called Pine Environmental (Mattydale, NY and New Jersey offices) to discuss problem. They suggest using a different generator as voltage range produced might be too much for controller. Drive to Hertz to try another generator with pump but it too trips GFCI. Consult with Karl V. Make arrangements with Pine to meet in Rochester, NY area to get Honda generator from them and to test pump(s). Drive to and from Victor, NY to get a new controller and Honda EU 2000i generator.
- Purged MW-707 DD using disposable bailer to collect ~ 6' of groundwater. Well dried out. Will check Thursday to see if any groundwater can be sampled. No samples collected today so noTestAmerica Buffalo courier needed.
- Cut/cleared vegetation to create a path to MW-600 cluster along northern site boundary.

Were there any Delays in Work Progress today?
- Grunfos pump/controller issues, replacement.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION		Report Number _082611__ Page 1 of _1__ Date 08/26/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site		Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly cloudy, calm, 67° F. PM; Partly sunny, breezy, 78° F.	

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Continued hydraulic conductivity testing at MW-710 D (Solid PVC slug; falling and rising head tests) along with MW-710 DD offset testing, and at MW-709 DD (Pneumatic slug assembly; rising test) along with MW-604 D offset testing, Set up to perform testing, at MW-706 DD (Pneumatic slug assembly) along with MW-19 offset testing, but found we could not build up pressure in MW-706 DD. Found sand from the annular space between 4" protective casing and 2" PVC riser pipe was being blown out the casing's weep hole, suggesting either a split in the riser pipe or a loose joint. Riser connections appear to be tight. A Solid PVC slug test will be run on this well next Monday.
- Received groundwater sampling filters from Pine Environmental for future sampling events.

Were there any Delays in Work Progress today?
- None.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Hydraulic Conductivity testing begun 08/24/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _082911__ Page 1 of _1__ Date 08/29/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly sunny, calm, 60° F. PM; Mostly sunny, breezy, 79° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Continued hydraulic conductivity testing at MW-706 DD (Solid PVC slug; falling and rising head tests) along with MW-19 offset testing, at MW-711 DD and MW-711D (Pneumatic slug assembly; rising head tests) along with offset testing, and at MW-705 D and MW-705 DD (Pneumatic slug assembly; rising head tests) along with offset testing. Testing at MW-701 DD, MW-702 DD, MW-703 DD and MW-704 DD remain to be performed.
- Took IDW drum inventory.

Were there any Delays in Work Progress today?
- None.

General Comments:
- No radiological readings taken; just source checks performed.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- No deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Hydraulic Conductivity testing begun 08/24/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _083011__ Page 1 of _1__ Date 08/30/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy, 66° F. PM; Mostly sunny, breezy, 78° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Continued hydraulic conductivity testing at MW-703 DD (Pneumatic slug assembly; rising head tests) along with MW-607 D offset testing, at MW-701 DD (Pneumatic slug assembly; rising head tests), at MW-702 DD along with MW-602 D offset testing, and at MW-704 DD (Pneumatic slug assembly; rising head tests) along with MW - 605 D offset testing. Hydraulic conductivity testing is completed.
- Ordered non-aqueous IDW bottle set from TestAmerica Buffalo, will pick up in late PM.

Were there any Delays in Work Progress today?
- None.

General Comments:
- No radiological readings taken; just source checks performed.

Verbal Instructions given by Government:
- None – USACE (Mark Legeza) personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- No deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Hydraulic Conductivity testing begun 08/24/2011, finished 08/30/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _083111__ Page 1 of _1__ Date 08/31/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy, 65° F. PM; Mostly sunny, breezy, 82° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Collected aqueous and non-aqueous IDW samples from drummed waste for disposal analysis.
- Collected final groundwater samples (filtered Total Uranium, filtered and unfiltered TAL metals) from MW-707 DD. Samples handed off to TestAmerica Buffalo courier in late PM for Thursday delivery to TestAmerica St. Louis. Sent empty coolers and unused bottles back to TestAmerica.
- Performed out-of-scope hydraulic conductivity testing at MW-705 D and MW-705 DD (solid PVC slug testing), only performed falling head tests due to the extremely slow recharge rate observed at both wells. Test ended at MW-705 DD due to Troll running out of memory. Plan to perform falling head tests at MW-702 DD and MW -711 DD as time allows.

Were there any Delays in Work Progress today?
- None.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE (Mark Legeza) personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance; no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Hydraulic Conductivity testing begun 08/24/2011, finished 08/30/2011. Out-of-scope K testing started 08/31/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _090111__ Page 1 of _1__ Date 09/01/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly cloudy becoming mostly sunny, breezy, 68° F. PM; Mostly sunny, breezy, humid, 82° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Performed out-of-scope hydraulic conductivity testing at MW-702 DD and MW-711 DD (solid PVC slug testing), only performed falling head tests due to the extremely slow recharge rate observed at both wells.
- Began emptying office trailer and moving remaining materials and supplies to adjacent old Guard House for future site activities. Drive material to Tonawanda office and return to site with remaining tyvek to store onsite.
- Performed radiological release surveys on peristaltic pump, PID, and hydraulic conductivity equipment for return to Electronics Shop. Filled out dispatch forms and returned equipment to Findlay, Ohio office via UPS.

Were there any Delays in Work Progress today?
- None.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately. Completed Project Safety Inspection Report, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance; no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Hydraulic Conductivity testing begun 08/24/2011, finished 08/30/2011. Out-of-scope K testing begun 08/31/2011, finished 09/01/11.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

6/15/11 @

0650 ONSITE
0700 MORNING MTG, FILL EYE WASH STATION @ PICKUP TRUCK (1)
GO TO 706 DD DRIVE 4' LINERS TO DETERMINE TOR (~6.5') TRY AND COLLECT 2' ACETATE GEOTECH SAMPLE - HAVE COARSE GRAVEL IN SHOE W/ ONLY ~6" OF SOIL MOVE RIG ~1.5' TRY AGAIN. RECOVER ONLY ~0.9' 3RD USACE PERSON MARK ONSITE. PERFORM NOISE SURVEY WHILE TURNING HSAs < 90dB. GARY G ONSITE. PLACE ~10.5' 4" STEEL CASING INSIDE HSAs. BEGIN CEMENTING CASING @ 1005, FINISH @ 1010. PACK UP AND DECON HSAs @ PAD. MOVE RIG TO 709DD (FRONT LAWN) LEVEL D.

DOWNGRADE TO B. BEGIN 4' MACROCORE @ 709DD @ 1110 - REFUSAL ON ROCK @ ~2.4' BGL, RUN 3" SSP FROM 0-2' REC ~0.7' DUE TO COARSE GRAVEL IN SHOE NOISE @ <93 dB ~6' FROM RIG WHILE GRINDING HSAs ON BEDROCK. KC OFFSITE FOR GENERATOR @ 1210 BACK ONSITE @ 1325. RIG FILLING UP H_2O @ HYDRANT, PREPARING TO MOVE TO 710DD TO BEGIN CORING. SET UP AND ROLLER BIT GROUT @ BOTTOM OF CASING (~6' BGL). START CORING ~1400 END CORING @ ~1620 @ ~30' BGL @ 701 DD.

6/16 BEGIN CORING @ 701 DD @ 0800 AFTER TAILGATE MTG / SET UP CLEAR UTILITIES @ 702 DD. UPON BEDROCK CORE INSPECTION GARY G SAYS TO RUN 10' SCREEN FROM ~30'-40' TO CAPTURE FRACTURES ABOVE MASSIVE BEDDING OBSERVED BELOW ~37'

AM SUNNY / PM CLOUDY / SHOWERS AFTER 1500

MARK (USACE) @ 701 DD @ 1115. SHOW KEN WHERE 711 D DD LOCATION IS TO BEGIN HAND CLEARING. FINISH CORING @ ~1400. GARY G. OFFSITE TO MONROEVILLE. CHECK SOP RE USING BENTONITE TO BACKFILL RAD SAMPLING BOREHOLE - GARY G SUGGESTS SURVEYING BENTONITE TO GET READINGS FOR INFORMATION. TD @ 79.8' BGL MEASURED ▽ @ 21.52' BGL - CAN HEAR WATER FALLING IN BOREHOLE. INTRODUCE BENTONITE MEDIUM CHIPS, PLUG BACK TO ~41' BGL, SET SCREEN @ ~30'-40', OON SAND FROM 28'-40', BENTONITE FROM ~26'-28'

(1111 EXITS)
(10 SLOT 2" PVC)

6/17 AM M. CLOUDY BREEZY

HOLD TAILGATE MTG @ 0700. WILL BEGIN BEDROCK CORING @ 709 DD. TOP OF CEMENT IS @ ~3' BGL BOTTOM OF CASING IS @ ~4' BGL WILL ROLLERBIT TO ~5' BGL AND START 5-FOOT CORING RUNS THERE START @ 0850. LABEL DRUM OF SOIL CUTTINGS @ 709 DD. END @ 0910 – WATER COMING UP OUTSIDE OF CASING DUE TO FRACTURED BEDROCK. GARY SAYS HE'LL GROUT COREHOLE TO ~10' AND LET SIT OVER WEEKEND. WILL RUN CASINGS @ OTHER LOCATIONS (704 DD, 707 DD, 702 DD). TAKE KEN TO 705 D, DD TO BEGIN UTILITY CLEARING. GROUT ANNULUS @ 709 DD BACK TO SURFACE, MOVE OFF LOCATION @ 1000. MOVE TO 707 DD TO SOIL SAMPLE + COLLECT GEOTECH SAMPLE. DRIVE MACRO CORE @ 1035. REFUSAL @ ~2.5' BGL. RUN 3" SSP W/ LINER FROM ~0.5'-2.5' GET ~0.8 FOOT RECOVERY IN ACETATE LINER. REG BURI WOULD LIKE 704 DD + 707 DD TO BE FLUSH MOUNTED PCS. FINISH GROUTING CASING (5'3") @ 1130. DECON

~3.2' MOVE TO 704 DD AND DRIVE MACROCORE TO ~3.2' BGL @ 1230 RECOVER ~1.1'. DRIVE 3" SSP FROM GL TO 2' (RECOVER ~0.8' OF FILL)

6/18 0.75 hr RUN 6¼" HSAs REFUSAL @ ~4' BGL. CASING LENGTH IS ~5.3' FINISH GROUTING @ 1310.

6/20 AM SUNNY, 70°

ONSITE @ 0645, TAILGATE SAFETY MTG @ 0700. MOVE BACK TO 709 DD AND DRILL OUT GROUT FROM 4" CASING BEGINNING 0800. TR SETS UP AIR SAMPLING PUMPS. BEGIN BEDROCK CORING @ 0822 KEN HAND CLEARING LOCATIONS @ 710 D, DD. @ 1125 TR NOTES THAT FLUSH MTD PROTECTIVE CASING @ MW-604 D APPEARS WET. RUN COVER WELL – GRIPPER CAP OFF 2" PVC W/ WATER INSIDE PC. ! @

710 711 705 708 DUE S OF ↑ CALLED IN FOR UFPO THURSDAY START

1145 @ WELL ~5.8' BTOC TD ~18.10' BTOC – ASSUME COMMUNICATION W/ CORING ACTIVITIES. CORE DOWN TO ~80'1" @ 1505. BEGIN FILLING W/ BENTONITE CHIPS; TAKE UP TO ~48' BGL AND LET HYDRATE OVER NIGHT. TR + KC GO OVER TO LOCATE 708 DD – ACROSS OHIO ST + TO SOUTH OF MAPPED LOCATION AS PER KVK. LOOKS AS IF 710 D, DD WHERE STAKED IS WHERE 708 DD WOULD FALL – CALL KVK – WILL NEED TO REVISIT. DRIVE TO OFFICE FOR RAD BAGS UPS @ AIRPORT TOM B'S BOX SENT.

6/4 (3)

AM P. Cloudy, 70

PM M Cloudy 80° ↑ Humidity

ONSITE @ 0645. PREP FOR TAILGATE, HAVE CREW SIGN FORKLIFT TRAFFIC AWARENESS, PREPARE HOT WORK PERMIT FOR 708 DD CASING CUTTING. KC GOES W/ ICEN TO LOCATE 703 DD. DRILLERS CUT 4" CASING AND INSTALL 2" PVC WELLS AS PER INSTRUCTIONS. TAKE WATER LEVELS @ 701 DD, ~ 5.45' BGL (~10.35' BTOC - UNCUT 2" PVC STICKUP). GET GAS FOR GENERATOR AND DO EQUIPMENT INVENTORY FOR PATRICK M. SET UP @ 707 DD AND DRILL OUT ~ 5' GROUT (3.5' CASING) START BEDROCK CORING @ 0950. HAVE WATER RETURN UP AROUND 4" CASING TO GROUND LEVEL. ROLLER BIT TO ~5' THEN CORE 5'-10' (RUN 1). STEVE WILL GROUT BACK TO SURFACE TO SEAL. LOST ~300 GAL OF WATER DURING 5' CORE RUN. MIX UP GROUT AND TREMMIE INTO BOREHOLE @ 1015, FINISH @ 1040. MOVE TO 704 DD. MOVE 701 DD CORE BOXES TO NEAR DECON PAD. ARRIVE @ 704 DD @ 1120. SET UP AIR SAMPLERS, NOTHNAGLE DRILLING OUT GROUT FROM 4" CASING. SET UP TO CORE, BEGIN CORING @ 1130. @ 1140 WATER COMES UP AROUND 4" CASING. FINISH RUN 1 @ 1145. LOSE ~50 GALS OF WATER. REGROUT FROM SURFACE TO ~10' MOVE RIG TO 706 DD (BOTTOM OF CASING @ ~8' BGL, GROUT TO 3' IN CASING) RUN 1 IS FROM ~8'-13'. TR + KC STAKE OUT 708 + 710 LOCATIONS (CAN'T HAND CLEAR UNTIL 6/23 AS PER KVK). CORE FROM ~ 8'-38' BGL. END CORING FOR DAY @ 1555. NOTHNAGLE OFFSITE @ 1600. DO DAILY REPORTS, DOWNLOAD + LABEL TODAY'S PIX TRY AND SCAN BORING LOGS TO VIKAS TANDON

GROUT @ 3' CASING @ 8' 8-13 @ 20 gals

6/22/11
AM-
CLOUDY
LT SHOWERS
65°
RAIN @ 0830
RAIN ENDS @ ~1100
PM-
HUM (S)
BREEZY
BECOMING M. CLOUDY
BREEZY (N)

ONSITE @ 0650. HOLD TAILGATE MTG @ 0700. START CORING @ 0730 @ 704DD. SKYSCAN STORM INDICATOR SOUNDS SEVERE THUNDERSTORM @ 0740; NO RANGE GIVEN, RADAR HAD SHOWN HEAVY RAIN OVER LAKE ERIE NEAR BUFFALO @ 0720, TRAVELING NW @ 0755 NOT FLASHING SEVERE. CALL KVK TO DISCUSS SCREEN DEPTH; @ 40' STILL MASSIVE MW-19 (ADJACENT) TD = ~23.25' BTOC ~20' BGL (? 10'-20' SCREENED INTERVAL). CALL KVK @ 0835 - WOULD LIKE TO ~50' TO SEE IF FRACTURES PRESENT. START RUN 9 @ 0840 - IF UNFRACTURED PLUG BACK TO ~40' AND SCREEN 30'-40'. CALL KVK @ 0905 ~ ROCK STILL MASSIVE - GO W/ PLAN TO SCREEN 30:40'. GET CALL FROM NORM (716-465-6266) (CITY OF LOCKPORT) RE 708 + 710 LOCATIONS - CLEAR W/ THEM. SAID TO WATCH SNAKE ALONG BYPASS. START 706 WELL INSTALL @ 0920. PLUG BACK FROM ~41'-50' W/ BENTONITE, SAND ~ 28'-41', BENTONITE ~26-28 GROUT ~26' - INTO 4" CASING. RIG OFF SITE TO DECON PAD @ 1020. MOVE BACK TO 704DD @ 1115. START DRILLING GROUT @ 1135, DRILL BACK TO ~10' START CORING @ 1200, END @ 1215. MARK 4 ANGLES @ 704DD @ 1415 W/ LOCATOR FROM PREMIER (UFPO) TO ✓ OFFSITE LOCATIONS - SHOW HIM FIG 3-1 W/ OFFSITE LOCS. HE WILL LOCATE. FINISH BEDROCK CORING @ 704DD @ 1425. FLUSH OUT CORE BARREL AND BREAK DOWN RODS/CORE BARREL. CALL KVK RE SCREEN INTERVAL - ? SCREEN OR SAND PACK OVER BUSTED UP ZONE @ ~28.8' BGL. TALK W/ KVK + VT + SEND PHOTOS OF BUSTED UP ZONE @ ~ 28. OFFSITE @ 1700.

6/23/11
AM
M. SUNNY 65°
(RAIN OVERNIGHT)

ONSITE @ 0645, HOLD TAILGATE MTG @ 0700. WILL SAMPLE SOIL + SET CASING @ 702 DD (BEHIND RAD ROPE) THIS AM, SET CASINGS/SAMPLE @ 711 D, DD ALSO. SET UP @ 702 DD, START SOIL SAMPLING @ 0855. DRIVE 3" SSP @ 0910 TO ~ 4' (2'-4') PID CALIBRATED (100 PPMV) @ TRAILER @ 0830. HSA REFUSAL @ ~4' BGL; ROLLER BIT TO ~10' BGL. DRIVE ~11' OF 4"

7/7 3AM DL PALUMBO

CASING BUT IT BEGINS TO GO IN CROOKED SO PULL OUT AND CUT ~ 6' LONG PIECE OF 8" STEEL CASING (TEMPORARY). PULL HSA SECTION AND DROP 8" CASING INTO BOREHOLE, DROP IN BENTONITE TO SEAL AND SAND TO LOCK IN CASING THEN DRIVE TO ~4.5' BGL. SWITCH TO 6" TRICONE BIT AND DRILL W/ ROLLER CONE TO ~10' BGL (1050-1100) MIX UP 2 BAGS OF GROUT AND PUMP DOWN RODS. DROP 4" CASING INTO 6" BOREHOLE AND PULL 8" CASING. BOTTOM OF 4" CASING SET @ ~ 10' BGL. MOVE OFF 702 DD @ 1140. MOVE TO 711 D, DD, SET UP AND SOIL SAMPLE @ 711 DD @ 1300. 3" SSP COLLECTED ~1'-3' BGL AFTER MACRO CORE. TRY DRIVING 8" CASING - BOUNCE OFF ROCK CUT DOWN 8" CASING TO PLACE AND ROLLERBIT THROUGH 8" CASING SET @ ~ 3" BGL, PLACE W/ BENTONITE SEAL; ROLLERBIT W/ 6" TRICONE BIT. MIX GROUT UP AND LOWER 4" CASING IN 8". BOTTOM OF 4" IS SET @ ~7' BGL. PULL 8" CASING OUT. FINISH 711 DD CASING @ 1410. MOVE RIG TO CASE 711D, DRIVE 8" CASING AND ROLLER BIT W/ 6" TRICONE @ 1430. PLACE 9' OF 4" CASING IN 8" CASING @ 1505, GROUT AND PULL CASING. BOTH 711 D+ DD HAVE ~2' STICK UPS.

PM. MOSTLY SUNNY BREEZY 80°

BECOMING MOSTLY CLOUDY AFTER 1430. HEAVY RAIN @ 1510

FRIDAY 6/24

AM CLOUDY OCC. LT SHOWERS FOG UNTIL 0845

ONSITE @ 0645 TAILGATE MTG @ 0700. NOTHNAGLE SETS UP TO DRILL OUT GROUT @ 702 DD, BEGIN @ 0825. SET UP TO CORE @ 0840 START @ ~10' BGL. HAVE T-STORM, RAIN DELAYS. DRILL/CORE TO ~40' BGL INSTALL GWMW @ 1145 SCREEN 30'-40', SAND FROM 28'-40' BENTONITE 26'-28' GROUT. DRLRS OFFSITE @ 1315

MON 6/27 AM- SUNNY 65°

PM SUNNY 75°

ONSITE @ 0650, HOLD TAILGATE MTG @ 0700, STEVE L HAS DR'S APPT THIS PM SO NEEDS TO BE OFFSITE BY 1530. MOVE TO 708DD LOCATION TO INSTALL 4" CASING. DRIVE MACRO CORE TO ~2.5' BGL, 3" SSP (8-32-44-10/3") REC ~1.4' IN ACETATE TUBE. SET UP TO DRILL W/ 6" TRI CONE BIT AFTER DRIVING 8" STEEL CASING, START DRILLING @ 0840. DRILL DOWN TO ~5' BGL STEVE SAYS ROCK IS HARD THERE SO CASING SHOULD SEAL WELL. GROUT 4" @ 0905. MOVE OFF TO 710D, DD @ 0925. MARK (USACE) ONSITE @ 0930 - GIVE HIM UPDATE ON PROGRESS SO FAR; EXPLAIN 8" CASING RATIONALE TO HIM, PLANNED ACTIVITIES. MOVE TO 710D, DD POUND MACROCORE @ 1000 - REC ~2.3' OF FILL + SOIL, HAD TO CUT SOM POPLAR BRANCHES + BRUSH FROM WELL LOCATIONS FOR ACCESS, FOOTING. ROLLERBIT DOWN TO ~7' BGL THROUGH 8" CASING. MOVE RIG TO ADVANCE 710DD CASING, DRIVE MACROCORE TO ~3' BGL - REFUSAL @ ~3' (RECOVER ~2.9'). NO 3" SSP COLLECTED @ 710 CLUSTER (GEOTECH FOR ONSITE LOCATIONS ONLY). START 6" ROLLER BIT @ 1115. WELL LOCKS ARE MASTER 2342, GIVE SET TO MARK - MARK (USACE) OFFSITE @ 1138. 7' CASING SET @ 710DD. MOVE BACK TO 707 DD. MARK BACK @ 1242 START DRILLING OUT GROUT @ 1240. DRILL OUT GROUT BUT WATER STILL COMING UP ANNULUS SO NOTHING WILL PULL OUT 4" CASING (~5.3') TO DRIVE 8" CASING/6" ROLLERBIT. START ROLLERBIT @ 1320. CUT ~11' OF 4" CASING. END 6" ROLLERBIT @ ~10' BGL @ 1345, PUMP THICK GROUT, END GROUTING @ 1400. CREW WILL FINISH 702DD SURFACE. BILL FREDRICK (USACE) ONSITE @ 1420, ASKS IF VIKAS T WAS TO BE ONSITE TODAY - GOES TO DECON PAD W/ MARK TO LOOK @ ROCK CORE. JEFF HALL ONSITE.

TUES 6/28/11 AM CLOUDY, BREEZY 65°

ONSITE @ 0650 HOLD TAILGATE MTG @ 0700 (T-STORMS PREDICTED). CALIBRATE PID (101 ppmv). PLAN ON ATV RIG BEING DELIVERED THIS AM. NOTHNAGLE SETS UP TO CORE @ 708DD. START DRILLING GROUT @ 0800. MARK LEGEZA (USACE) ONSITE @ 0810, GET ONLY PARTIAL ROCK SECTIONS (COBBLE SIZED) IN 1ST 2 RUNS, GO BACK IN AND COMPLETE CORING RUN TO ~10'. CONTINUE CORING. ATV RIG ONSITE @ 0940. (CME-55 LC), UNLOAD OFF TRAILER, MARK LOVANT "DRIVES" RIG OVER TO 705D, DD LOCATION. AL CAMPISANO - CITY OF LOCKPORT WATER DEPT STOPS BY - 2 LARGE WATER MAINS ALONG CSX RR ROW THAT RUN TOWARDS RT 93. WOULD LIKE TO STOP OUT WHEN 712 + 713 LOCATIONS ARE STAKED AND CALLED IN FOR UFPO. FINISH CORING @ 1130, KARL VAN KUREN REQUESTS FLUSH MOUNTED CASING FOR 708DD. INSTALL GWMW, MOVE RIG OFFSITE @ 1300. TO 707DD. START DRILLING GROUT @ 1340. START HX CORING @ ~10' BGL @ 1407. FINISH CORING FOR THE DAY @ 1340 - NOTHNAGLE OFFSITE @ 1345, MARK L (USACE) OFFSITE) TOO 716-690-5158

WED 6/29/11 AM CLOUDY WINDY 60°

ONSITE @ 0645, HOLD TAILGATE @ 0700. MARK LEGEZA (USACE) ONSITE @ 0705. START CORING @ 707D @ 0720, FINISH @ ~40' BGL @ 0800. INSTALL GWMW, FINISH @ 0900, MOVE OFF TO DECON, GO TO 705DD TO SET CASINGS. DRIVE 4' MACRO CORE @ 705DD @ 0955. HAVE TO REPOSITION RIG AS 8" CASING NOT DRIVING IN STRAIGHT. CUT ANOTHER LENGTH OF 8" AND DRIVE INTO TOP OF ROCK SET UP TO DRILL W/ 6" TRICONE. AT 1100 WHILE MIXING GROUT TO

SET 4" CASING IN BOREHOLE, TR + KC WERE RELOCATING AIR PUMP NEAR RIG DUE TO WATER ON GROUND APPROACHING PUMP KEN A. WAS MIXING GROUT IN 55-GAL DRUM THAT WAS BEING CIRCULATED THROUGH RIGS MOYNO PUMP AND 1" HI-PRESSURE HOSE. HOSE BECAME PLUGGED W/ SOLIDS AND THEN DISCHARGED SPRAY (MIXED GROUT + POTABLE WATER) IN TRENT RICHARD'S DIRECTION WHILE HE WAS REPOSITIONING AIR PUMP TRENT WAS SPRAYED W/ GROUT MIXTURE ON HIS FRONT SIDE WHICH COVERED HIS HARD HAT, SAFETY GLASSES, EXPOSED FACE/SKIN, COVERED ARMS, LEGS + SAFETY VEST. DRILLERS USED POTABLE WATER AND PAPER TOWELS TO CLEAN OFF MIXTURE. WET CLOTHING BEING WORN IN 60°F WINDY CONDITIONS. MOVE RIG OVER AND DRIVE 8" CASING, TRI CONE DRILL AND SET SECOND 4" CASING. FINISH GROUTING @ 1200. ONLY 1 MACROCORE SAMPLE COLLECTED @ THIS LOCATION. NOTHNAGLE SWITCHES OUT DRILLING SWIVEL OF 55 TO ALLOW CORING. DROP OFF 707 + 708 COREBOXES BY DECON. STEVE CHECKS OUT 703 DD LOCATION AND DECIDES TO MOVE CME 85 BACK TO 710 CLUSTER. CASINGS GROUTED @ 705 LOCATIONS EACH ~7' LONG SET @ ~5' BGL. START ROLLER BITING GROUT @ 710 DD @ 1335. START ROCK CORING @ ~7' BGL @ 1350. CORE TO ~32' BGL, NOTHNAGLE/USACE OFFSITE @ 1540

PM
P. SUNNY, 70° WINDY.

THURS 6/30
AM SUNNY, 60°

ONSITE @ 0655, HOLD TAILGATE MTG W/R/T GROUTING. MOVE BACK TO 710 DD START CORING 0725, AFTER COMPLETING 710 DD WELL INSTALL STEVE WILL WAIT @ LEAST 24 HOURS TO LET BENTONITE/GROUT SET UP BEFORE DRILLING 710 D DUE TO FRACTURE ZONE/POSSIBLE COMMUNICATION BTWN WELLS. PARTIALLY GROUT WELL AFTER PLACING SAND/BENTONITE, WILL ✓ DEPTH LATER IN DAY, MAY PLACE BENTONITE ACROSS ~13' FLOW ZONE TO SEAL RIG MOVES

UPPER

PM
SUNNY, 80°

0905, TEAR DOWN AIR PUMPS, LOAD CORE BOXES. MOVE TO 703 DD LOCATION TO SET CASING, DRIVE MACRO CORE TO ~2' BGL (REFUSAL). DRIVE 3" SSP, DRIVE 8" CASING ROLLER BIT W/ 6" @ 0955. CUT 7' SECTION OF 4" CASING, GROUT IN PLACE, MOVE OFF 703 DD @ 1035. HAVE TO FRISK ALL TIRES @ RAD ROPE. STEVE PLACES BENTONITE CHIPS FROM ~19' BGL IN 710 DD AND HYDRATES @ 1130. MOVE TO 705 DD. SET UP AND START DRILLING OUT GROUT @ 705 DD @ 1145. STARTING CORING @ 1200. CORE BARREL PLUGS UP @ ~5.5' @ 1205, BACK CORING @ 1220. @ 1230 STEVE SAYS CASING IS LEAKING SO HE'LL REGROUT THIS CASING AND START CORING ON OTHER CASING. GROUT UP WHAT IS NOW 705D AND REPOSITION CME 55 LC OVER OTHER 4" CASING. START DRILLING OUT GROUT IN THAT CASING W/ 3 5/8" TRICONE BIT. GIVE OK TO DRILL DOWN TO ~10' BGL @ 705 DD BEFORE CORING TO FIND MORE COMPETENT ROCK TO CORE THROUGH. STARTING TO CORE BELOW 10' @ 1335. FINISH CORING @ ~1540 @ ~40' BGL. INSTALL 705 DD WELL AFTERWARDS. DRLRS OFFSITE @ 1645.

545-06-7163

FRIDAY 7/1/11

ONSITE @ 0655, HOLD TAILGATE MTG. MOVE BACK TO 705 TO DRILL/CORE 705 D. START DRILLING @ 0820, TRENTON PULLS CORD TO START AND CORD BREAKS SO CAN'T USE GENERATOR. TRY PATRICK M— GET VM, OUT OF OFFICE, CALL HERTZ - WILL SEND SOMEONE OUT TO REPAIR. DRILL OUT GROUT @ 705 D, BEGIN CORING @ ~0835. GET CALL FROM JOHN MOYER RE MW-7 WELL @ CSK BENITT. END CORING @ ~20' BGL @ 0920. INSTALL 705 D WELL. MOVE CME 55 LC TO 703 DD LOCATION FOR WEEKEND @ 1010. MOVE CME 85 BACK ONTO 710 DD TO CORE, AND

INSTALL GWMW. DRILL OUT GROUT TO ~7' BGL, SET UP TO CORE. CALLED HERTZ RE NEW LOCATION. START CORING @ 1120. HERTZ ONSITE TO REPLACE PULL CORD ON GENERATOR @1130, OFFSITE @ 1140. DRILL TO 20' AND INSTALL GWMW 710D DRILLERS OFFSITE @ 1215. DO PAPERWORK, DOWNLOAD PITOTS

7/5/11 MONDAY AM M SUNNY 75° PM P SUNNY → CLOUDY 75-80° BECOMING HUMID

ONSITE @ 0650, HOLD TAILGATE MTG; DRILL 711 DD + 703 DD TODAY IF POSSIBLE. SET UP CME 85 @ 711 DD LOCATION. START DRILLING GROUT W/ 3" TRICONE TO ~7' BGL @ 0815. MARK L WORKING ON FLUSH MTD ROADBOX @ 707 DD. MARK LAGERA (USACE) ONSITE @ 1010, GENERATOR SHUTS DOWN @ RANDOM TIMES (? TOO HOT, OIL LEVEL + FUEL OK). MARK L OFFSITE @ 1100, BACK @1140, OFFSITE @ 1150. INSTALL GWMW, RUN GROUT TO BELOW 15' AND BENTONITE ACROSS ZONE @ ~ 10' BGL WHERE WATER WAS BEGUN TO BE LOST, WILL TOP OFF GROUT LATER IN PM. RIG OFFSITE @ 1200. MOVE EQUIPMENT TO 703 DD LOCATION THROUGH NW GATE. START DRILLING GROUT @ 1310. FINISH CORING @ -40' BGL @ 1515. INSTALL 703 DD. PACK UP AND MOVE OFFSITE @ 1600; SCAN TIRES OF VEHICLES @ RAD ROPE.

7/6/11 AM SUNNY 70° → CLOUDY PM SHOWERS ARRIVE 1200 HUMIDITY ↑ SUNNY → 80°

ONSITE 0655 HOLD TAILGATE MTG @ 0700, T-STORMS PREDICTED ASK KVK RE DEVELOPMENT H_2O. MOVE CME 85 TO 711D. START CORING @ 0815, FINISH @ 0900, INSTALL WELL, BEGIN DEMOBE OF DRILLING RIGS. TRENT GOES TO PICK UP YSI METER @ HOTEL. START DEVELOPMENT @ 709 DD AND 708 DD - BOTH STABILIZE. REMOVE ~125 GALLONS TOTAL (~60 GALS @ 709 DD, ~65 GALS @ 708DD) DRLRS OFFSITE @ 1545.

7/7/11 AM. SUNNY. 60°

ONSITE @ 0650, HOLD TAILGATE MTG, WILL DEMOBE DRILLING RIGS TODAY, CONTINUE WELL DEVELOPMENT (11) (710 D, DD, 707 DD, 706 DD - IF POSSIBLE [DR's APPT THIS PM]) CALIBRATE YSI 6820; DO, pH, OTHERS GOOD. PREP NOISE DOSIMETER FOR SHIPMENT BACK TO FINDLAY. DEVELOP 710 DD, (~52 GALS), 710 D (~60 GALS). MOVE TO 707 DD @ 1115. - DRYING OUT, V. TURBID. MOVE TO 706 DD ALSO TURBID / DRYING OUT, MOVE TO 704 DD FINISH 704 DD @ 1335 (~60 GALS) KC OFFSITE @ 1400 (DR's APPT) DROP OFF NOISE DOSIMETER @ UPS AND BUY 3 GALS DISTILLED WATER

→ CROSSON PM CLOUDY 75°

16 MILES TO UPS

7/8/11 AM M. SUNNY, 65°

ONSITE @ 0645. HOLD TAILGATE MTG @ 0700. CALIBRATE YSI METER (DO, pH (7,10), TURBIDITY). GO TO 707 DD - DRIES OUT W/IN ~30 SEC. GO TO 706 DD, THAT DRIES OUT AFTER ~6 GALS - LET RECOVER DRY OUT 3X, GO OVER TO 711 LOCATION. BOTH WELLS DRY OUT - LET RECOVER. CONF CALL (1030 - 1115), BURN CDs OF DRILL PIX BACK @ 711 @ 1130; DRYING OUT - MOVE TO 705 D, DD. BOTH DRY OUT SEVERAL TIMES. MOVE BACK TO 711 @ 1320. BOTH WELLS DRY OUT, MOVE TO 707 DD. DRIES OUT AFTER ~5 GALS, LET RECHARGE. DRIES OUT AGAIN - MARK L. TAKES ~75 GALS OF WATER BACK TO DRUM UP. CLEAN METERS.

CONF CALL @ 1030

MONDAY 7/11/11 AM M. SUNNY 75° BREEZY

ONSITE @ 0655, HOLD TAILGATE MTG W/ MARK LORANTY - HE WON'T BE ONSITE 7/12 DUE TO FUNERAL. START @ 711 LOCATION AFTER CALIBRATING YSI 6280 (DO, pH (7+a)). DRY OUT BOTH WELLS GO TO 702 DD (DRIES OUT), GO TO 701 DD, COMPLETE THIS WELL. GO TO 703 DD, COMPLETE THIS WELL, GO TO 706 DD (DRIES OUT)

PM

GO TO 707 DD, NOT ENOUGH WATER TO COVER PROBES, GO TO 705 D, DD. DRY OUT BOTH, LET RECHARGE, DRY OUT. GO TO 711; DRY OUT BOTH. GO BACK TO 706 DD (DRIES OUT), 705 D, DD

(BOTH DRY OUT), 711 D, D (BOTH DRY OUT). PACK UP FOR THE DAY. MARK LOKANTY TURNS OVER WITH LE PUMP, OTHER TOOLS FOR 7/12/11 WORK.

TUES 7/12 AM SUNNY, 75° PM SUNNY 88°

ONSITE @ 0630 HOLD TAILGATE MTG W/ KEN ALMETER CALIBRATE YSI (pH, DO, TURBIDITY). TRENT PERFORMS RELEASE SURVEY ON GENERATOR TO RETURN TO HERTZ. GO TO 707 DD - VERY LITTLE WATER RECHARGE, MOVE TO 702 DD - DRIES OUT. GO TO 706 DD (DRIES OUT), GOTO 705 LOCATIONS (BOTH DRY OUT). KC OFFSITE @ 0935 TO DROP OFF GENERATOR @ HERTZ DROP OFF PAPERWORK W/ P. MULREADY @ OFFICE. BACK ONSITE @ 1135. GOTO 702 DD (DRIES OUT), GO TO 706 DD (DRIES OUT), GOT TO 711 D, DD (BOTH DRIES OUT), GO TO 705 D, DD (BOTH DRY OUT). GO BACK TO 702 DD (DRIES OUT), GO TO 706 DD (DRIES OUT - COMPLETED), GOT TO 711 (BOTH DRY OUT)

WED 7/13/11 AM SUNNY 65° PM SUNNY 77°

ONSITE @ 0655, HOLD TAILGATE MTG, CALIBRATE YSI METER (pH, DO GOTO 707 DD - TOO LITTLE WATER TO RUN THROUGH YSI. GO TO 702 DD; DRIES OUT AFTER 3.5 GAL. GOT TO 711 LOCATIONS, BOTH DRY OUT, GO TO 705 LOCATIONS, BOTH DRY OUT. GO TO TRAILER TO DO SAFETY INSPECTION. GO BACK TO 702 LOCATION (DRIES OUT), 711 LOCATIONS (DRY OUT). GO BACK TO 702 DD AFTER 1300 (DRIES OUT), GO TO 711 LOCATIONS. (BOTH DRY OUT), GO TO 705 LOCATIONS (BOTH DRY OUT).

7/14/11 AM SUNNY 70°

ONSITE @ 0655, HOLD TAILGATE MTG. CALIBRATE YSI (pH, DO) GO TO 707 DD - TOO LITTLE WATER TO DEVELOP. GO TO 702 DD, DRIES OUT AFTER ~ 4 GAL. GO TO 711 LOCATIONS (BOTH DRY OUT), GO TO 705 LOCATION (BOTH DRY OUT). GO TO TRAILER TO GET MAP TO LOCATE 712 + 713 LOCATIONS. VERY OVERGROWN + THICK VEGETATION ENCOUNTERED.

GO BACK TO 702DD (DRIES OUT) GET CALL FROM (L) JMOYER RE. TYCO. WORK SAT 7/23 0700 IF POSSIBLE) GO TO 711 LOC (BOTH DRY OUT), GO TO 705 LOC (DRY OUT). GO BACK TO 702 (DRIES OUT, GO TO 711 LOCATIONS (DRY OUT), GOTO 705 LOCATION (DRIES OUT

7/15/11 FRIDAY AM SUNNY 55°

ONSITE @ 0630, HOLD TAILGATE MTG, CALIBRATE YSI (pH, DO, TURB GO TO 707DD - MEASURE, GO TO 702 DD (DRIES OUT), 711 D, DD (BOTH DRY OUT), 705 D, DD (BOTH DRY OUT) GO GAS UP HERTZ TRUCK TALK W/ TR, KVK RE SAMPLING PROGRAM, 712/713 LOCATIONS GO BACK TO 702 DD (DRIES OUT), 711 D, DD (DRY OUT) AND 705 L, DD (DRY OUT), 16 EMPTY BEING TAKEN OFF SITE. 58 DRUMS FILLED @ PAD, 8 EMPTY DRUMS LEFT BEHIND FOR WELL PURGING OR ADDL DRLG. MARK L OFFSITE @ 1405, MARK LORANTY (NOTHWATCH) OFFSITE @ 1415

250 GAL TANK SCANNED

MON 7/18

ONSITE @ 0655; ATI IS UNDERGOING SITE SHUTDOWN FOR SCHEDULED MAINTENANCE, MARK LEGEZA ATTENDING 40-HR OSHA TRAINING THIS WEEK. TRY AND LOCATE SEWER LOCATIONS FROM FIG 3-2 - CAN'T LOCATE ALONG OHIO ST. MOVE AND INSPECT IN EXCISED AREA ALONG INSIDE FENCED AREA - CAN'T FIND MANHOLES, TR CALLS AL CAMPISANO (LOCKPORT WATER DEPT) · LEAVES VM TO SET UP MTG. GO OUT AND STAKE KVK PROPOSED 712 + 713 LOCATIONS TR SENDS COORDINATES TO CINCY OFFICE FOR PLOTTING

WED 7/27/11 ONSITE @ 0605, HOLD TAILGATE MTG RE SEWER SAMPLING DO E-MAIL RE I VS. TOP OF SCREEN ELEVATION AS PER KLUK CALIBRATE PID (0.0 ppmv + 101 ppmv), 4 GAS METER CALIBRATED @ PINE. DRIVE TO OTHO ST @ 1315 TO WAIT ON CITY OF LOCKPORT PERSONNEL. ROLANDO M ONSITE @ 1335, ANOTHER WORKER JUST BEHIND, PID: 8.8 ppmv, O_2: 20.9, H_2S: 0.0, LEL: 0.0, CO: 0.0 OPEN MANHOLE; COLLECT LIQUIDS @ SEWER LOCATION #1 (CLARK RIGGING) @ 1345, COLLECT SOLIDS @ " " " " @ 1355. TR DOES SCANS @ MH/SURFACE (ASPHALT), MOVE TO GRASS FIELD @ NEWFANE LOC -BOR; @ SEWER LOCATION #2 (1420) PID 0.0 ppmv O_2: 21.7, H_2S 0.0, LEL: 0.0, CO: 0.0 COLLECT LIQUIDS @ SEWER LOCATION #2 @ 1425, COLLECT SOLIDS @ " " " @ 1435. NOTE RAINBOW SHEEN ON LIQUID FACTION OF SLUDGE (DECANTED OFF BACK INTO SEWER) BACK @ TRAILER @ 1505, LABEL & PACK SAMPLES.

WORKING

THURS 7/28/11 ONSITE @ 0650, HOLD TAILGATE MTG FOR NOTHNAGLE (ONSITE @ 0745) PRIOR TO REMOBE TR PERFORMS RAD SURVEY ON RIG. NOTHNAGLE. THEY SET UP @ 713 D LOCATION (CME 85) DRIVE 8" CASING TO ~ 4½' BGL, SET UP TO DRILL ROCK SOCKET w/ NEW VERSA 5 7/8" TRICONE BIT. START DRILLING @ 0930 DRILL TO ~ 7' BGL, PUT IN 4" CASING AND GROUT IN PLACE. MOVE TO 712 LOCATION @ 1005. INSPECT HAND CLEARING - ONLY HAVE ≤ 6" OF GRAY SILT, GRAVEL, ASPHALT (FILL) AT ALL LOCATIONS TR DOES AREA SURVEY. CAN'T DRIVE 8" CASING DUE TO SHALLOW BEDROCK SO RUN 5 7/8" BIT ON RODS AND USE SUMP 3 PUMP TO CAPTURE CIRCULATION WATER FROM BIT. BIT GETS PLUGGED UP, TRIP OUT TO CLEAR. DRILL SOCKET TO ~ 5' BGL, SET 4" CASING. MOVE TO SECOND 712 LOCATION @ 1115. SET 2ND 4"

CINDY BARTOLOMEI

CASING AND PACK UP FOR DAY. DRILLERS OFFSITE

FRIDAY 7/29/11

ONSITE @ 0645, HOLD TAILGATE @ 0700. MOVE BACK ONTO 713D AND BEDROCK CORE ~7' TO ~20' BGL. INSTALL 2" PVC WELL. MOVE TO 712DD @ 0910. CORE BEDROCK FROM ~5'-40', WORK STOPPAGE @ 0950 DUE TO THUNDER - TRENT RICHARDS OFFSITE TO AIRPORT @ 1000. BEGIN CORING AGAIN @ 1025 FINISH CORING @ 1140. INSTALL 2" PVC WELL TO ~40' BGL MOVE RIG BACK ONTO PLANT @ 1220. DRILLERS OFFSITE @ 1245.

MONDAY 8/1/11

PM 84° M. SUNNY

ONSITE @ 0700 HOLD TAIL GATE. SET UP @ 712D. TOP of CEMENT @ 712DD @ ~22' BGL. FIX HYDRAULIC FITTING @ HOSES ONTO TOP DRIVE. PLACE BENTONITE CHIPS TO ~6' (INTO 4" CASING) THEN TOP OFF W/ SAND. DRILL OUT CEMENT @ 712D SET UP TO BEDROCK CORE @ 0830. FINISH CORING @ 0925. INSTALL 2" PVC WELL SCREEN 60'-20', SAND TO ~8', BENTONITE TO ~5' (BTM OF CASING) TAKE COREBOXES BACK TO DECON PAD. KC OFFSITE @ 1040 TO GET TUBING @ COOPER. BACK ONSITE @ 1220. GET GEOPROBE SOIL SAMPLE @ 713D, CALL TA TO ARRANGE COOLER (SEWER SAMPLES) PICKUP. START DEVELOPMENT @ 713D, END @ 1400, MOVE TO 712DD WELL FOR DEVELOPMENT. FINISH UP @ 1500.

TUESDAY 8/2/11

AM SUNNY 75°

ONSITE @ 0655 HOLD TAILGATE MTG W/ NOTHNAGLE. CALIBRATE YSI; DO, pH (7,10), NTU (0.0, 126.0). GO TO 712D LOCATION MEASURE ▽ - DRY, TD @ ~22.02' BTOC, WATER IN 712DD (~30.16' BTOC) - CALL K. VANK. RIG GOES OVER FOR

EXIT SCAN BY TR. RE PHOTOGRAPH SOME CORE BOXES DUE TO WRONG WELL # ON THEM (71200 - NOT 71300 [NEVER DRILLED]. HAVE CONF CALL @ 1100.

WED — COMPLETED ROUND OF GW II LEVELS ACROSS SITE.

THURS — PID (0.0, 101 ppmv)
ONSITE @ 0655, CALIBRATE YSI; DO: 98.0%, pH: 7.00, 10.01, TURBIDITY: (0.0, 125.9) ASSEMBLE BOTTLES, FORMS, ETC. GO TO MW-24, SET UP AND BEGIN PURGE @ 0855 SAMPLE @ 0925 (A04DMW24 0001) GO TO MW-23 PURGE @ 1023 SAMPLE @ 1040 (A04AMW23 0001) MOVE TO 713D (A04DMW713D 0001) @ 1100. PURGE @ 1135 SAMPLE @ 1200 AFTER FITTING SMALLER Ø SILICONE TUBING TO LARGER TEFLON LINED TUBING. ORDERED 3/8" x 5/8" SILICONE TUBING (20') FROM PINE. GO TO MW-19 START PURGE @ 1312, SAMPLE @ 1330 (A04BMW19 0001). KARL V. ASKS FOR REVISED SAMPLING SCHEDULE GO BACK TO TRAILER, KC PLACES PURGE WATER INTO LABELED DRUM WHILE TR WORKS ON SCHEDULE. PREP SAMPLES FOR SHIPMENT. TA COURIER ONSITE @ 1610; KC TO TEXTRON @ 1715, TR TO COMPLETE PAPERWORK FOR SHIPMENT.

9/16 — 5/8" ODX 3/8"

FRI 8/5 — AM M SUNNY 68°
ONSITE @ 0700, CALIBRATE YSI (DO: 98.5% pH: 7.0 10.0, TURBIDITY; 0.0, 126.0), PID (0.0, 101 ppmv). 'LOAD UP' AND SAMPLE 603D + MW-22 PRIOR TO CONF CALL. COLLECT MS/MSD 1 @ MW-22. GO TO MW-18, PURGE + SAMPLE @ 1245 (SHAWN A + LINDSEY B ONSITE FROM USACE) — COME BACK TO PACK SAMPLES, COOLERS, ETC. PREP BOTTLES/LABELS WAIT ON TA COURIER

MONDAY 8/8/11 AM M. SUNNY 72° HUMID

ONSITE @ 0645. VIKAS TANDON ONSITE, HOLD TAILGATE MTG. CALIBRATE YSI (DO: 97.5%, pH: 6.90, 10.0, NTU; 0.0, 126.0 PID: 0.0, 101 ppmv) SHOW VIKAS SEEP LOC. @ LOCKPORT BYPASS BRIDGE. USACE ONSITE (J. HALL, LINDSEY B) - GO OFF W/ VT TO SAMPLE SEEPS. TR/KC SAMPLE GW @ MW-11 (A02MW110001) @ 0910, A02MW090001 @ 1040, A02MW080001 @ 1140. SEEP01 @ 1035, SEEP02 1130. UPDATE COC - SEND TO TR TO PRINT.

0835
0930

TUESDAY 8/9/11 AM CLOUDY 68° RAIN PM CLOUDY RAIN. 73° F

ONSITE @ 0645, HOLD TAILGATE MTG W/ TR, CALIBRATE YSI 6200 (DO: 97%, pH 6.99, 10.01, NTU; 0.0, 126.0, PID: 0.0, 101 ppmv) VIKAST. ONSITE @ 0730. SET UP TO PURGE/SAMPLE @ 705D, DD (A04DMW1D0001) SAMPLE @ MW705D0001 @ 0835 SAMPLE @ MW705DD0001 @ 0930. WAIT ON 705 DD TO RECHARGE TO GET FILTERED SAMPLES - GET CALL FROM REG BURRIS - ALLVAC RE 2 INCIDENTS 8/8 @ 1236 + 1841(?) WHERE THEIR RAD DETECTION SYSTEM @

735-9769

SCALE TRIPPED ALTHOUGH NO TRUCKS WERE @ THE SCALE @ THE TIME (TR SPEAKS W/ HIM RE SHAW PRACTICES) KC OFFSITE @ 1055 TO COOPER FOR SILICONE TUBING, RETURN PINE PERISTALTIC PUMP. BACK @ 1235. GO ~~BACK~~ TO 711 CLUSTER TO SAMPLE 711D, DD HAVE TUBING PROBLEMS, ORDER THINNER WALL TUBING FROM FINDLAY FOR TEFLON LINED TUBING, GET TUBING TO WORK W/ SMALL PIECE OF SILICONE TUBING AND PURGE 711 D SAMPLE A04DMW711D @ 1445

WED 8/10 AM M. CLOUDY → M. SUNNY 65, BREEZY PM M SUNNY → M. CLOUDY BREEZY, 75°

~~FRIDAY~~ ONSITE @ 0650, CALIBRATE METERS (PID: 0.0 & 100 ppmv, YSI: 97.0% D.O., TURBIDITY: 0.0, 125.9, pH: 7.00 + 10.00. MOVE TO 604/709. SURVEYORS ONSITE TO SURVEY WELLS (GARY TEMPLETON, STAN) TAKE ON TOUR. SAMPLE 604D (A04DMW604D0001) @ 0830 TAKE NYSDEC SPLIT #1. SET UP @ 709DD, PURGE + SAMPLE (A04DMW709DD0001) @ 0930 DRIVE OVER TO 605D/704DD TO PURGE AND SAMPLE @ 1015 (A04BMW605D 0001) ALONG W/ 1ST DUPLICATE (MW605D) - (A04BMW9000) AND NYSDEC SPLIT #2. MOVE TO MW 704DD @ 1040 TO PURGE AND SAMPLE @ 1115 (A04BMW704DD 0001) ALONG W/ 2ND DUPLICATE (MW 704DD) - (A04BMW9001) AND NYSDEC SPLIT # 3 DROP OFF COLLECTED SAMPLES @ TRAILER @ 1155 FOR TR TO BEGIN SHOARS. RC TO MW 26 TO PURGE + SAMPLE @ 1320 (A04BMW-26 0001) AND NYSDEC SPLIT #4. DROP SAMPLES OFF @ TRAILER @ 1350 THEN WORK W/ MCINTOSH SURVEYING TO GET TO WELLS BEHIND RAD ROPE (MW 701, 702 + 703), MCINTOSH OFFSITE @ 1535.

THURS 8/11 AM M SUNNY, 65, BREEZY PM M. CLOUDY BREEZY 75°

ONSITE @ 0700, CALIBRATE PID (0.0, 102 ppm) JOHN MITCHELL ONSITE 0710 YSI: DO: 99.2, pH; 7.00, 10.00, TURBIDITY: -0.6, 126.5. MOVE TO 602D/702DD, SET UP TO PURGE/SAMPLE - GW VERY CLAY, TURBID (GRAY FROM 702DD), SAMPLE @ 0915 (A04AMW602D 0001) NYSDEC SPLIT, PURGE + SAMPLE @ 702DD @ 0945, SAMPLE @ 1015 (A04AMW702DD0001) LET WELL RECOVER @ 1040 WHEN FILLING LAST FILTERED BOTTLE. LET WELL SIT TO RECHARGE PACK UP TO DROP OFF BOTTLES @ TRAILER MOVE TO MW-13D TO PURGE + SAMPLE, SAMPLE @ 1200 (NYSDEC SPLIT) GO BACK TO 702DD TO FINISH SAMPLING AFTER SCRAWLING TILES AND FEET @ RAD ROPE. WL @ 702DD @ ~14.90' BTOC @ 1250

BUT COULD NOT GET WATER THROUGH FILTER - LET SIT SOME MORE. GO TO 708 DD AND SET UP TO PURGE/FILTER START @ 1340. SAMPLE @ 1410 (NYSDEC SPLIT / DUP #3)

TRANSFER 7 1-GALLON PLASTIC JUGS OF GROUNDWATER TO JOHN MITCHELL (USE TA COC TO DOCUMENT TRANSFER). JM OFFSITE @ 1500. I @ 708 DD @ 13.05' BTOC @ 1510, TAKE REMAINING FILTERED SAMPLE. DROP OFF PURGE WATER - OPEN 2ND DRUM FOR WATER. TAKE SAMPLE BACK TO TR

FRI 8/12

ONSITE @ 0830 (BLOODWORK), TR @ MW-25 PURGING/SAMPLING WELL - SAMPLE @ 0845; A04BMW250001, AND COLLECT 4TH DUPLICATE - A04BMW9003. GO TO MW-06 PURGE + SAMPLE @ 1000 (A02MW060001), GO TO MW-10 PURGE + SAMPLE @ 1055 (A02MW100001), GO OVER TO MW-07 AND PURGE + SAMPLE @ 1135 (A02MW070001). PREP SAMPLES FOR SAT DELIVERY TO TA-ST LOUIS.

MONDAY 8/15 CLOUDY 70°

ONSITE @ 0650, DO TAILGATE MTG, CALIBRATE PID; 0.0 ppmv (100 ppmv), YSI: DO: 97.7%, pH: 7.00, 10.00, NTU: 0.0, 125.9 START @ 706 D @ 0810 SAMPLE @ 0840 (A04BMW706 DI) 0001) MOVE TO 710 CLUSTER, 710D 0.3 ppmv, 710DD: 0.7, CAN'T GET FLOW @ DD w/ PERISTALTIC PUMP SO SET UP @ 710D, PURGE + SAMPLE @ 0955 (A04DMW710D 0001). INSTALL GRUNFOS PUMP IN 710DD KEEP GETTING "GROUND FAULT" MESSAGE @ CONTROLLER BOX + HAVE REPEATED CIRCUIT BREAKER TRIPS - CALL PINE DI DIAGNOSTICS - MUST HAVE SHORT IN PUMP CABLE - PINE TO SHIP NEW PUMP FOR 8/16 AM DELIVERY @ COMFORT INN MOVE TO 711 DD TO PURGE (1138) AND SAMPLE @ 1200

(A04CMW 7HDD 0001). RUN OUT OF AVAILABLE GW @ ~ 1210 @ ~ 18.5' BTOC AFTER FILLING VOAS + GW CHEM BOTTLE PARTIALLY. LET WELL RECHARGE GO BACK TO TRAILER TO BEGIN SAMPLE COUNTING. COLLECT REMAINING GW CHEM SAMPLE @ 1415. PREP SAMPLES FOR SHIPMENT. PREP FOR 8/16.

TUES 8/16 AM - CLEAR, 65° PM - SUNNY, 80°

ONSITE @ 0650, CALIBRATE YSI: DO 98.1% pH 10.00 + 7.00, NTU: 0.0, 126.0, PID: 0.0, 102 ppmv. GO TO 7HDD. GW WON'T LIFT IN TUBING ☒ @ ~ 15.8' BTOC CALL KVK - OK TO BAIL REMAINDER. GO TO MW 606D, MW-14 START 606D @ 0830 SAMPLE @ 0845 (A03MW606D0001) " MW14 @ 0900 " " 0915 (A03MW14 0001). MOVE TO MW 606DR START @ 0940 " " 0955 (A03MW 606DR0001). MOVE OF MW-15 (-NONE- CALL KVK RE VOCs), " " 1035 (A03MW15 0001). KC GOES BACK 7HDD TO BAIL REST OF BOTTLES @ 1150. BACK TO TRAILER @ 1210 - GO TO MW-17 TO PURGE + SAMPLE, SAMPLE @ 1300 - (A03MW17 0001) GO BACK TO CONTAINERIZE PURGE WATER, PREP SAMPLES SMEAR CONTAINERS / ACETATE TUBES, GATHER BOTTLES + LABELS FOR 8/17. CALL CLIFF FOR PICK UP

WED 8/17

ONSITE @ 0700, ✓ ON GRUNFOS PUMP MAKE CALLS, CALIBRATE YSI; DO: 98.8%, pH: 7.00, 10.00 NTUs: 0.0, 126.0. CALIBRATE PID; 0.0, 100.0 ppmv. TK PICKS UP PUMP @ HOLIDAY INN. GO TO 7HDD SET-UP GRUNFOS; GET UNDERVOLTAGE FAULT MESSAGE AS GENERATOR GFCI TRIPS REPEATEDLY. TK THINKS PROBLEM IS IN CONTROLLER PLUG. CALL PINE; WAIT FOR PINE NJ TO CALL - CLAUDIO CALLS @ 0835. HE SAYS GENERATOR PUTS OUT TOO WIDE A RANGE OF VOLTAGE FOR PUMP - SUGGESTS ANOTHER GENERATOR - CALL HERTZ TO ✓

ON ANOTHER GENERATOR. DRIVE TO HERTZ TO GET REPLACEMENT - TRY OUT 2ND GENERATOR, IT TOO TRIPS (21) WHEN PUMP LOAD ADDED TO IT. TAKE HERTZ GENERATOR OFF RENT. DRIVE BACK TO SITE. PURGE 707DD TO DRYNESS (~1.25 GALS) TAKE PARAMETERS - NO RECHARGE - CLOSE UP WELL. WAIT ON CALL FOR PINE ENV. DRIVE TO EXIT 45 TO GET REPLACEMENT CONTROLLER AND SMALL HONDA GENERATOR. TEST SET UP - OK, AND DRIVE BACK TO LOCKPORT - ARRIVE @ 1545 @ PLANT - GET BARHILL KEY FOR LOCKED ER GATES TO MW-4. GO BACK BEYOND NW GATE AND BEGIN CLEARING VEGETATION BACK TO MW-600 LOCATION

1545

THURS AM CLEAR 70°

PM M CLOUDY OCC SHOWERS 70°F BREEZY

ONSITE @ 0650, CALIBRATE YSI DO: 98.2, pH: 7.00, 10.00, NTUs: -0.1, 125.9 PID; 0.0, 100, PACK + MOVE BACK TO 707DD SET UP PINE'S HONDA GENERATOR, GRUNDFOS PUMP START PURGE @ 0805 SAMPLE @ 0825 (A04DMW710DD0001). MOVE TO MW 712DD AFTER COLLECTING EQUIPMENT BLANK #1 @ 0850. START PURGE @ 712DD (712D - DRY) @ 0918. ~~PUR~~ SAMPLE @ 0935 (A04DMW712DD0001) GO TO MW 707D. HAVE ~1.3' OF GW CALL KVK - HE WOULD LIKE VOAS COLLECTED THEN KEEP COMING BACK TO COLLECT REMAINING ANALYTES. COLLECT 2 VOAS @ (A04AMW607D0001) 1030 (A04BMW707DD0001). MOVE TO MW 607D PURGE + SAMPLE @ 1110. MOVE TO MW-20 PURGE @ SAMPLE @ 1205 (A04AMW20 0001). MOVE TO MW-21 PURGE + SAMPLE @ (A04AMW21 0001) 1245

8/19
AM
SUNNY
68°

PM
SUNNY,
90's SLT
BREEZY

ONSITE @ 0655, CALIBRATE YSI (DO: 97.2%, pH: 7.0, 10.00, NTU: 0.7, 126). PID WON'T CALIBRATE - CLEAN + REPLACE SCREEN, GET FAILED MESSAGE CALL FINDLAY - CLEAN W/ METHANOL - LET SIT ~1 HR - GO TO WELLS W/O AIR OUT. WELLS. GOT TO 607D/703DD SET UP @ 607D TO PURGE, SAMPLE @ 0845 (A03MW607D0001). SET UP GRUNFOS @ 703DD TO PURGE + SAMPLE. SAMPLE @ 0915 (A03MW703DD0001) COLLECT MS/MSD @ 703DD AS WELL. GO TO MW-16 TO PURGE AND SAMPLE @ 1030 (A03MW160001 AND DUPLICATE # 5 - A03MW9004). DROP OFF BOTTLES @ TRAILER FOR TR TO BEGIN COUNTING, KC TO MW-4 TO PURGE + SAMPLE @ 1200 (A02MW40001) HAVE TO SEND PID BACK AS GET "FAILED" MESSAGE AFTER CLEANING. DUMP ACCUMULATED PURGE WATER AND CLOSE UP PURGE WATER DRUM #2, NEED LABEL FOR PURGE WATER DRUM #3. GO TO 701DD TO PURGE AND SAMPLE @ 1340 (A04AMW701DD0001). GO TO 707DD TO TRY AND COLLECT ANIONS + GEN. CHEM. @ 1405

MONDAY
8/22/11
AM
SUNNY,
60°

ONSITE @ 0650, CALIBRATE YSI (DO%: 97.9% pH: 7.00, 10.00, NTUs: 0.0, 126.0. PID TO BE DELIVERED IN LATE AM). GET BOTTLES READY. GO THROUGH NW GATE TO GET TO 600 CLUSTER, PURGE + SAMPLE MW600D @ 0900 (A05BMW600D0001) MW 600S IS DRY. TALK W/ KVK + ED SHOCK RE: HYD. TESTING. MAKE UP MS/MSD LABELS FOR MW-5. GO TO MW-5 TO PURGE + SAMPLE (A02MW50001, MS, MSD) SAMPLE @ 1105. GO BACK TO TRAILER FOR TR TO COUNT - KC PURGES + SAMPLES MW-12 (A02MW120001) @ 1230. GO TO MW-03 TO PURGE AND SAMPLE @ 1345 (A02MW030001)

- 712 DD ? 711 D - 8/23 FILTERS DELIVERED
- 710 D
- 713 D - SOLID SLUG

(23)

TUES 8/23 SUNNY, 66°

pH: 7.00, 10.00

ONSITE @ 0650, CALIBRATE YSI (DO: 99.2%, NTUs; 0.0, 125.9) PID ARRIVED FROM FINDLAY CALIBRATED. GET EQUIPMENT TOGETHER GO TO MW-1 TO PURGE AND SAMPLE, START @ 0835 SAMPLE @ (A02MW010001) 0850. MOVE TO MW-2 (LAST WELL!) TO PURGE + SAMPLE (A02MW02 0001 AND DUPLICATE A02MW9005) @ 0930. SMEAR SAMPLES. GAS UP PINE GENERATOR AND DRIVE IT W/ GRUNFOS. TO TYCO ROCHESTER FOR J. MOYER TO DRIVE BACK TO PINE ON WAY HOME. DRIVE BACK TO SITE (5.8 VA EARTHQUAKE @ 1351). COLLECT ~ 700 ml FROM 707 DD FOR UNFILTERED TOTAL U. SHIP SAMPLES.

MW-713D 8/25 0953 @ 12.28' 0.9 ppmv ▽ @ 12.28' 713 DD TEST 4 IS REALLY 708 DD TEST 4

WED 8/24 SET UP FOR K TESTING W/ PNEUMATIC SLUG (PS) @ MW-710 CLUSTER; COULD ONLY DO 710 DD AS ▽ BELOW TOS IN 710 D (NEED TO DO SOLID SLUG (SS) TEST) HAD TO CONFIGURE 2" PVC EXTENSION DUE TO TOO LITTLE ANNULAR SPACE BTWN 4" CASING + 2" PVC TO TIGHTEN CLAMP. WORK ON GETTING RUGGED READER RECORDING

THURS 8/25 CALIBRATE PID (0.0, 100 ppmv) DO K TESTING @ MW-708 DD (PS-K TESTING), MW-713 D (SS-K TESTING) AND MW-712 DD (PS-K TESTING), 712 D STILL DRY.

FRIDAY 8/26 CALIBRATE PID (0.0, 100 ppmv) DO K TESTING @ MW-710 D W/ SOLID PVC SLUG W/ TRANSDUCER IN 710 DD DURING TESTS

7.55'

0, 100 ppmv

MONDAY 8/29/11
AM CLEAR 60° PM SUNNY/BREEZY 75

ONSITE @ 0650 CALIBRATE PID, DO TAILGATE MTG. GO OUT TO MW 706 DD (MW-15 OFFSET TEST RUN) TO PERFORM SOLID SLUG TEST. RUN 3+ SETS OF RISING/FALLING. GO TO MW-711 CLUSTER PERFORM 3 SETS OF " " TESTS (VERY QUICK RECOVERIES) @ MW-711 D w/ MW-711DD OFFSET TESTING GOING ON CONCURRENTLY. SET UP PS ASSEMBLY @ MW 711 DD - GO TO TRAILER TO CHARGE RUGGED READER. COME BACK TO MW 711DD, PERFORM 3 PS TESTS (VERY FAST RECOVERY). MOVE TO 705 CLUSTER @ 1445. SET UP MW 705 DD OFFSET TEST THEN PERFORM MW 705D PS TESTS(4). SET UP MW 705 D OFFSET TEST (START @ 1602) THEN PERFORM MW 705 DD PS TESTS(4), END TESTS @ 1630

TUESDAY 8/30/11
AM SUNNY, 68°, BREEZY
PM

ON SITE @ 0655, CALIBRATE PID (0.0, 100.0 ppmv) GOT TO MW 703/607 CLUSTER; SET UP 607 D OFFSET TEST, 703 DD PS TEST. OFF TO MW 701 DD @ 0905; START TESTING (PS) @ 0930. ORDER NON-AQ IDW SAMPLE BOTTLES FROM TA (C. FOX) END MW 701 DD TESTING @ 1005. MOVE TO MW 702 DD/602 D, PULL TUBING AFTER MEASURING ▽ @ ~ 9.00' BTOC @ 702 DD, VERY SLOW RECHARGE. ATTEND TEAM CONF. CALL @ 1100, ▽ @ 1125 @ 702 DD: -9.82' BTOC, INSERT TROLL FINISH UP TESTS, MOVE TO MW 704 DD AT 1525. FINISH

WED 8/31
AM

ONSITE @ 0700 CALIBRATE PID (0.0, 100.0 ppmv). HAVE CONF CALL @ 0730 w/ VIKAST RE SLUG TESTING. GO TO DRUM AREA AND SAMPLE 7 DRUMS OF DEVELOPMENT/PURGE WATER FOR IDW ANALYSIS; SAMPLE @ 0930, SAMPLE SOIL/ROCK CUTTINGS FROM 4 DRUMS FOR NON-AQUEOUS IDW ANALYSIS @ 1020 GO TO 705 CLUSTER TO DO SOLID SLUG TESTING AS PER VT. GO TO MW 707 DD TO SAMPLE (PID; 0.1, ▽ @ 38.21')

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _090211__ Page 1 of _1__ Date 09/02/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly sunny, breezy, humid, 68° F. PM; Mostly sunny, breezy, humid, 82° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Cronin/Richards attend bi-weekly PDT telecon.
- Finished emptying office trailer and moving remaining materials and supplies to adjacent old Guard House for future site activities. Ferguson Electric onsite at 0830 to disconnect electrical service; ask him to wait ~1/2 hour so Trent Richards can finish counting release smears. Drive material to Tonawanda office and return to site after returning pickup truck to Hertz.
- Performed radiological release surveys on rental truck and office trailer (interior and exterior), and equipment for return to Electronics Shop. Filled out dispatch forms and returned equipment to Findlay, Ohio office via UPS.
- Site keys returned to USACE personnel (M. Legeza) at guard house.

Were there any Delays in Work Progress today?
- None.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance; no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Completed demobe activities 08/31/2011, finished 09/02/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

APPENDIX B

Photographs
(Provided on Same CD as Appendix A)

MW-600D
MW-600S
MW-17
MW-16
MW-21
MW-20
MW-15
MW-701DD
MW-13D
MW-602D
MW-702DD
MW-601D
MW-14
MW-606D
MW-606DR
MW-603D
MW-22
MW-7
MW-703DD
MW-607D
MW-18
MW-10
MW-6
MW-3
MW-704DD
MW-605D
MW-23
MW-12
MW-1
MW-705D
MW-705DD
MW-4
MW-5
MW-8
MW-25
MW-9
MW-707DD
MW-24
MW-2
MW-19
MW-706DD
MW-26
MW-11
MW-708DD
MW-713D
MW-710DD
MW-710D
MW-604D
MW-709DD
MW-712D
MW-712DD

24 35 37 14 8 6 5 4&9 47 2 1

Sewer #1
Sewer #2

LEGEND:

- Photo location and direction
- Wells
- Guterl Site Boundary
- Guterl Buildings

SCALE: 1"=300'

0 100 200 300 600

United States Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Photograph Locations

Date:	Scale:	Figure No.:
3/21/2012	1"=300'	1

C:\CAD-GIS\Acad 2011\140416 Guterl\140416-03.dwg - Tuesday, 6/12/12 - 8:52 AM

1. Overburden at MW-706DD. Date: 6/15/11

2. Installing 4-inch casing at MW-706DD, view looking west-northwest. Date: 6/15/11

3. Grouting casing at MW-706DD, view looking northeast. Date: 6/15/11

4. Sampling soil at MW-709DD, view looking northwest. Date: 6/15/11

5. Decontamination pad, view looking east-southeast. Date: 6/15/11

6. Coring at MW-701DD, view looking south-southeast. Date: 6/15/11

7. MW-701DD, 20-30 feet, note solution porosity. Date: 6/15/11

8. Driving 3-inch split-spoon sampler at MW-707DD, view looking northwest. Date: 6/17/11

9. Advancing 6-1/4-inch hollow-stem augers at MW-704DD, view looking north. Date: 6/17/11

10. MW-704DD, 5-25 feet. This core is typical of what was encountered at most locations. Note how RQD increases with depth in next two photographs. Date: 6/22/11

11. MW-704DD, 15-35 feet. Date: 6/22/11

12. MW-704DD, 35-40 feet. Date: 6/22/11

13. Setting up to run casing at MW-702DD, view looking northwest. Date: 6/23/11

14. MW-702DD, 20-40 feet. This well has very low hydraulic conductivity (0.011 ft/day). Date: 6/24/11

15. CME 55 LC ATV rig mobilization, view looking southwest. Date: 6/28/11

16. MW-707DD, 5-25 feet. Note increasing RQD with depth in this photograph and next. Date: 6/28/11

17. MW-707DD, 25-30 feet. This well has very low yield. Date: 6/28/11

18. MW-707DD, 15-35 feet. Date: 6/29/11

19. MW-707DD, tremmie pipe for grouting. Date: 6/29/11

20. Well development at MW-709DD. Date: 7/6/11

21. Sampling at MW-24. Date: 8/4/11

22. Hydraulic conductivity testing at MW-710DD. Date: 8/24/11

23. Sewer Sample Location #1, view looking south. Date: 7/19/11

24. Sewer Sample Location #2, view looking south. Date: 7/22/11

25. Sewer Sample Location #1, view looking north-northeast. Date: 7/27/11

26. Sampling Sewer Location #1. Date: 7/27/11

27. Flow in Sewer Location #1. Date: 7/27/11

28. Sampling Sewer Location #2. Date: 7/27/11

APPENDIX C

Boring Logs
(Provided on Same CD as Appendix A)

US Army Corps of Engineers.
Buffalo District
BUILDING STRONG.

Drilling Log

Deep Bedrock Well 701 DD

Project Data Gap Investigation | Owner Guterl Specialty Steel Corporation

Location Lockport, New York | Proj. No. 140416

Surface Elev. 604.47 ft. | Total Hole Depth 80.0 ft. | North 1151810.98 ft. East 1113308.462 ft.

Top of Casing 607.22 ft. | Water Level Initial NA | Static ▼ 8.3 ft. | Diameter 8 in./3.78 in

Screen: Dia 2 in. | Length 10 ft. | Type/Size PVC slotted/ 0.010 in.

Casing: Dia 4 in. / 2 in. | Length 10 ft. / 30 ft. | Type Steel / PVC

Fill Material Silica sand (00N), bentonite pellets/grout | Rig/Core CME 85

Drill Co. Nothnagle Drilling | Method Direct push / Split-spoon / 6.25-inch I.D. HSA / HX core

Driller Steve Loranty | Log By T. Richards, K. Cronin | Date 6/16/11 | Permit # NA

Checked By ____ | License No. ____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
0				PUSH		SP	Silty SAND (topsoil) and roots
							Gray GRAVEL (fill), angular
2			0-4 100%				Grayish brown SILT, loose, dry
							Dark gray silty SAND, some cinders, loose, dry
							Medium brown silty CLAY, low plasticity, very stiff, slightly moist
4			4-5 100%			CL	
				8			
6			5-7 80%	8 8 10			Medium brown silty CLAY, low plasticity, very stiff, very moist
							Two-inch layer of fine gravel at 6.5', wet
			7-8 100%				
8 ▼							Medium to dark gray DOLOSTONE, crystalline, weathered, laminated at top to blocky appearance
10							
12			10-15 95%	RQD 51%			Medium gray DOLOMITE, hard, slightly broken, occasional vug *[~15-gallons water lost during core run]*
14							
16							
18			15-20 100%	RQD 73%			Medium gray DOLOMITE as above, ~30° fracture at ~17.5', ~3.5-inch long slightly weathered fracture at ~19.0'
20							
22			20-25 100%	RQD 71%			Medium gray DOLOMITE, becoming light gray below 21 feet, highly fractured zone from ~20.5' to 21.6' with horizontal fractures and vugs, moderately weathered vugs at ~21.8' and 22.7', ~30° fracture at ~23.8', horizontal fractures at ~24.3' and 24.6'
24							

Continued Next Page

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers.
Buffalo District
BUILDING STRONG®

Drilling Log

Deep Bedrock Well **701 DD**

Project *Data Gap Investigation* Owner *Gutert Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
							Continued
26							*[~160-gallons water lost during core runs 20'-30']*
28			25-30 / 100%	RQD 87%			Light gray DOLOMITE, moderately weathered vug at 25.0' to 25.2', fractured at ~25.8' to 26.0' and ~26.4' to 26.5', massive from ~26.6' to 28.5', moderately weathered from ~28.5' to 28.9', massive from ~28.9' to 30.0'
30							
32			30-35 / 100%	RQD 98%			Moderately weathered, clay-filled thin fractures at ~30.0', 30.5', 31.3', and 31.5', calcite-filled vugs at ~30.8' and 30.9', massive bedding below ~31.5', occasional iron staining *[~50-gallons water lost during core run]*
34							
36							
38			35-40 / 100%	RQD 95%			Moderately to severely weathered, clay-filled thin fracture at ~35.0', irregular dissolution break along vug at ~35.4', massive bedding below ~35.4', occasional iron staining *[~40-gallons water lost during core run]*
40							
42			40-45 / 95%	RQD 96%			Light gray DOLOMITE, becoming medium gray below 40', moderately weathered clay-filled fractures at ~40.9', 43.3' and 43.5' *[~100-gallons water lost during core run]*
44							
46							
48			45-50 / 100%	RQD 96%			Moderately weathered fractures at ~49.2' and 49.8', occasional iron staining, *[~100-gallons water lost during core run]*
50							
52			50-55 / 85%	RQD 94%			Moderately weathered fracture at ~51.5', other breaks appear mechanical from rig chattering and core removal *[~100-gallons water lost during core run]*
54							
56			55-60 / 100%	RQD 91%			Medium gray DOLOMITE, becoming dark gray, massive bedding, fresh vertical breakage in core from chattering *[~250-gallons*
58							

Continued Next Page

WITH USACELOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

Drilling Log

Deep Bedrock Well **701 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
							Continued
60			55-60 / 100%	RQD 91%			*water lost during core run]*
62			60-65 / 100%	RQD 100%			Dark gray DOLOMITE, massive bedding, fresh vertical breakage at ~60'
64							
66							
68			65-70 / 100%	RQD 93%			Dark gray DOLOMITE, becoming shaly, massive bedding, mechanical breakage of core *[losing circulation during drilling, ~450-gallons water lost during core run]*
70							
72			70-75 / 100%	RQD 100%			Dark gray shaly DOLOMITE, massive bedding, occasional mechanical fractures *[losing circulation -no water returns]*
74							
76							
78			75-80 / 95%	RQD 74%			Dark gray shaly DOLOMITE, massive bedding, occasional mechanical fractures *[no water returns]*
80							Bottom of boring at 80.0 feet
82							
84							
86							
88							
90							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District
EVER DOING STRONG

Drilling Log

Deep Bedrock Well **702 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Surface Elev. *600.68 ft.* Total Hole Depth *40.0 ft.* North *1151606.4 ft.* East *1113840.932 ft.*

Top of Casing *602.84 ft.* Water Level Initial *NA* Static ▼ *7.0 ft.* Diameter *8 in./3.78 in*

Screen: Dia *2 in.* Length *10 ft.* Type/Size *PVC slotted/ 0.010 in.*

Casing: Dia *4 in. / 2 in.* Length *10 ft. / 30 ft.* Type *Steel / PVC*

Fill Material *Silica sand (00N), bentonite pellets/grout* Rig/Core *CME 85*

Drill Co. *Nothnagle Drilling* Method *Direct push / Split-spoon / 6.25-inch I.D. HSA / HX core*

Driller *Steve Loranty* Log By *Kevin Cronin* Date *6/24/11* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
0						ML	Dark brown topsoil with roots
			0-4 100%	P U S H 10 11 22 70			White, dense, SAND (fill - possibly foundry brick same as observed on surface nearby)
2						SP	Black cinders and SAND (fill), loose
		NR	2-4 65%				Dark brown to tan silty SAND and GRAVEL (fill)
4							[hit bedrock at 4 feet below ground]
6							
8							
10							
12			10-15 95%	RQD 31%			Medium gray DOLOMITE, hard, broken to slightly broken, moderately weathered, horizontal fractures, occasional vugs, severely weathered from ~12.9'-13.1', 1-inch open vug at ~14.1' *[no water loss during core run]*
14							
16							
18			15-20 100%	RQD 64%			Medium gray DOLOMITE, hard, broken to slightly broken, horizontal fractures, ~60° angle fracture at ~19.2' *[~40-gallons water lost during core run]*
20							
22			20-25 100%	RQD 77%			Medium gray DOLOMITE, hard, broken to slightly broken, horizontal fractures, moderately weathered fractures *[~30-gallons water lost during core run]*
24							

Continued Next Page

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

Drilling Log

Deep Bedrock Well **702 DD**

Project _Data Gap Investigation_ Owner _Guterl Specialty Steel Corporation_

Location _Lockport, New York_ Proj. No. _140416_

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
							Continued
26							
28			25-30 / 100%	RQD / 90%			Medium gray to light gray DOLOMITE, hard, broken to slightly broken, horizontal to slightly angled moderately weathered fractures, ~50° angled fracture at ~27.9 feet *[~5-gallons water lost duri ng core run]*
30							
32			30-35 / 100%	RQD / 99%			Light gray DOLOMITE, hard, massive with horizontal moderately weathered fractures at ~31.2', 33.8', and 33.9' *[~20-gallons water lost during core run]*
34							
36							
38			35-40 / 95%	RQD / 99%			Dolomite, light gray, becoming medium gray below 36', then dark gray below 39.8', hard, massive, moderately weathered fractures at ~36', 37.9', and 39.9' *[`20-gallons water lost during core run]*
40							Bottom of boring at 40.0 feet
42							
44							
46							
48							
50							
52							
54							
56							
58							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers.
Buffalo District
BUILDING STRONG®

Drilling Log

Deep Bedrock Well **703 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Surface Elev. *597.55 ft.* Total Hole Depth *40.0 ft.* North *1151373.87 ft.* East *1112755.563 ft.*

Top of Casing *599.15 ft.* Water Level Initial *NA* Static ▼ *23.2 ft.* Diameter *8 in./3.78 in*

Screen: Dia *2 in.* Length *10 ft.* Type/Size *PVC slotted/ 0.010 in.*

Casing: Dia *4 in. / 2 in.* Length *5 ft./ 30 ft.* Type *Steel / PVC*

Fill Material *Silica sand (00N), bentonite pellets/grout* Rig/Core *CME 85*

Drill Co. *Nothnagle Drilling* Method *3-inch dia. split-spoon / 8-inch temp. casing / HX core*

Driller *Steve Loranty* Log By *Kevin Cronin* Date *7/5/11* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
0			0-2 65%	8 10 16 39		CL	Dark brown silty CLAY
						GP	Coarse GRAVEL, subrounded to angular, little sand, (weathered bedrock)
2							[Sampler refusal at 2.0 feet on weathered bedrock]
4							
6							
8			5-10 100%	RQD 15%			Medium gray DOLOMITE, hard, broken to slightly broken, ~30° fractures at ~6.3', 8.8', and 9.3', moderately weathered fractures, occasional calcite filled vugs *[~40-gallons water lost during core run]*
10							
12			10-15 100%	RQD 29%			Medium gray DOLOMITE, hard, broken to slightly broken, moderately weathered fractures, ~30° fracture at ~14.2'
14							
16							
18			15-20 100%	RQD 63%			Medium gray DOLOMITE, hard, slightly broken to massive, slightly weathered horizontal fractures
20							
22			20-25 100%	RQD 79%			Medium gray DOLOMITE, hard, broken to massive, few slightly weathered horizontal fractures, becomes gray at 21.5' *[~10-gallons water lost during core run]*
24							

Continued Next Page

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers.
Buffalo District
BUILDING STRONG®

Drilling Log

Deep Bedrock Well **703 DD**

Project _Data Gap Investigation_ Owner _Gutert Specialty Steel Corporation_

Location _Lockport, New York_ Proj. No. _140416_

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
							Continued
26			25-30 / 100%	RQD 98%			Gray DOLOMITE, hard, massive (had to break core to fit into box), few slightly weathered horizontal fractures *[20-gallons water lost during core run]*
28							
30							
32			30-35 / 100%	RQD 95%			Gray to light gray DOLOMITE, hard, slightly broken to massive, few slightly weathered horizontal fractures, color change to dark gray at 30.5'
34							
36							
38			35-40 / 100%	RQD 84%			Dark gray DOLOMITE, hard, becoming shaley at ~40', few weathered horizontal fractures, last 2-inches is calcite nodule *[~30-gallons water lost during core run]*
40							Bottom of boring at 40.0 feet
42							
44							
46							
48							
50							
52							
54							
56							
58							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT CORP.GDT 12/7/11

US Army Corps of Engineers.
Buffalo District
BUILDING STRONG.

Drilling Log

Deep Bedrock Well **704 DD**

Project: Data Gap Investigation | Owner: Guterl Specialty Steel Corporation
Location: Lockport, New York | Proj. No.: 140416
Surface Elev.: 598.21 ft. | Total Hole Depth: 40.0 ft. | North: 1151214.74 ft. | East: 1113649.29 ft.
Top of Casing: 597.97 ft. | Water Level Initial: NA | Static: ▼ 3.3ft. | Diameter: 8 in./3.78 in
Screen: Dia: 2 in. | Length: 10ft. | Type/Size: PVC slotted/0.010 in.
Casing: Dia: 4 in. / 2 in. | Length: 5 ft. / 30 ft. | Type: Steel / PVC
Fill Material: Silica sand (00N), bentonite pellets/grout | Rig/Core: CME 85
Drill Co.: Nothnagle Drilling | Method: 3-inch dia. split-spoon / 8-inch temp. casing / HX core
Driller: Steve Loranty | Log By: Kevin Cronin | Date: 6/22/11 | Permit #: NA
Checked By: _____ | License No.: _____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
0–2		NR	0-2 / 55%	8, 9, 8, 13		SP	Tan to light brown SAND and GRAVEL, little silt
4							[Auger refusal at 4 feet on bedrock]
8			5-10 / 80%	RQD 10%			Medium gray DOLOMITE, hard, broken to slightly broken, moderately fractured, numerous vugs with calcite infilling *[water returns on outside of casing]*
12			10-15 / 100%	RQD 16%			Medium gray DOLOMITE, hard, broken to slightly broken, moderately fractured -mostly horizontal, ~50° angle fracture at ~10.9', ~35° angle fracture at ~14.6', vertical fracture approximately 3-inches long at ~11.6', vug with calcite infilling at ~13.8' *[~10-gallons water lost during core run]*
16			15-20 / 100%	RQD 40%			Medium gray DOLOMITE, hard, broken to slightly broken, moderately fractured -mostly horizontal, ~60° angle fracture at ~16.6' *[~60-gallons water lost during core run]*
22			20-25 / 100%	RQD 93%			Dolomite, becoming light gray, hard, slightly broken to massive, moderately weathered horizontal fractures at ~20.5', 20.8', 21.0', 21.8', 22.9', and 23.5', occasional vugs with calcite infilling *[~100-gallons water lost during core run]*

Continued Next Page

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

Drilling Log

Deep Bedrock Well **704 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
							Continued
26			25-30 / 100%	RQD 80%			Light gray DOLOMITE, hard, slightly broken to massive, ~50° angle fracture at 25.0', moderately weathered fractures at ~25.5', 26.2', 26.6', and 27.7', severely weathered fracture at ~28.8' -possible flow zone, moderately weathered fracture at ~29.5' *[~100-gallons water lost during core run]*
28							
30							
32			30-35 / 100%	RQD 99%			Light gray DOLOMITE, hard, massive, moderately weathered fracture at ~30.3' -possibly mechanical
34							
36							
38			35-40 / 100%	RQD 100%			Light gray DOLOMITE, becoming darker below 37.3', hard, massive, moderately weathered horizontal fracture at ~35.3' *[~100-gallons water lost during core run]*
40							Bottom of boring at 40.0 feet
42							
44							
46							
48							
50							
52							
54							
56							
58							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers.
Buffalo District
BUILDING STRONG®

Drilling Log

Shallow Bedrock Well **705 D**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Surface Elev. *597.09 ft.* Total Hole Depth *20.0ft.* North *1150953.49 ft.* East *1112952.424 ft.*

Top of Casing *598.85 ft.* Water Level Initial *NA* Static ▼ *5.8ft.* Diameter *8 in./3.78 in*

Screen: Dia *2 in.* Length *10 ft.* Type/Size *PVC slotted/ 0.010 in.*

Casing: Dia *4 in. / 2 in.* Length *5 ft. / 10 ft.* Type *Steel / PVC*

Fill Material *Silica sand (00N), bentonite pellets/grout* Rig/Core *CME 55 LC*

Drill Co. *Nothnagle Drilling* Method *Direct push / 8-inch temp. casing / HX core*

Driller *Steve Loranty* Log By *Kevin Cronin* Date *7/1/11* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
0			0-2.4 / 100%	PUSH		ML	Dark brown clayey SILT (topsoil), soft, wet Brown clayey SILT, little to some fine gravel, bottom 4-inches of sample is weathered dolomite bedrock
2							[Sampler refusal at 2.4 feet on bedrock]
4							
6	▼						
8			5-10 / 90%	RQD 23%			Medium gray DOLOMITE, hard, very broken to slightly broken, mostly horizontal moderately weathered fractures, ~40° angled fracture at ~6.8' *[~50-gallons water lost during core run]*
10							
12			10-15 / 100%	RQD 47%			Medium gray DOLOMITE, hard, very broken to slightly broken, moderately weathered horizontal fractures *[~5-gallons water lost during core run]*
14							
16							
18			15-20 / 100%	RQD 55%			Medium gray DOLOMITE, hard, very broken to massive, moderately weathered horizontal fractures *[~25-gallons water lost during core run]*
20							
22							Bottom of boring at 20.0 feet
24							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

Drilling Log

Deep Bedrock Well 705 DD

Project: Data Gap Investigation | Owner: Gutell Specialty Steel Corporation
Location: Lockport, New York | Proj. No.: 140416
Surface Elev.: 597.06 ft. | Total Hole Depth: 40.0 ft. | North: 1150950.27 ft. | East: 1112957.606 ft.
Top of Casing: 598.88 ft. | Water Level Initial: NA | Static: ▼ 5.6 ft. | Diameter: 8 in./3.78 in
Screen: Dia: 2 in. | Length: 10 ft. | Type/Size: PVC slotted/ 0.010 in.
Casing: Dia: 4 in. / 2 in. | Length: 5 ft. / 30 ft. | Type: Steel / PVC
Fill Material: Silica sand (00N), bentonite pellets/grout | Rig/Core: CME 85
Drill Co.: Nothnagle Drilling | Method: Direct push / 8-inch temp. casing / HX core
Driller: Steve Loranty | Log By: Kevin Cronin | Date: 6/30/11 | Permit #: NA
Checked By: | License No.:

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS.
0				PUSH		ML	Dark brown clayey SILT (topsoil), soft, wet
2			0-2.5 / 80%			CL	Brown silty CLAY, little fine gravel, stiff, wet (last 3-inches of sample is damp, hard, weathered dolomite)
							[Sampler refusal at 2.5 feet on bedrock]
4							[Drilled to 10 feet with 3-inch tricone bit to begin core in competent rock]
6							
8							
10							
12			10-15 / 95%	RQD 58%			Medium gray DOLOMITE, hard, very broken to slightly broken, moderately weathered horizontal fractures *[~50-gallons water lost during core run]*
14							
16							
18			15-20 / 100%	RQD 78%			Medium gray DOLOMITE, hard, very broken to massive, moderately weathered horizontal fractures *[~10-gallons water lost during core run]*
20							
22			20-25 / 100%	RQD 98%			Gray DOLOMITE, hard, massive, occasional horizontal slightly weathered fractures, mechanical fractures *[<10-gallons water lost during core run]*
24							

Continued Next Page

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT CORP.GDT 12/7/11

US Army Corps of Engineers.
Buffalo District
BUILDING STRONG®

Drilling Log

Deep Bedrock Well **705 DD**

Project _Data Gap Investigation_ Owner _Guterl Specialty Steel Corporation_

Location _Lockport, New York_ Proj. No. _140416_

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
							Continued
26			25-30 100%	RQD 98%			Gray DOLOMITE, hard, massive, slightly weathered fracture at ~25.1' *[~20-gallons water lost during core run]*
28							
30							
32			30-35 100%	RQD 95%			Gray DOLOMITE, becoming darker gray below 32.8', hard, massive, slightly weathered fractures at ~34.0', 34.7', and 35.0' *[<10-gallons water lost during core run]*
34							
36							
38			35-40 95%	RQD 96%			Dark gray DOLOMITE, hard, massive, slightly weathered fracture at ~39.6' *[~40-gallons water lost during core run]*
40							Bottom of boring at 40.0 feet
42							
44							
46							
48							
50							
52							
54							
56							
58							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers.
Buffalo District
BUILDING STRONG®

Drilling Log

Deep Bedrock Well **706 DD**

Project *Data Gap Investigation* Owner *Gutert Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Surface Elev. *598.24 ft.* Total Hole Depth *50.0 ft.* North *1150646.27 ft.* East *1113276.959 ft.*

Top of Casing *600.61 ft.* Water Level Initial *NA* Static ▼ *7.3 ft.* Diameter *8 in./3.78 in*

Screen: Dia *2 in.* Length *10 ft.* Type/Size *PVC slotted/ 0.010 in.*

Casing: Dia *4 in. / 2 in.* Length *8 ft. / 30 ft.* Type *Steel / PVC*

Fill Material *Silica sand (00N), bentonite pellets/grout* Rig/Core *CME 85*

Drill Co. *Nothnagle Drilling* Method *Direct push / Split-spoon / 6.25-inch I.D. HSA / HX core*

Driller *Steve Loranty* Log By *Kevin Cronin* Date *6/22/11* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
0				PUSH		ML	Brown to tan sandy SILT, some fine subangular gravel, loose, dry to damp
2		NR	0-4 / 65%			CL	Brown to reddish brown silty CLAY, some fine sand, stiff, moist to wet
4				18			
6		NR	4.5-6.5 / 100%	31 40 28			
8							
10			8-13 / 95%	RQD 21%			Brownish gray to medium gray DOLOMITE, hard, broken to slightly broken, slightly weathered fractures, occasional calcite-filled vugs, ~60° fracture at ~9.5' *[~20-gallons water lost during core run]*
12							
14							
16			13-18 / 100%	RQD 90%			Medium gray DOLOMITE, hard, broken to massive, slightly weathered fractures, occasional calcite-filled vugs, vertical fracture from ~15.4-16' -possibly mechanical *[~25-gallons water lost during core run]*
18							
20			18-23 / 100%	RQD 63%			Medium gray DOLOMITE, hard, broken to slightly broken, moderately weathered fractures *[~35-gallons water lost during core run]*
22							
24			23-28 / 100%	RQD 78%			Medium gray DOLOMITE, becoming light gray below ~25.5', hard, slightly broken to massive, moderately weathered fractures

Continued Next Page

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT CORP.GDT 12/7/11

US Army Corps of Engineers.
Buffalo District
BUILDING STRONG,

Drilling Log

Deep Bedrock Well **706 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
							Continued
26							with some clay infilling at ~23.1', 23.3', and 25.9' (had to break core to fit into box)
			23-28 / 100%	RQD 78%			*[~75-gallons water lost during core run]*
28							
30			28-33 / 100%	RQD 100%			Light gray DOLOMITE, hard, massive, clay filled slightly weathered fracture at ~29.0' *[~70-gallons water lost during core run]*
32							
34							
36			33-38 / 95%	RQD 100%			Light to medium gray DOLOMITE, becoming darker gray below ~36.5', hard, massive, mechanical fractures noted (had to break core to fit into box)
38							
40			38-40 / 100%	RQD 100%			Dark gray DOLOMITE, hard, massive, moderately weathered fracture at ~38.5', horizontal fractures
42			40-45 / 100%	RQD 100%			Dark gray DOLOMITE, hard, massive, moderately weathered fracture at ~42.8', horizontal fractures *[~50-gallons water lost during core run]*
44							
46							
48			45-50 / 100%	RQD 94%			Dark gray DOLOMITE, hard, massive, moderately weathered fracture at ~46.5' and 47.6' *[~100-gallons water lost during core run]*
50							Bottom of boring at 50.0 feet. Backfilled with bentonite chips to 41.0 feet prior to well installation.
52							
54							
56							
58							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District

Drilling Log

Deep Bedrock Well **707 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Surface Elev. *597.75 ft.* Total Hole Depth *40.0 ft.* North *1150751.51 ft.* East *1113905.844 ft.*

Top of Casing *596.32 ft.* Water Level Initial *NA* Static ▼ *35.4 ft.* Diameter *8 in./3.78 in*

Screen: Dia *2 in.* Length *10 ft.* Type/Size *PVC slotted/ 0.010 in.*

Casing: Dia *4 in. / 2 in.* Length *10 ft. / 30 ft.* Type *Steel / PVC*

Fill Material *Silica sand (00N), bentonite pellets/grout* Rig/Core *CME 85*

Drill Co. *Nothnagle Drilling* Method *3-inch dia. split-spoon / 6.25-inch I.D. HSA / HX core*

Driller *Steve Loranty* Log By *Kevin Cronin* Date *6/29/11* Permit# *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
0						ML	Rusty brown to dark brown sandy SILT (topsoil)
2		NR	0.5-2.5 / 40%	6, 6, 9, 10		CL	Dark brown to brown silty CLAY, some fine to coarse subrounded gravel, little sand, stiff, moist
4							
6							
8			5-10 / 85%	RQD 0%			Medium gray DOLOMITE, hard, broken to slightly broken, moderately weathered fractures, occasional vugs with calcite infilling *[had to re-grout borehole annulus due to water returns outside casing, grout from 10' to surface]*
10							
12			10-15 / 90%	RQD 67%			Medium gray DOLOMITE, hard, broken to massive, moderately weathered, washed out vug/void at ~10.7'-10.9', severely weathered fracture at ~13.7' *[~30-gallons water lost during core run]*
14							
16							
18			15-20 / 100%	RQD 67%			Medium gray DOLOMITE, hard, broken to massive, occasional calcite-filled vugs, approximate 3-inch long vertical fracture at ~19.0' *[~100-gallons water lost during core run]*
20							
22			20-25 / 100%	RQD 95%			Medium gray to gray DOLOMITE, hard, slightly broken to massive, occasional vugs, moderately weathered fractures at ~20.8' and 21.2' *[~100-gallons water lost during core run]*
24							

Continued Next Page

WITH USACE LOGO - DRAFT Rev. 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

Drilling Log

Deep Bedrock Well **707 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
							Continued
26							
28			25-30 100%	RQD 100%			Gray DOLOMITE, hard, massive, no fractures (had to break core to fit in box) *[~100-gallons water lost during core run]*
30							
32			30-35 100%	RQD 100%			Gray DOLOMITE, becomes dark gray and shaley below ~34.6', hard, horizontal fracture at 34.6' *[~60-gallons water lost during core run]*
34							
36							
38			35-40 100%	RQD 100%			Gray to dark gray DOLOMITE, hard, massive, becoming more shaley, weathered horizontal fracture at ~36.7'
40							Bottom of boring at 40.0 feet
42							
44							
46							
48							
50							
52							
54							
56							
58							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District

Drilling Log

Deep Bedrock Well **708 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Surface Elev. *597.75 ft.* Total Hole Depth *40.0 ft.* North *1150684.97 ft.* East *1114514.232 ft.*

Top of Casing *597.61 ft.* Water Level Initial *NA* Static ▼ *8.3 ft.* Diameter *8 in./3.78 in*

Screen: Dia *2 in.* Length *10 ft.* Type/Size *PVC slotted/ 0.010 in.*

Casing: Dia *4 in. / 2 in.* Length *5 ft. / 30 ft.* Type *Steel / PVC*

Fill Material *Silica sand (00N), bentonite pellets/grout* Rig/Core *CME 85*

Drill Co. *Nothnagle Drilling* Method *3-inch dia. split-spoon / 8-inch temp. casing / HX core*

Driller *Steve Loranty* Log By *Kevin Cronin* Date *6/28/11* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
0		NR	0-1.75 / 80%	8 32 42 100/3"		ML	Black to brown clayey SILT (topsoil), damp
						SP	Tan to light gray SAND, SILT, and fine to coarse GRAVEL, no staining or odor, hard, damp
2							[Sampler refusal at 1.75 feet on bedrock]
4							
6							
8 ▼			5-10 / 100%	RQD 40%			Brownish gray to medium gray DOLOMITE, hard, broken to slightly broken, horizontal fracture with clay infilling, severely to moderately weathered, 30° to 35° angled fractures at ~7.5', 7.9', and 8.2'
10							
12			10-15 / 100%	RQD 50%			Medium gray DOLOMITE, hard, broken to slightly broken, occasional vugs, moderately weathered horizontal to slightly angled fractures with clay infilling, ~50° angled fracture at ~12.8' *[~15-gallons water lost during core run]*
14							
16							
18			15-20 / 100%	RQD 80%			Medium gray DOLOMITE, hard, broken to massive, moderately weathered to slightly weathered, occasional calcite-filled vugs, horizontal fractures *[no water lost during core run]*
20							
22			20-25 / 95%	RQD 83%			Medium gray DOLOMITE, hard, broken to massive, moderately weathered horizontal fractures *[~10-gallons water lost during core run]*
24							

Continued Next Page

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

Drilling Log

Deep Bedrock Well **708 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
							Continued
26							
28			25-30 / 100%	RQD 73%			Medium gray DOLOMITE, hard, slightly broken to massive, ~50° angled fracture at ~26.6', ~30° angled fractures at ~27.8' and 29.6', moderately weathered horizontal fractures *[~15-gallons water lost during core run]*
30							
32			30-35 / 90%	RQD 49%			Medium gray DOLOMITE, hard, broken to massive, moderately weathered fractures -horizontal to slightly angled, -some mechanical, gypsum infilled vug at ~30.6' *[~40-gallons water lost during core run]*
34							
36							
38			35-40 / 100%	RQD 100%			Medium gray DOLOMITE, becoming dark gray below 38.3', massive, no fractures *[~20-gallons water lost during core run]*
40							Bottom of boring at 40.0 feet
42							
44							
46							
48							
50							
52							
54							
56							
58							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

Drilling Log

Deep Bedrock Well **709 DD**

Project *Data Gap Investigation* Owner *Gutert Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Surface Elev. *595.92 ft.* Total Hole Depth *80.0 ft.* North *1150388.97 ft.* East *1114136.674 ft.*

Top of Casing *595.61 ft.* Water Level Initial *NA* Static *8.4 ft.* Diameter *8 in./3.78 in*

Screen: Dia *2 in.* Length *10 ft.* Type/Size *PVC slotted/ 0.010 in.*

Casing: Dia *4 in. / 2 in.* Length *4 ft. / 30 ft.* Type *Steel / PVC*

Fill Material *Silica sand (00N), bentonite pellets/grout* Rig/Core *CME 85*

Drill Co. *Nothnagle Drilling* Method *3-inch dia. split-spoon / 6.25-inch I.D. HSA / HX core*

Driller *Steve Loranty* Log By *Kevin Cronin* Date *6/20/11* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS.
0		0.3	0-2 / 100%	4 9 17 35		ML	Light brown clayey SILT, some fine gravel
2						GP	GRAVEL, subangular, very dense, dry
							[Auger refusal at 2.4 feet on bedrock]
8			5-10 / 100%	RQD 0%			Medium gray DOLOMITE, highly fractured, hard, moderately weathered along fractures, occasional vugs at ~7.2' and 8.8' *[water returns to surface outside casing due to fractured rock]*
12			10-15 / 100%	RQD 17%			Medium gray DOLOMITE, fractured, hard, moderately weathered, horizontal fracture spacing of 2-3-inches, vug at ~11.8' *[~15-gallons water lost during core run]*
16			15-20 / 90%	RQD 65%			Medium dark gray DOLOMITE, fractured, hard, slightly weathered, horizontal fracture spacing increases to > 6-inches [driller reports drill stem dropped approx. 1-inch at ~16.8' -possible void] *[~20-gallons water lost during coring]*
22			20-25 / 95%	RQD 83%			Medium dark gray DOLOMITE, slightly broken, fractures at ~20.4', 20.6', 21.3', 21.9', 23.7', 24.0', 24.4', 24.7', and 25.0' *[~50-gallons water lost during core run]*

Continued Next Page

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT CORP.GDT 12/7/11

US Army Corps of Engineers.
Buffalo District
BUILDING STRONG.

Drilling Log

Deep Bedrock Well **709 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
							Continued
26			25-30 / 100%	RQD 99%			Light gray DOLOMITE, massive, fractures at ~27.0', 27.4', 28.1', 28.8', 28.9', and 29.8', slightly weathered *[~200-gallons water lost during core run]*
28							
30							
32			30-35 / 95%	RQD 94%			Light gray DOLOMITE, massive, occasional fractures at ~31.0' and 31.3'
34							
36							
38			35-40 / 100%	RQD 98%			Medium gray DOLOMITE, massive bedded, fractures at ~35.1', 36.3', and 37.3' appear mechanical *[~80-gallons water lost during core run]*
40							
42			40-45 / 100%	RQD 100%			Medium gray DOLOMITE, becoming dark gray below 37', calcite nodule at ~42.4', thin calcite filled vertical fracture from ~44'-45' *[~100-gallons water lost during core run, losing circulation]*
44							
46							
48			45-50 / 100%	RQD 94%			Dark gray DOLOMITE, becoming medium gray, massive bedded, fractures at ~45.9' and 46.9', mechanical break at ~49.3' *[~125-gallons water lost during core run]*
50							
52			50-55 / 100%	RQD 100%			Dark gray DOLOMITE, massive bedding with mechanical fractures, becoming more shaley *[~75-gallons water lost during core run]*
54							
56			55-60 / 100%	RQD 100%			DOLOMITE same as above *[~100-gallons water lost during core run]*
58							

Continued Next Page

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

Drilling Log

Deep Bedrock Well **709 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
							Continued
60			55-60 100%	RQD 100%			
62			60-65 100%	RQD 100%			Dark gray shaly DOLOMITE, massive bedding, slightly weathered, fractures at ~63.4' and 64.4' *[~100-gallons water lost during core run]*
64							
66							
68			65-70 100%	RQD 85%			Dark gray shaly DOLOMITE, slightly weathered fractures at ~65.3', 68.5', and 69.0', other breaks mechanical *[~100-gallons water lost during core run]*
70							
72			70-75 100%	RQD 78%			Dark gray shaly DOLOMITE, slightly weathered fractures at ~70.3', 70.6', 71.3', 71.9', 72.2', 72.7', 73.5', 73.9', and 74.6' *[~100-gallons water lost during core run]*
74							
76							
78			75-80 100%	RQD 82%			Dark gray shaly DOLOMITE, slightly weathered fractures at ~79.0' and 79.9', brachiopod fossils observed at ~79.9', fossiliferous from ~78.4'-80' *[~150-gallons water lost during core run]*
80							Bottom of boring at 80.0 feet
82							
84							
86							
88							
90							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers.
Buffalo District
BUILDING STRONG®

Drilling Log

Shallow Bedrock Well **710 D**

Project: Data Gap Investigation | Owner: Guterl Specialty Steel Corporation
Location: Lockport, New York | Proj. No.: 140416
Surface Elev.: 596.31 ft. | Total Hole Depth: 20.0 ft. | North: 1150424.51 ft. | East: 1114362.361 ft.
Top of Casing: 598.19 ft. | Water Level Initial: NA | Static: ▼ 10.3 ft. | Diameter: 8 in./3.78 in
Screen: Dia: 2 in. | Length: 10 ft. | Type/Size: PVC slotted/ 0.010 in.
Casing: Dia: 4 in. / 2 in. | Length: 7 ft. / 10 ft. | Type: Steel / PVC
Fill Material: Silica sand (00N), bentonite pellets/grout | Rig/Core: CME 85
Drill Co.: Nothnagle Drilling | Method: Direct push / 8-inch temp. casing / HX core
Driller: Steve Loranty | Log By: Kevin Cronin | Date: 7/1/11 | Permit #: NA
Checked By: | License No.:

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS.
0				PUSH		SP	Black CINDERS, COAL, and SAND (possible old railroad bed -fill), loose, dry
2		NR	0-3 / 75%			SM	Brown to tan clayey SILT, trace sand and fine gravel, stiff, damp, no staining or odor
4							[Sampler refusal at 3.0 feet on bedrock]
6							
8							
10 ▼			7-12 / 95%	RQD 9%			Medium gray DOLOMITE, hard, very broken to slightly broken, moderately weathered horizontal fractures, ~30° angled fracture at ~10.0', occasional calcite-filled vugs *[~20-gallons water lost during coring]*
12							
14			12-17 / 100%	RQD 72%			Medium gray DOLOMITE, hard, very broken to massive, moderately weathered horizontal fractures, occasional calcite-filled vugs [driller reports drill stem dropped approx. 1-inch at ~13' -possible void] *[~100-gallons water lost during coring]*
16							
18			17-20 / 95%	RQD 85%			Medium gray DOLOMITE, hard, broken to massive, moderately weathered fractures *[~110-gallons water lost during coring]*
20							Bottom of boring at 20.0 feet
22							
24							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

Drilling Log

Deep Bedrock Well **710 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Surface Elev. *596.38 ft.* Total Hole Depth *42.0 ft.* North *1150429.88 ft.* East *1114365.612 ft.*

Top of Casing *598.00 ft.* Water Level Initial *NA* Static ▼ *21.0 ft.* Diameter *8 in./3.78 in*

Screen: Dia *2 in.* Length *10 ft.* Type/Size *PVC slotted/0.010 in.*

Casing: Dia *4 in./2 in.* Length *7 ft./30 ft.* Type *Steel/PVC*

Fill Material *Silica sand (00N), bentonite pellets/grout* Rig/Core *CME 85*

Drill Co. *Nothnagle Drilling* Method *Direct push/8-inch temp. casing/HX core*

Driller *Steve Loranty* Log By *Kevin Cronin* Date *6/30/11* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS.
0							
		NR	0-3 / 100%			SP	Black, brown, and tan to light gray CINDERS, COAL, SAND, SILT, and GRAVEL (fill), loose, damp
2						SM	Brown to reddish brown sandy SILT, trace fine to medium gravel, stiff, damp
4							[Sampler refusal at 3.0 feet on bedrock]
6							
8							
10			7-12 / 100%	RQD 0%			Medium gray DOLOMITE, hard, broken, moderately weathered horizontal fractures -some with clay infillings *[no water lost during core run]*
12							
14			12-17 / 95%	RQD 79%			Medium gray DOLOMITE, hard, broken to massive, moderately weathered mostly horizontal fractures, ~40° angled fracture at ~15.3', severely weathered at ~15.7' and 16.1' *[~100-gallons water lost during coring]*
16							
18							
20	▼		17-22 / 100%	RQD 91%			Medium gray DOLOMITE, hard, broken to massive, horizontal fractures -moderately to slightly weathered at ~17.3', 17.5', 18.9', 20.0', 21.0', 21.4' and 22.0' *[~100-gallons water lost during coring]*
22							
24			22-27 / 100%	RQD 100%			Medium gray DOLOMITE, hard, massive, one fracture -slightly weathered at ~22.4', others are mechanical breaks *[~75-gallons water lost during coring]*

Continued Next Page

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

Drilling Log

Deep Bedrock Well **710 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
							Continued
26			22-27 100%	RQD 100%			
28							
30			27-32 100%	RQD 90%			Medium to light gray DOLOMITE, hard, massive, horizontal fractures at ~27.1', 27.2', 29.2', 31.1' and 31.5', slightly weathered *[~100-gallons water lost during coring]*
32							
34			32-37 100%	RQD 98%			Light gray DOLOMITE, hard, massive, fractures noted are mechanical breaks *[~200-gallons water lost during coring]*
36							
38							
40			37-42 100%	RQD 91%			Medium gray to dark gray DOLOMITE, hard, massive, brachiopods noted in core, slightly weathered horizontal fractures with calcite infilling at ~37.1', 37.8', and 41.5'
42							Bottom of boring at 42.0 feet
44							
46							
48							
50							
52							
54							
56							
58							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

Drilling Log

Shallow Bedrock Well 711 D

Project Data Gap Investigation — Owner Guterl Specialty Steel Corporation

Location Lockport, New York — Proj. No. 140416

Surface Elev. 593.07 ft. — Total Hole Depth 20.0 ft. — North 1149812.11 ft. East 1113953.226 ft.

Top of Casing 595.09 ft. — Water Level Initial NA — Static ▼ 10.5 ft. — Diameter 8 in./3.78 in

Screen: Dia 2 in. — Length 10 ft. — Type/Size PVC slotted/ 0.010 in.

Casing: Dia 4 in. / 2 in. — Length 7 ft. / 10 ft. — Type Steel / PVC

Fill Material Silica sand (00N), bentonite pellets/grout — Rig/Core CME 55

Drill Co. Nothnagle Drilling — Method Direct push / 6.25-inch I.D. HSA / HX core

Driller Steve Loranty — Log By Kevin Cronin — Date 7/6/11 — Permit # NA

Checked By — License No.

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS.
0				PUSH		SM	Black to brown sandy SILT and GRAVEL, loose, damp
2		NR	0-3 / 40%				Brown silty CLAY, some gravel, little sand, stiff, damp, no staining or odor
4						CL	
6							
8							Gray CONCRETE with aggregate (possible buried foundation)
10 ▼			7-12 / 95%	RQD 92%			Medium gray DOLOMITE, hard, broken to massive, horizontal moderately weathered fractures *[no water lost during coring]*
12							
14			12-17 / 100%	RQD 80%			Medium gray DOLOMITE, becoming dark gray below 13 feet, hard, broken to massive, horizontal moderately weathered fractures, very narrow vertical fractures from ~15.6' to 17.0' [Drill stem dropped approx. 1-inch at ~13' -lost water at that point] *[~250-gallons water lost during coring]*
16							
18			17-20 / 100%	RQD 70%			Gray DOLOMITE, hard, broken to massive, moderately weathered fractures, very narrow vertical fracture extends from ~17.0' to 17.6' and disappears *[~150-gallons water lost during coring]*
20							Bottom of boring at 20.0 feet
22							
24							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

Drilling Log

Deep Bedrock Well 711 DD

Project: Data Gap Investigation — Owner: Guterl Specialty Steel Corporation

Location: Lockport, New York — Proj. No.: 140416

Surface Elev.: 593.01 ft. — Total Hole Depth: 40.0 ft. — North: 1149813.26 ft. — East: 1113958.642 ft.

Top of Casing: 593.01 ft. — Water Level Initial: NA — Static: ▼ 9.3 ft. — Diameter: 8 in./3.78 in.

Screen: Dia: 2 in. — Length: 10 ft. — Type/Size: PVC slotted/ 0.010 in.

Casing: Dia: 4 in. / 2 in. — Length: 7 ft. / 30 ft. — Type: Steel / PVC

Fill Material: Silica sand (00N), bentonite pellets/grout — Rig/Core: CME 85

Drill Co.: Nothnagle Drilling — Method: Direct push / 3-inch split-spoon / 6.25-inch I.D. HSA / HX core

Driller: Steve Loranty — Log By: Kevin Cronin — Date: 7/5/11 — Permit #: NA

Checked By: — License No.:

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure). Geologic Descriptions are Based on the USCS.
0		NR	0-1 / 100%	9		SP	Black to tan SAND, some fine to coarse gravel and silt, loose, damp
2		NR	1-3 / 55%	11, 18, 22		CL	Brown to dark brown silty CLAY, little gravel, trace sand, very stiff, damp
4							[Auger refusal at 3.0 feet on bedrock]
8							
▼ 10			7-12 / 95%	RQD 89%			Medium gray DOLOMITE, hard, broken to massive, moderately weathered horizontal fractures, occasional vugs *[~60-gallons water lost during coring -starting at 10']*
12							
14			12-17 / 100%	RQD 67%			Medium gray DOLOMITE, hard, broken to massive, moderately weathered horizontal fractures -some with gray clay infilling, occasional vugs *[~150-gallons water lost during coring]*
16							
18							
20			17-22 / 90%	RQD 80%			Medium gray DOLOMITE, hard, broken to massive, moderately weathered horizontal fractures, vertical fracture at ~19.3' to 19.6' *[~150-gallons water lost during coring]*
22							
24			22-27 / 100%	RQD 84%			Medium gray to gray DOLOMITE, hard, slightly broken to

Continued Next Page

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

Drilling Log

Deep Bedrock Well **711 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
							Continued
26			22-27 100%	RQD 84%			massive, moderately to severely weathered horizontal fractures, clay filling, severely weathered fracture at ~23' *[~150-gallons water lost during coring]*
28							
30			27-32 100%	RQD 100%			Gray to light gray DOLOMITE, hard, massive, few moderately weathered fractures, occasional iron staining (had to break core to fit into box) *[~150-gallons water lost during coring]*
32							
34			32-37 100%	RQD 100%			DOLOMITE same as above *[~150-gallons water lost during coring]*
36							
38			37-40 100%	RQD 100%			Light gray DOLOMITE, hard, massive, occasional moderately weathered horizontal fractures at ~38.0' and 38.8' *[~100-gallons water lost during coring]*
40							Bottom of boring at 40.0 feet
42							
44							
46							
48							
50							
52							
54							
56							
58							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District
EVER ONWARD

Drilling Log

Shallow Bedrock Well **712 D**

Project Data Gap Investigation Owner Guterl Specialty Steel Corporation

Location Lockport, New York Proj. No. 140416

Surface Elev. 594.24 ft. Total Hole Depth 20.0 ft. North 1150173.71 ft. East 1114255.632 ft.

Top of Casing 596.48 ft. Water Level Initial NA Static DRY Diameter 8 in./3.78 in

Screen: Dia 2 in. Length 10 ft. Type/Size PVC slotted/ 0.010 in.

Casing: Dia 4 in. / 2 in. Length 5 ft. / 10 ft. Type Steel / PVC

Fill Material Silica sand (00N), bentonite pellets/grout Rig/Core CME 85

Drill Co. Nothnagle Drilling Method Direct push / 8-inch temp. casing / HQ core

Driller Steve Loranty Log By Kevin Cronin Date 8/1/11 Permit # NA

Checked By License No.

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure). Geologic Descriptions are Based on the USCS.
0			1-1.8 / 100%	P U S H		SP	Dark brown CINDERS, ASPHALT, and GRAVEL (fill)
						ML	Dark brown clayey SILT, loose, moist
2						SP	SAND, GRAVEL, and SILT (fill), loose, moist
							[Sampler refusal at 1.8 feet on weathered bedrock]
4							
6							
8			5-10 / 100%	RQD 16%			Medium gray DOLOMITE, hard, very broken to slightly broken, moderately weathered horizontal fractures, occasional vugs with calcite infilling *[~100-gallons water lost during coring]*
10							
12			10-15 / 95%	RQD 82%			Medium gray DOLOMITE, hard, very broken to massive, severely to moderately weathered, ~30° fracture at ~11.1', ~50° fracture at ~14.6', fossiliferous with occasional vugs *[~100-gallons water lost during coring]*
14							
16							
18			15-20 / 100%	RQD 71%			Light gray to gray DOLOMITE, hard, very broken to massive, severely weathered to weathered, ~30° fracture at ~16.1', ~50° fracture at ~18.2', brown clay at ~15.0', fossilliferous, occasional vugs *[~100-gallons water lost during coring]*
20							Bottom of boring at 20.0 feet
22							
24							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District

Drilling Log

Deep Bedrock Well **712 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Surface Elev. *593.99 ft.* Total Hole Depth *40.0 ft.* North *1150166.27 ft.* East *1114252.998 ft.*

Top of Casing *596.33 ft.* Water Level Initial *NA* Static ▼ *27.8 ft.* Diameter *8 in./3.78 in*

Screen: Dia *2 in.* Length *10 ft.* Type/Size *PVC slotted/ 0.010 in.*

Casing: Dia *4 in. / 2 in.* Length *5 ft. / 30 ft.* Type *Steel / PVC*

Fill Material *Silica sand (00 N), bentonite pellets/grout* Rig/Core *CME 85*

Drill Co. *Nothnagle Drilling* Method *8-inch temp. casing / HQ core*

Driller *Steve Loranty* Log By *Kevin Cronin* Date *8/1/11* Permit # *NA*

Checked By _____ License No. _____

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
0						SP	Dark brown CINDERS, ASPHALT, and GRAVEL (fill)
						ML	Dark brown clayey SILT, loose, moist
2						SP	SAND, GRAVEL, and SILT (fill), loose, moist
							[Sampler refusal at 1.8 feet on weathered bedrock]
4							
6							
8			5-10 / 95%	RQD 25%			Light to dark gray DOLOMITE, hard, very broken to slightly broken, highly fractured, severely to moderately weathered, much angled fracturing, occasional vugs, calcite noted *[~20-gallons water lost during coring]*
10							
12			10-15 / 100%	RQD 68%			Medium to dark gray DOLOMITE, very broken to massive, highly fractured, moderately weathered to severely weathered, occasional vugs, one 2-inch wide open vug at 14.0' *[~25-gallons water lost during coring]*
14							
16							
18			15-20 / 90%	RQD 87%			Medium gray DOLOMITE, hard, broken to massive, ~85° fracture at 17.3', occasional vugs, fossiliferous, weathered to severely weathered *[~75-gallons water lost during coring]*
20							
22			20-25 / 100%	RQD 85%			Medium gray DOLOMITE, hard, very broken to massive, occasional vugs, fossiliferous, weathered horizontal fractures, occasional mechanical fractures *[~100-gallons water lost during coring]*
24							

Continued Next Page

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers.
Buffalo District
BUILDING STRONG.

Drilling Log

Deep Bedrock Well **712 DD**

Project *Data Gap Investigation* Owner *Guterl Specialty Steel Corporation*

Location *Lockport, New York* Proj. No. *140416*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
							Continued
26							
28			25-30 100%	RQD 63%			Medium gray DOLOMITE, hard, very broken to massive, severely weathered to weathered, fossiliferous, occasional vugs, ~30° angle fracture at ~28.0' *[~100-gallons water lost during coring]*
30							
32			30-35 95%	RQD 70%			Medium gray DOLOMITE, hard, very broken to massive, weathered to slightly weathered, horizontal fractures, occasional mechanical fractures noted, gypsum crystals observed *[~200-gallons water lost during coring]*
34							
36							
38			35-40 100%	RQD 92%			Gray to dark gray DOLOMITE, hard, massive to broken below 39.8', slightly weathered horizontal fractures, occasional mechanical breaks, fossiliferous *[~200-gallons water lost during coring]*
40							Bottom of boring at 40.0 feet
42							
44							
46							
48							
50							
52							
54							
56							
58							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL STEEL.GPJ IT_CORP.GDT 12/7/11

US Army Corps of Engineers
Buffalo District

Drilling Log

Shallow Bedrock Well 713 D

Project: Data Gap Investigation | Owner: Guterl Specialty Steel Corporation

Location: Lockport, New York | Proj. No.: 140416

Surface Elev.: 597.31 ft. | Total Hole Depth: 20.0 ft. | North: 1150620.08 ft. | East: 1114594.67 ft.

Top of Casing: 599.54 ft. | Water Level Initial: NA | Static: ▼ 10.0 ft. | Diameter: 8 in./3.78 in

Screen: Dia: 2 in. | Length: 10 ft. | Type/Size: PVC slotted/ 0.0 10 in.

Casing: Dia: 4 in. / 2 in. | Length: 7 ft. / 10 ft. | Type: Steel / PVC

Fill Material: Silica sand (00N), bentonite pellets/grout | Rig/Core: CME 85

Drill Co.: Nothnagle Drilling | Method: Direct push / 8-inch temp. casing / HQ core

Driller: Steve Loranty | Log By: Kevin Cronin | Date: 8/1/11 | Permit #: NA

Checked By: | License No.:

COMMENTS

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure). Geologic Descriptions are Based on the USCS.
0			0-1.7 / 90%	PUSH		SP	Black to dark brown CINDERS, GRAVEL, and ASPHALT (fill)
						CL	Dark brown silty CLAY, stiff, moist
2						SP	SAND, SILT, and GRAVEL, loose, dry
							[Sampler refusal at 1.7 feet on bedrock]
4							
6							
8							
10 ▼			7-12 / 100%	RQD 54%			Light to medium gray DOLOMITE, hard, very broken to slightly broken, horizontal fractures at ~7.5' and 8.6', ~60° fracture at ~9.2', ~40° fracture at 10.5', weathered to severely weathered *[~100-gallons water lost during coring]*
12							
14			12-17 / 100%	RQD 44%			Medium gray DOLOMITE, becomes gray below 12.2', hard, very broken to slightly broken, weathered to severely weathered fractures at 12.0', 14.8', and 15.1', fossiliferous *[~100-gallons water lost during coring]*
16							
18							
20							Bottom of boring at 20.0 feet
22							
24							

WITH USACE LOGO - DRAFT Rev: 12/5/11 GUTERL_STEEL.GPJ IT_CORP.GDT 12/7/11

APPENDIX D

Well Development Records
(Provided on Same CD as Appendix A)

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTERL
Project Number: 140416
Well Number: ~701 DD
Date Developed: 7/11/11
Field Personnel: KEVIN CROWIN
Well Development Method: WHALE PUMP, YSI 6280

Total Well Depth:	~42.80' BTOC (2") HARD	Time Started:	7/11/11 0859
Depth to Water Table:	~8.95' BTOC	Time Completed:	7/11/11 0916
Height of Water Column:	33.85	Notes:	GOOD RECOVERY AFTER PUMP TURNED OF
Well Diameter:	~2"		
Well Volume:	~5.8 GALS/VOL		

CUMULATIVE

	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity
0859	Initial Reading	13.15	8.42	2.417	12.76	-293.7	867.9
0900	~3 GALS	10.50	7.86	2.073	3.80	-325.5	41.5
0901	~4 "	10.46	8.35	2.226	3.46	-347.7	48.6
0902	~5 "	10.44	8.00	2.303	3.65	-357.8	65.9
0904	~10 "	10.39	7.61	2.331	3.79	-370.5	69.6
0906	~12 "	10.40	7.53	2.343	3.50	-373.9	62.1
0907	~15 "	10.40	7.49	2.352	3.84	-376.0	53.2
0909	~18 "	10.41	7.44	2.360	4.04	-376.2	56.7
0912	~20"	10.37	7.42	2.363	4.11	-375.6	54.8
0915	~25"	10.38	7.39	2.367	4.81	-372.9	46.4
0916	~27"	10.39	7.38	2.368	4.46	-377.0	45.0

Comments:

Prepared by: KEVIN CROWIN
Signature/Date: Kevin Crowin 7/11/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTERL
Project Number: 140146
Well Number: 702DD
Date Developed: 7/11/11, 7/13-15/11, 7/12/11,
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YST 6200

Total Well Depth: ~41.64' BTOC (2" PVC)	Time Started: 7/11/2011 0833
Depth to Water Table: ~8.74' BTOC	Time Completed: 7/15/2011 1037
Height of Water Column: 32.90'	Notes: ▽ @ ~17.16' BTOC @ 1353, 7/11/11
Well Diameter: ~2"	▽ @ 12.10' BTOC @ 0800, 7/12/11
Well Volume: ~5.6 GALS/VOL	

CUMUL

	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
0833	Initial Reading	14.18	9.18	2.941	14.83	-252.8	2681	
0835	~3 GALS	~~10.99~~	8.55	1.458	5.40	-278.2	1249	
0836	~4 "	11.96	9.10	1.434	6.44	-296.1	1262	
0838	~5 "	~~8.42~~ 12.66	8.92	2.298	6.23	-316.5	1265	DRIES OUT
1355	—	17.65	8.39	6.430	13.97	-301.3	1261	
1356	~6 GALS	11.32	7.61	5.481	9.46	-302.3	1249	
1357	~8 "	11.32	7.54	4.667	7.06	-293.4	1253	DRIES OUT
1358	~9 "	11.08	7.45	4.710	7.44	-291.2	1256	↓
0806	—	12.05	8.06	4.674	11.46	-314.6	1317	7/12/11
0808	~11 GALS	11.01	7.53	4.250	7.03	-349.2	1286	
0809	~12 GALS	12.26	7.38	4.413	6.73	-372.0	1319	DRIES OUT
1153	~15 "	11.75	7.73	4.941	5.18	-362.0	543	@

Comments: ▽ RECOVERS OVERNIGHT, GIVES ~3 GALS BEFORE DRYING OUT

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cronin 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTEL Project Number: 140146

Well Number: 702DD Date Developed: 7/11,12,13,14,15/11

Field Personnel: KEVIN CRONIN

Well Development Method: WHALE PUMP, YSI 6280

Total Well Depth:	Time Started:
Depth to Water Table:	Time Completed:
Height of Water Column:	Notes: ▼@ ~12.50' BTOC @ 0807, 7/13/11 ▼@ ~26.12' @1026, 7/13/11 ▼@ 26.95' BTOC @ 1308, 7/13/11. ▼@ ~12.59' @ 0755, 7/14/11
Well Diameter:	
Well Volume:	

	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
7/12/11	Initial Reading							
1407	~ 16.5 GALS	11.78	7.63	4.699	7.23	-343.3	146.0	DRIES OUT 7/13/11
0810	INITIAL	12.56	8.35	4.569	17.54	-292.6	1306	
0811	~ 18 GALS	10.82	7.36	3.809	7.51	-329.8	280.8	
0813	~ 19	11.73	7.14	3.886	7.03	-346.7	444.3	
0814	~ 19.5 "	11.90	7.09	3.934	7.38	-352.7	498.6	DRIES OUT
1028	~ 21 "	11.48	7.53	4.882	17.5	-276.8	50.6	"
1310	~ 23 "	11.73	7.32	4.459	-0.33?	-310.6	89.3	"
0809	INITIAL	13.30	8.39	4.105	9.27	-280.1	586.0	7/14/11
0810	~ 24 GALS	10.95	7.61	3.683	3.02	-301.9	192.0	
0813	~ 28 GALS	12.00	7.21	3.798	1.33	-336.1	464.5	
1116	~ 30 GALS	11.52	7.60	4.394	1.74	-323.6	40.5	DRIES OU

Comments: SULFIDE SMELL NOTED @ 1028 7/13/11

Prepared by: KEVIN CRONIN

Signature/Date: Kevin Cron 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

4/2 680-9979

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTEKL
Project Number: 140416
Well Number: 702DD
Date Developed: 7/11-14, 15/11
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YSI 8260

Total Well Depth:	Time Started:
Depth to Water Table:	Time Completed:
Height of Water Column:	Notes: ∇ @ ~12.09' BTOC @ 0756, 7/15/11
Well Diameter:	
Well Volume:	

CUMULATIVE

	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
1311								
~30 GALS	Initial Reading	15.42	7.89	4.512	-30.04?	-331.4	982	
1313	~32 GALS	11.64	7.23	4.627	-0.10	-320.2	35.6	
0759	INITIAL	12.08	7.84	3.875	6.08	-266.9	28.6	7/15/11
0800	~33 GALS	10.89	7.42	3.608	2.74	-279.4	87.4	
0802	~36 "	12.08	7.08	3.645	1.38	-307.6	19.8	BUBBLES OUT
1036	~37 "	11.28	7.18	4.555	-2.40	-304.3	49.7	
1037	38 "	11.58	7.04	4.406	-1.25	-303.1	53.2	BUBBLES OUT

Comments: SULFIDE ODOR NOTED

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cron 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTERL
Project Number: 140416
Well Number: 703 DD
Date Developed: 7/11/11
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP YSI 6280

Total Well Depth:	~ 41.75' BTOC (2")	Time Started:	7/11/11 0934
Depth to Water Table:	~ 23.12' BTOC	Time Completed:	7/11/11 0959
Height of Water Column:	18.63	Notes:	NOTE; SULPHUR ODOR - SLIGHT
Well Diameter:	~ 2"		
Well Volume:	~ 3.2 GALS/VOL		

	CUMULATIVE Well Volume Removed	Temp °C	pH S.U.	mS/cm Conductivity	mg/l DO	ORP/Eh	NTU Turbidity
0934	Initial Reading	15.20	7.96	7.951	14.28	-312.5	1247
0936	~ 3 GALS	10.35	7.41	5.765	7.71	-370.1	1239
0938	~ 5 GALS	10.36	7.22	4.357	8.42	-382.0	1241
0940	~ 8 GALS	10.40	7.09	5.260	7.86	-387.6	1241
0941	~ 10 GALS	10.41	7.05	5.288	7.78	-387.7	373.2
0943	~ 12 "	10.41	7.02	5.302	8.02	-390.3	144.9
0945	~ 15 "	10.43	6.98	5.264	8.30	-390.8	87.5
0949	~ 22 "	10.43	6.94	5.240	8.78	-393.4	48.5
0951	~ 24 "	10.43	6.92	5.473	8.69	-393.4	41.3
0955	~ 28 "	10.46	6.88	6.438	7.92	-392.7	33.3
0957	~ 30 "	10.45	6.86	6.992	7.59	-390.2	32.0
0959	~ 33 "	10.44	6.85	7.547	7.25	-392.1	30.7

Comments: GOOD RECOVERY

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cronin 7/11/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTTERL STEEL
Project Number: 140446
Well Number: ~ 704 DD
Date Developed: 7/7/11
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YSI 8260

Total Well Depth:	~ 38.78	Time Started:	1254 7/7/11
Depth to Water Table:	~ 2.43' BTOC	Time Completed:	1335 7/7/11
Height of Water Column:	36.35'	Notes:	STABILIZE @ ~12' BGL
Well Diameter:	~2"		
Well Volume:	~6.18 GAL/VOL		

	Well Volume Removed	Temp °C	pH S.U.	Conductivity mS/cm	DO mg/L	ORP/Eh	Turbidity NTU
1254	Initial Reading	13.18	10.13	4.905	9.62	-316.3	1265
1258		11.75	10.22	1.941	3.69	-286.5	178.6
1300	~ 10 GALS	11.46	9.34	1.832	2.05	-400.9	680.3
1305		11.41	8.34	1.925	1.46	-410.8	187.3
1310		11.37	7.88	1.979	2.52	-411.0	78.2
1315	~ 30 GALS	11.40	7.70	2.015	2.42	-414.4	57.1
1320		11.34	7.59	2.045	2.33	-412.6	42.8
1325		11.34	7.48	2.088	2.43	-413.4	33.5
1330		11.31	7.41	2.139	3.97	-419.9	28.6
1335	~60 GALS	11.26	7.36	2.172	4.19	-419.1	31.5

Comments: GOOD RECOVERY AFTER

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cronin 7/7/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUNERT
Project Number: 140416
Well Number: 705D
Date Developed: 7/8/2011, 7/11/2011, 7/12/2011
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YSI 6280

Total Well Depth:	~21.22' BTOC (2" PVC)	Time Started:	1218 7/8/2011
Depth to Water Table:	~4.34' BTOC	Time Completed:	1110 7/15/2011
Height of Water Column:	~16.88'	Notes:	TOB: 21.22'
Well Diameter:	2"		▽ @ ~6.34' BTOC @ 1102, 7/11/11
Well Volume:			▽ @ ~6.50' BTOC @ 0847, 7/12/2011

CUMULATIVE

	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
1218	Initial Reading	13.09	11.74	2.221	11.33	-357.8	167.7	
1220	~3 GAL	14.91	12.14	2.510	7.69	-322.7	133.3	DRIES OUT
1244	~4.5 GAL	12.82	11.80	2.342	9.91	-308.8	32.5	DRIES OUT
1302	~5.5 GAL	12.56	11.39	2.373	10.33	-289.8	13.0	"
7/11/11 1116	INITIAL	13.99	11.54	1.935	13.73	-307.1	241.5	
1118	~7.5 GALS	12.79	10.81	1.575	8.51	-309.1	75.3	DRIES OUT
1119		13.57	10.03	1.750	11.55	-285.1	70.7	
1153	~10 GALS	12.54	11.31	1.823	8.82	-290.9	22.1	DRIES OUT
1435	~11 "	11.93	9.15	1.846	10.62	-295.4	97.8	
1436	~12 "	14.01	8.87	1.779	9.48	-303.4	91.1	DRIES OUT
0851	—	12.98	8.48	1.919	14.25	-285.2	96.5	7/12/11
0853	~14 GALS	14.58	8.91	1.799	11.85	-292.9	92.0	DRIES OUT

Comments: ▽ RECOVERS IN A FEW HOURS; GIVES ~2.5 GALS BEFORE DRYING OUT

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cronin 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTIERL
Project Number: 140416
Well Number: 705D
Date Developed: 7/8, 11-15/2011
Field Personnel: KEVIN CROWIN
Well Development Method: WHALE PUMP YSI 6280

Total Well Depth:	Time Started:
Depth to Water Table:	Time Completed:
Height of Water Column:	Notes: ▽ @ 6.64 BTOC @ 0847, 7/13/11 ▽ @ ~6.85' BTOC @ 1104, 7/13/11 ▽ @ ~6.63' BTOC @ 1342, 7/13/11 ▽ @ ~6.80 BTOC @ 0847, 7/14/11
Well Diameter:	
Well Volume:	

	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
7/12/11 1256 1400	Initial Reading	12.69	9.62	2.040	16.87	-309.0	85.4	
1258	~ 16 GALS	11.80	9.13	1.984	14.15	-311.7	82.3	
7/13/11	INITIAL	12.13	9.33	1.799	20.14	-281.4	1312	
0850	~18 GALS	12.70	8.48	1.945	13.41	-284.3	65.7	
0851	~ 18.5 "	13.97	8.33	1.921	13.75	-286.5	71.5	DRIES OUT
1107	~ 21.0 "	14.02	8.12	1.968	9.06	-258.3	41.5	"
1345	~ 22.0 "	13.35	7.96	2.000	13.69	-275.6	33.6	
1346	~ 23.0 "	14.26	7.82	1.984	7.86	-278.2	34.9	DRIES ON
0850	INITIAL	14.46	8.48	2.088	11.15	-266.1	130.4	
0852	~ 24 GALS	11.69	8.01	2.068	8.14	-268.2	48.2	
0853	~ 25.5 "	13.99	7.91	1.947	6.96	-275.5	40.1	DRIES OUT
1149	27 "	13.91	7.88	1.899	6.72	-301.5	52.5	"

Comments: ~~SULFUR ODOR NOTED~~ KC

Prepared by: KEVIN CROWIN
Signature/Date: Kevin Crowin 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTEKL
Project Number: 140416
Well Number: 705D
Date Developed: 7/8, 11-15/2011
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YSI 6280

Total Well Depth:	Time Started:
Depth to Water Table:	Time Completed:
Height of Water Column:	Notes: RC ~ 7.00' BTOC @ 0840, 7/15/11
Well Diameter:	
Well Volume:	

CUMULATIVE

Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
~ 27 GALS Initial Reading							
1345 ~ 29 GALS	13.73	7.62	2.031	6.29	-298.6	36.9	DRILLS OUT 7/15/11
0850 ~ 30 GALS	11.57	8.97	2.128	7.70	-249.5	30.8	
0851 ~ 31.5 GALS	13.84	8.37	1.975	5.85	-256.5	67.1	DRILLS OUT 11
1110 ~ 33 "	13.81	7.64	2.023	6.20	-280.8	31.8	

Comments:

Prepared by: KEVIN CRONIN
Signature/Date: [signature] 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTHRIE
Project Number: 140416
Well Number: 705 DD
Date Developed: 7/8/2011 7/13-15/2011 7/14/2011 7/12/2011
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YSI 6280

~41.54' BTOC @ 1315 - HARD

Total Well Depth:	~40.67' BTOC (2" PVC) SOFT	Time Started:	1206 7/8/2011
Depth to Water Table:	~6.03' BTOC	Time Completed:	1106 7/15/2011
Height of Water Column:	34.64'	Notes:	▽ @ ~6.92' BTOC @ 1100; 7/14/11 TD 41.54' ▽ @ 16.31' BTOC @ 0848, 7/15/11
Well Diameter:	2"		
Well Volume:	~5.89 GAL/VOL		

CUMULATIVE

	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
1206	Initial Reading	14.60	11.35	3.642	13.11	-257.8	943.7	
1210	~5 GAL	13.55	12.00	2.120	8.23	-319.8	254	DRIES OUT
1310	RESTART	14.44	11.55	3.137	11.68	-291.8	152.8	
1312	~6 GAL	11.35	12.05	7.84		-309.7	1251	DRIES OUT
7/14/11 1105	INITIAL	15.71	11.02	5.238	20.32	-240.9	1253	
1107	~8 GAL	10.59	10.49	4.720	18.70	-248.7	91.0	
1109	~10 GAL	11.45	12.21	6.233	16.21	-284.5	207.2	
1110	~12 GAL	13.36	12.23	5.916	15.56	-290.3	300.9	DRIES OUT
1155	~12.5 GAL	14.55	9.55	4.862	13.60	-265.0	1286	DRIES OUT
1431	~13 GALS	12.19	10.06	5.294	17.62	-251.5	311.2	DRIES OUT
0911	—	14.07	9.59	4.992	17.41	-261.2	162.4	7/15/11
0914	~17 GALS	11.27	11.42	5.043	14.61	-256.0	106.5	DRIES OUT

Comments: ▽ RECOVERS OVERNIGHT, GIVES ~3-4 GALLONS BEFORE DRYING OUT

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cronin 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GVTELL
Project Number: 140416
Well Number: 705 2D
Date Developed: 7/8, 11-15/11
Field Personnel: KEVIN CROWIN
Well Development Method: WATER PUMP, YSI 6280

Total Well Depth:	Time Started:
Depth to Water Table:	Time Completed:
Height of Water Column:	Notes: ▽ @ ~15.29' BTOC @ 0848 ; 7/13/11 ▽ @ ~34.23' BTOC @ 1102, 7/13/11 ▽ @ ~30.58' BTOC @ 1344, 7/13/11 ▽ @ ~15.72' BTOC @ 0848, 7/14/11
Well Volume:	

CUMULATIVE

	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
7/12/11 1251	Initial Reading	14.31	10.17	5.330	16.15	-274.0	458.8	
1253	~18 GALS	11.17	9.99	4.751	16.78	-289.9	210.6	
7/13/11	INITIAL	12.61	9.12	5.136	19.45	-267.2	1306	
0855	~19 GALS	10.48	8.61	5.009	15.73	-279.5	146.9	
0856	~20 "	10.31	8.67	4.800	14.01	-276.5	60.3	
0857	~21.5 "	11.12	11.27	4.681	16.49	-275.1	128.1	DRUM OUT
1354	~23 "	10.82	9.25	4.676	14.50	-269.8	200.9	"
0857	INITIAL	13.01	8.99	4.759	14.50	-256.4	1018	7/14/11
0858	~24 GALS	10.44	8.62	4.969	7.85	-260.1	118.7	
0900	~27 GALS	11.04	11.18	4.534	7.83	-268.7	130.8	DRUM OUT
1144	~28 "	11.24	9.13	4.915	9.86	-254.9	60.5	"
1341	~28.5 "	11.48	8.47	4.966	9.49	-247.4	190.0	"

Comments:

Prepared by: KEVIN CROWIN
Signature/Date: Kevin Crowin 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTIERL
Project Number: 140416
Well Number: 705DD
Date Developed: 7/8, 11-15/2011
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YSI 6280 METER

Total Well Depth:	Time Started:
Depth to Water Table:	Time Completed:
Height of Water Column:	Notes: TOC ~16.19' BTOC @ 0842, 7/15/11
Well Diameter:	
Well Volume:	

	Conductivity	°C	S.U.	mS/cm	mg/L		N.T.U
7/15/11	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
~28.5 GALS	Initial Reading	11.46	5.04	5.149	11.4	-234.8	70.4	0844
0846	~31 GALS	10.39	8.15	4.600	6.83	-247.0	68.0	
0847	~32 "	11.03	10.42	4.432	6.99	-253.1	65.4	BLOWS OUT
1100	~33 "	11.55	8.68	4.872	8.77	-241.1	42.8	"

Comments:

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cronin 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTERL STEEL
Project Number: 140416
Well Number: 706DD
Date Developed: 7/7/2011
7/8/2011, 7/11, 12/2011
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YSI 8260

Total Well Depth:	~ 42.25' BTOC (2" PVC)	Time Started:	1227 7/7/2011
Depth to Water Table:	~ 8.05' BTOC	Time Completed:	1424 7/12/2011
Height of Water Column:	34.20'	Notes:	▽ @ 8.22' @ 0810, 7/8/11 (▽ @ MW-19: ~8.90' BTOC @ 0811). DRYING OUT ▽ @ MW-19 @ ~8.92' BTOC @ 1400
Well Diameter:	~ 2"		
Well Volume:	~ 5.5 GAL/VOL.		

	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
	Initial Reading	11.87	9.71	0.897	3.45	-377.0	1262	7/7/11
1227		12.92	9.85	0.906	0.71	-386.2	1278	
1230	~~1235 KC~~	KCF						
0816	INITIAL READING	12.67	9.34	1.882	10.37	-313.0	1257	
0820	~6 GALS	14.19	8.85	1.898	2.97	-337.6	1278	7/8/11
0850		13.30	8.65	2.357	10.38	-271.0	1258	
0854	~10 GALS	11.66	8.26	2.060	2.69	-347	251.9	
0924		13.06	8.36	2.200	11.02	-287.3	965	
0927	~14 GALS	11.73	7.92	1.965	3.01	-359.2	136.7	1358 @
1402		15.05	8.90	2.100	8.92	-275.9	157.3	▽ ~8.28'
1404		11.69	8.29	1.803	3.54	-347.7	53.0	
1406	~19 GALS	14.52	8.03	1.781	2.23	-386.5	823.1	

7/7/11:
Comments: ▽ @ ~8.71' BTOC (2" PVC) @ MW-19 @ 1225. 706DD DRIES OUT @ ~1232 (~5 GALS REMOVED) RECOVERING. 7/8/11: DRIES OUT AFTER ~6 GALS. - LET ▽ RECOVER (NO DRAWDOWN OBSERVED @ MW-19 DURING 706DD PUMPING SEVERAL TIMES. ▽ RECOVERS IN A FEW HOURS; GIVES ~3 GALS BEFORE DRYING OUT.

Prepared by: KEVIN CRONIN

Signature/Date: Kevin Cronin 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTCELL
Project Number: 140416
Well Number: 706 DD
Date Developed: 7/7/2011
7/8/2011
7/11/2011
7/12/2011
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YSI 6260

Total Well Depth: ~42.25' BTOC (2" PVC)	Time Started: 1227 7/7/11
Depth to Water Table:	Time Completed:
Height of Water Column:	Notes: ▽ @ ~8.70' BTOC @ 10 20; 7/11/11 RECOVERS IN ~2 HRS
Well Diameter: 2"	
Well Volume:	

TD: 42.25'

	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
1439	Initial Reading	14.17	8.48	2.132	9.17	-279.4	127.0	▽ 12.77'
1441		11.55	8.00	1.705	2.89	-386.9	54.2	
1443	~23 GALS	11.89	7.89	1.710	2.13	-395.6	78.1	DRIED OU
1023	INITIAL	15.65	8.26	2.343	11.27	-327.1	843.2	7/11 ↓
1024	~25 GALS	11.71	8.00	1.815	4.43	-357.2	64.2	
1027	~27 "	13.37	7.75	1.685	3.15	-370.6	600.2	
1028	~29 "	13.67	7.67	2.145	6.14	-344.4	1273	DRIED OU
1229	~	16.00	8.00	2.199	10.76	-271.6	1263	
1231	~31 GALS	11.98	8.27	1.963	4.66	-322.4	1259	
1233	~33 GALS	13.97	8.11	1.885	3.34	-348.2	816.3	
1234	~34 "	13.27	8.03	2.077	4.73	-328.6	1269	DRIED OUT
1401	~35	11.81	7.96	1.828	6.09	-268.7	89.2	
1417	~37 "	13.38	7.63	1.850	4.17	-284.0	1271	

Comments:

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cronin 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTERL
Project Number: 140416
Well Number: 706 DD
Date Developed: 7/7, 8, 11, 12 / 2011
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YST 6280

Total Well Depth:	Time Started:
Depth to Water Table:	Time Completed:
Height of Water Column:	Notes: ∇ @ ~ 8.83' BTOC @ 0825, 7/12/11 ∇ @ ~ 8.85' @ 1203, 7/12/11
Well Diameter:	
Well Volume:	

CUMULATIVE

7/12/11	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
0829	Initial Reading	14.75	8.05	1.911	15.62	-307.3	1334	
0830	~ 38 GALS	11.69	7.87	1.877	8.26	-320.7	52.2	
0831	~ 39 "	12.63	7.70	1.616	4.25	-358.0	461.2	
0833	~ 40 "	13.88	7.62	1.716	5.84	-352.0	1336	DRIES OUT
1210	~ 45 "	13.17	7.73	1.885	5.14	-341.5	1336	"
1220	~ 50 "	13.19	7.64	1.726	5.09	-340.7	1335	"

Comments:

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cronin 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTELL STEEL
Project Number: 140416
Well Number: 707 DD
Date Developed: 7/7/2011
7/8/2011, 7/11/2011
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YSI 6280

Total Well Depth: ~ 39.50' BTOC (2" PVC)	Time Started: 1130 7/7/2011
Depth to Water Table: ~1.94' BTOC	Time Completed:
Height of Water Column: ~ 37.56'	Notes: ▽ @ ~35.53' @ 0756 - 7/8/11 (0.7 GAL/VOL). ▽ @ 37.05' BTOC @ 1044, 7/11/11 TD: ~39.53'. ▽ @ 37.36' BTOC @ 0750, 7/12/11
Well Diameter: ~2"	
Well Volume: ~6.4 GAL/VOL	▽ @ 37.24' @ 0751, 7/13/11

CUMULATIVE

Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity
Initial Reading	11.62	10.92	2.756	9.60	-247.6	1256
	14.01	11.55	1.331	9.21	-302.8	1250
	13.69	10.66	5.860	4.49	-331.2	1260
~10 GALS	14.47	10.66	3.662	4.86	-236.0	1268
INITIAL READING	13.36	9.82	3.052	12.12	-207.6	1267
<0.1 GAL (10.1 GAL)	NM					
INITIAL	NOT ENOUGH WATER TO COVER PROBES OF YSI METER					
"	" "	" "	"	" "	" "	

1130
1135
1140
KC 1145
1150
0759
1349
7/11/11 0758

7/7/11 ↑ 7/8/11 ▽ @ 37.00' ▽ @ 37.05' 7/13/11

Comments: 7-7-2011; SWAP OUT WHALE PUMP @ 1148 AS LINE IS BLOCKED W/ LT. GRAY SEDIMENT. 2ND WHALE PUMP CAN'T LIFT TO TANK ON TRUCK TRY DRAINING TO BUCKETS ON GROUND - APPEARS WELL DRYING OUT. MOVE OFFSITE @ 1215 - WILL COME BACK. 7-8-2011; WELLS DRIES OUT AFTER ~30 SEC OF PUMPING, WILL REVISIT LATER TODAY. NOT ENOUGH WATER TO COVER PROBES @ 1349

Prepared by: KEVIN CRONIN

Signature/Date: Kevin Cronin 7/15/11

▽ @ ~37.20' BTOC @ 0749, 7/14/11
▽ @ ~37.09' BTOC @ 0749, 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTEKL STEEL
Project Number: 140416
Well Number: 708 ~~MW~~ MW DD
Date Developed: 7-6-2011
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YSI 6820

Total Well Depth: ~39.67' BTOC (2" PVC)	Time Started: 1454
Depth to Water Table: ~8.59' BTOC	Time Completed: 1530
Height of Water Column: 31.08'	Notes: STABILIZED ~18' BTOC DURING DEVELOPMENT. GOOD RECOVERY W/ PUMP OFF
Well Diameter: ~2"	
Well Volume: ~5.28 GALS/VOL.	

Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
1454 Initial Reading	13.26	10.20	1.441	6.54	-280.7	1265	
1500	12.54	8.67	1.608	1.59	-376.0	1258	
1505 ~20 GALS	11.49	7.84	1.743	0.90	-395.3	535	
1510 ~~~20 GALS~~	11.47	7.57	1.784	0.73	-381.0	164.7	
1515	11.41	7.44	1.823	0.83	-374.7	130.7	
1520 ~40 GALS	11.39	7.36	1.845	0.87	-387.3	81.0	
1525	11.38	7.33	1.846	0.84	-406.9	51.1	
1530 ~60 GALS	11.39	7.31	1.878	0.82	-417.2	34.9	@ ~18.20' BTOC END

Comments: VERY TURBID - LIGHT GRAY, CLEARING UP

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cronin 7/6/2011

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTEKL STEEL
Project Number: 140416
Well Number: 709DD
Date Developed: 7-6-2011
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YSI 6820 (S/N 03M0382 AA)

Total Well Depth: ~ 40.24' BTOC (2" PVC) 1330	Time Started: 1339
Depth to Water Table: ~ 8.04' BTOC 1328	Time Completed: 1425
Height of Water Column: 32.20'	Notes: GOOD RECOVERY STABILIZED ~ 22' BTOC/ DURING DEVELOPMENT
Well Diameter: ~ 2"	
Well Volume: ~ 5.47 GALS/ VOL.	

TIME	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
1339	Initial Reading	12.08	8.25	2.408	4.85	-295.8	962	
1345		11.30	7.66	1.650	0.78	-385.6	30.6	
1350		11.22	7.59	1.618	0.50	-397.8	77.0	
1355		11.21	7.58	1.595	0.39	-409.3	37.4	
1400	~ 20 GALS	11.21	7.57	1.572	0.34	-413.3	28.8	
1405		11.19	7.56	1.565	0.35	-415.0	31.1	
1410	~ 30 GALS	11.19	7.56	1.557	0.40	-417.4	27.4	
1415		11.21	7.55	1.553	0.32	-403.8	24.4	
1420	~ 50 GALS	11.20	7.54	1.549	0.37	-407.8	22.5	
1425	~ 60 GALS	11.17	7.53	1.546	0.34	-421.1	20.2	~22.54' @ END

Comments:

Prepared by: KEVIN CRONIN

Signature/Date: Kevin Cronin 7/6/2011

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTEKL
Project Number: 140416
Well Number: 710D
Date Developed: 7/7/2011
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP / YSI 6620

Total Well Depth: ~26.37' BTOC (2" PVC)	Time Started: 1026
Depth to Water Table: ~12.85' BTOC	Time Completed: 1100
Height of Water Column: 6.52'	Notes: STABILIZE ~16.45' BTOC
Well Diameter: 2"	
Well Volume: ~1.45 GAL/VOL	

TIME	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity
1026	Initial Reading	11.00	7.43	1.603	4.03	-403.2	40.3
1030	~15 GALS	10.74	7.20	1.574	2.36	-411.5	82.2
1035		10.73	7.20	1.567	2.44	-417.5	63.5
1040	~25 GALS	10.75	7.19	1.566	2.38	-407.9	47.0
1045		10.76	7.19	1.565	2.50	-388.7	26.6
1050	~40 GALS	10.75	7.19	1.555	2.80	-390.1	16.4
1055		10.77	7.19	1.565	2.01	-388.6	10.5
1100	~60 GALS	10.79	7.18	1.565	3.29	-386.7	6.5

▼ 17.12'

Comments: ▼ @ ~13.00' @ 1113

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cronin 7/7/2011

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTHRIE Project Number: 140416

Well Number: 710 DD Date Developed: 7/7/11

Field Personnel: KEVIN CRONIN

Well Development Method: WHALE PUMP, YSI 6820

Total Well Depth:	~ 41.95' BTOC (2" PVC)	Time Started:	0936
Depth to Water Table:	~22.60' BTOC	Time Completed:	1015
Height of Water Column:	~19.35'	Notes:	STABILIZE ~28.4' DURING PUMPING
Well Diameter:	~ 2"		
Well Volume:	~ 3.3 GAL/VOL		

TIME	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity
0936	Initial Reading	10.67	8.22	2.103	3.34	-293.5	357
0940		10.65	7.69	2.091	2.85	-348.3	253
0945		10.65	7.28	2.157	2.57	-382.7	226
0950	~25 GALS	10.64	7.19	2.159	3.48	-392.1	251
0955		10.65	7.15	2.150	2.73	-374.9	123.1
1000	~40 GALS	10.62	7.15	2.144	2.91	-392.5	76.4
1005	~45 GALS	10.60	7.14	2.139	3.48	-394.4	68.4
1010	~50 GALS	10.61	7.14	2.138	3.37	-373.9	38.5
1015	~55 GALS	10.62	7.14	2.136	3.44	-400.7	38.0

Comments: ▼ @ ~19.97' BTOC @ 1047

Prepared by: KEVIN CRONIN

Signature/Date: Kevin Cronin 7/7/2011

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTEL
Project Number: 140416
Well Number: 711 D
Date Developed: 7/8/2011 7/12-15/2011 7/11/2011
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YSI 8260

Total Well Depth:	~ 21.95' BTOC (2" PVC)	Time Started:	0942 7/8/2011
Depth to Water Table:	~ 12.55' BTOC	Time Completed:	1057 7/15/2011
Height of Water Column:	9.40'	Notes:	▽ @ 12.53' BTOC @ 0750, 7-11-11 TD: 21.95' (HARD
Well Diameter:	2"		
Well Volume:	~ 1.6 GAL/VOLUME		

	Well Volume Removed (TOTAL)	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
0942	Initial Reading	14.62	10.54	1.144	12.20	-253.8	1262	
0945	~4 GAL	13.73	9.62	1.354	6.24	-300.3	349.6	
1145		12.61	10.65	1.095	10.01	-244.3	188.1	▽@12.54'
1146	~8 GAL	13.59	10.21	1.213	4.09	-211.2	139.5	
1335		13.48	11.33	1.081	10.65	-298.3	69.5	▽@12.56'
1337		13.41	9.78	1.256	5.45	-303.6	28.8	
1338	~11 GAL	13.58	9.75	1.267	4.33	-324.6	34.3	DRIES OUT
0805	INITIAL	12.74	10.33	2.062	13.99	-262.1	119.0	▽@12.53'
0806	~13 GAL	13.18	8.90	2.011	8.01	-261.8	41.0	
0808	~15 GAL	13.57	9.00	1.558	7.97	-275.3	63.0	DRIES O
1213		16.41	10.77	1.662	15.17	-284.3	172.0	
1214	~17 GALS	13.52	8.96	1.544	5.11	-288.1	34.1	
1216	~19 GALS	13.62	9.02	1.404	5.46	-295.2	60.4	DRIES O

Comments: DRIES OUT @ ~4 GAL, LET RECOVER, DRIES OUT AFTER ~8 GALS (CUMULATIVE)
▽ RECOVERS IN A FEW HOURS, GIVES ~3 GALS BEFORE DRYING OUT

Prepared by: KEVIN CRONIN
Signature/Date: 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTEKL
Project Number: 140416
Well Number: 711 D
Date Developed: 7/8/11 7/11/11 7/13/11 7/12/11 7/14,15/11
Field Personnel: KEVIN CROWLEY
Well Development Method: WATER PUMP, YSI 6280

Total Well Depth: ~21.95' BTOC (2" PVC)	Time Started: 7/8/11 0942
Depth to Water Table:	Time Completed: 7/15/11 1057
Height of Water Column:	Notes: D @ ~12.53 @ 1222, 7/12/11 D @ ~12.54' BTOC @ 0629, 7/13/11 D @ ~12.57' BTOC @ 0044, 7/13/11 D @ ~12.58' BTOC @ 1325, 7/13/11
Well Diameter:	
Well Volume:	

	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
7/11/11 1458	Initial Reading	12.70	8.69	1.437	9.58	-291.2	42.8	
1456	~20 GAL	13.38	8.00	1.480	6.86	-289.0	25.4	
1458	~22 GAL	13.54	8.77	1.446	5.60	-299.2	52.8	DRUMS ON
1226	~23 "	13.37	7.96	1.908	8.24	-272.1	17.7	7/12/11
1227	~25 "	13.90	8.18	1.677	6.10	-284.5	13.3	
1228	~26 "	13.70	8.54	1.537	5.76	-285.6	25.4	DRUMS OFF
1439	~29 "	13.74	8.38	1.434	7.71	-267.4	24.5	DRUMS ON
0836	INITIAL	12.99	9.58	1.867	20.06	-291.2	97.8	7/13/11
0837	~30 GALS	12.95	8.71	1.818	12.17	-294.4	23.2	
0838	~33 "	13.72	8.60	1.520	9.33	-297.1	17.2	DRUMS ON
1048	~36 "	13.63	8.15	1.463	7.88	-241.1	9.4	"
1329	~39 "	13.72	7.77	1.555	7.15	-265.6	12.7	"

Comments:

Prepared by: KEVIN CROWLEY
Signature/Date: 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTEKL
Project Number: 140416
Well Number: 711 I
Date Developed: 7/8,11-14,15/2011
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YSI 6280

Total Well Depth: ~ 21.95' BTOC (2" PVC)	Time Started: 7/8/11 0942
Depth to Water Table:	Time Completed:
Height of Water Column:	Notes: ▽ @ ~12.54' BTOC @ 0828, 7/14/11
Well Diameter: ~2"	▽ @ ~12.54' BTOC @ 0823, 7/15/11
Well Volume:	~~▽ @ ~7.00' BTOC @ 0840, 7~~ KC

CUMULATIVE

	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
0835 ~34 GALS	Initial Reading	13.17	7.54	1.920	12.35	-277.4	135.9	7/14/11
0836	~40 GALS	12.67	8.67	1.776	6.62	-284.0	27.7	
0838	~ 43 "	13.61	8.61	1.488	4.10	-292.2	11.8	BRASS OUT
1130	~ 44 "	12.69	9.88	5.536	8.84	-264.1	155.5	"
1330	~ 46 "	13.54	8.02	1.576	3.24	-284.1	7.0	"
0832	49 "	13.64	8.32	1.522	2.02	-285.1	8.2	7/15/11 BRASS OUT
1057	52 "	12.65	7.99	1.562	2.73	-283.9	9.0	"

Comments:

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cronin 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTEKL
Project Number: 140416
Well Number: 711 DD
Date Developed: 7/8/2011 7/13-15/2011 7/11/2011 7/12/2011
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE PUMP, YSI 8260

Total Well Depth:	~42.16' BTOC (2" PVC)	Time Started:	0955 7/8/2011
Depth to Water Table:	~10.53' BTOC	Time Completed:	1052 7/15/2011
Height of Water Column:	~31.63'	Notes:	▽@ ~12.72'@ 0745, 07/11/11 TD: 42.20' BTOC ▽@ ~22.88' @ 1220, 7/12/11
Well Diameter:	2"		
Well Volume:	~5.4 GAL/VOL		

	Well Volume Removed (GALS)	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
0955	Initial Reading	14.18	10.78	0.686	12.05	-270.1	211.9	
0959	~5 GALS	13.24	11.25	0.011	9.48	-271.1	NM	DRIED OUT
1015	~5.5 GALS	16.05	10.61	0.787	11.54	-256.7	1268	
1138	~6.0 GALS	13.14	11.57	3.341	11.66	-168.5	1254	DRIES OUT @ 35.48 @ 1327
1329	~6.5 GALS	15.32	11.91	4.809	13.71	-258.2	1265	▽ 12.72'
0745	7/11/11 INITIAL	11.36	12.05	5.788	14.33	-216.9	209.2	
0758	~9.5	10.79	12.14	5.746	12.79	-240.0	38.2	
0759	~10.5	12.23	12.39	6.350	13.08	-273.3	32.3	DRIES OUT
1208	—	20.96	11.23	5.531	18.43	-251.3	969	
1209	~11.0	12.11	11.98	5.484	17.38	-257.4	55.6	DRIES OUT
1450	~11.5	12.46	11.75	5.261	17.69	-266.5	503	"
1233	~14.5	11.76	11.48	5.046	12.19	-311.4	15.6	7/12/11 DRIES OUT

Comments: ▽ RECOVERS OVERNIGHT, GIVES ~2.5 GALS BEFORE DRYING OUT

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cronin 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTEKA
Project Number: 140416
Well Number: 711013
Date Developed: 7/8, 11, 12, 13, 14, 15/2011
Field Personnel: KEVIN CRONIN
Well Development Method: WHALE, YSI 6280

Total Well Depth:	Time Started:
Depth to Water Table:	Time Completed:
Height of Water Column:	Notes: ▼ @ ~27.00' BTOC @ 0826, 7/13/11
Well Diameter:	▼ @ ~35.87' BTOC @ 1046, 7/13/11
Well Volume:	▼ @ ~36.60' BTOC @ 1327, 7/13/11
	▼ @ ~28.50' BTOC @ 0827, 7/14/11

	Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity	
7/12	Initial Reading							
1444	~ 15.5 GALS	16.72	8.35	80013	11.43	-224.3	-3.2 ?	
0830	INITIAL	12.35	9.56	5.186	12.75	-276.1	227.4	7/13/11
0831	~ 16.5 GALS	10.80	10.75	5.178	15.88	-287.3	53.3	
0832	~ 17.0 "	11.03	11.00	5.117	15.10	-293.5	36.4	DRUGS OUT
1054	~ 17.5 "	12.07	10.33	5.152	10.12	-237.4	1003	
1333	~ 18 "	13.20	9.77	5.141	10.31	-250.4	369.7	
0829	INITIAL	12.94	8.31	5.409	9.33	-268.8	403.4	
0830	~ 19 GALS	10.81	10.14	5.441	8.10	-275.2	48.8	
0831	~ 20 "	10.91	10.37	5.410	7.88	-279.1	33.7	DRUGS OUT
1135	~ 23 "	13.69	8.29	6.522	5.11	-303.6	7.0	"
1327	~ 23.5 "	14.36	9.63	5.528	8.09	-256.3	52.5	"

Comments:

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cronin 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GENTERRA
Project Number: 140416
Well Number: 711 DO
Date Developed: 7/8, 11-15/2011
Field Personnel: KEVIN CRONIN
Well Development Method: WATER PUMP, YSI 6260 METER

Total Well Depth:	Time Started:
Depth to Water Table:	Time Completed:
Height of Water Column:	Notes: WL ~ 29.61' BTOC @ 0822, 7/15/11
Well Diameter:	
Well Volume:	

CUMULATIVE

Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity
Initial Reading						
~ 26 GALS	10.92	9.76	5.633	6.98	-263.8	24.7
~26.5 "	12.63	9.33	5.758	6.86	-257.7	24.7

~23.5 GAL 0826 1052

7/15/11 DRIED OUT "

Comments:

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cronin 7/15/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTERL
Project Number: 140416
Well Number: 712 D
Date Developed: 8/2/2011
Field Personnel: KEVIN CROWIN
Well Development Method: WHALE PUMP YSI 6280

Total Well Depth: ~22.02' BTOC (2" PVC)	Time Started:
Depth to Water Table: — DRY @ 0800	Time Completed:
Height of Water Column:	Notes:
Well Diameter:	
Well Volume:	

Well Volume Removed	Temp	pH	Conductivity	DO	ORP/Eh	Turbidity
Initial Reading						

Comments: WELL IS DRY

Prepared by: KEVIN CROWIN
Signature/Date: Kevin Crowin 8/2/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw™
Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTELL
Project Number: 140416
Well Number: 712DD
Date Developed: 8/1/2011
Field Personnel: CRONIN
Well Development Method: WHALE PUMP YSI

Total Well Depth: ~41.74' BTOC	Time Started: 1416
Depth to Water Table: ~30.15' BTOC (2" PVC)	Time Completed:
Height of Water Column: 11.59'	Notes: ▽ @ 30.16' BTOC @ 0802 8/2/2011
Well Diameter: 2"	
Well Volume: ~2.0 gal/vol	

	Well Volume Removed	Temp	pH	Conductivity	DO mg/L	ORP/Eh	Turbidity
1418	Initial Reading	13.73	8.05	1.647	11.44	-64.8	1013
1421	~2 GALS	11.87	7.61	1.789	4.07	4.6	383
1424	~4 GALS	11.67	7.54	1.783	3.74	29.3	105.2
1427	~6 GALS	11.66	7.55	1.723	3.80	46.6	29.4
1430	~8 GALS	11.65	7.55	1.708	3.85	56.7	14.1
1433	~10 GALS	11.69	7.55	1.703	3.82	61.9	6.1
1438	~13 GALS	11.70	7.56	1.708	3.73	70.7	2.7
1445	~17 GALS	11.62	7.54	1.717	3.66	86.4	3.4
1448	~20 GALS	11.68	7.55	1.714	3.62	89.7	29.6
1453	~23 GALS	11.65	7.53	1.741	3.59	91.7	8.6
1456	~25 GALS	11.63	7.51	1.752	3.57	98.0	4.8
1459	~27 GALS	11.65	7.51	1.762	3.54	100.2	4.0

Comments:

Prepared by: KEVIN CRONIN
Signature/Date: Kevin Cron 8/1/11

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

Shaw Environmental & Infrastructure, Inc.

MONITORING WELL DEVELOPMENT RECORD

Project Name: GUTHRIE Project Number: 140416

Well Number: 713 D Date Developed: 8/1/2011

Field Personnel: CRONIN

Well Development Method: WHALE PUMP YSI 6820

Total Well Depth: ~ 21.99' BTOC (tape)	Time Started: 1320
Depth to Water Table: ~12.39' BTOC (2" PVC)	Time Completed: 1358
Height of Water Column: 9.60'	Notes: I @ ~12.80' @ 1518
Well Diameter: 2"	
Well Volume: 1.6 gal/Vol	

Well Volume Removed	Temp	pH	Conductivity	DO mg/L	ORP/Eh	Turbidity
Initial Reading	13.80	7.22	1.180	1.28	213.0	165.4
1327 ~ 3 GAL	12.68	7.20	1.153	0.30	118.0	50.8
1330 ~ 5 GAL	12.26	7.11	1.135	0.27	-86.6	99.0
1332 ~ 7 GAL	12.12	7.09	1.143	0.20	-110.3	93.3
1335 ~ 10 GAL	12.03	7.08	1.162	0.20	-133.6	54.9
1338 ~13 GAL	12.11	7.09	1.156	0.23	-141.8	62.2
1340 ~ 15 GAL	12.18	7.07	1.191	0.70	-144.4	62.3
1343 ~ 18 GAL	12.29	7.06	1.193	0.79	-153.0	101.3
1346 ~ 21 GAL	12.30	7.05	1.205	0.79	-157.3	18.0
1350 ~ 24 GAL	12.29	7.06	1.223	0.76	-163.9	95.9
1354 ~ 27 GAL	12.21	7.06	1.234	0.77	-167.7	9.7
1358 ~ 30 GAL	12.41	7.07	1.244	0.78	-172.8	24.3

Comments: GOOD RECOVERY WHEN PUMPING ENDED

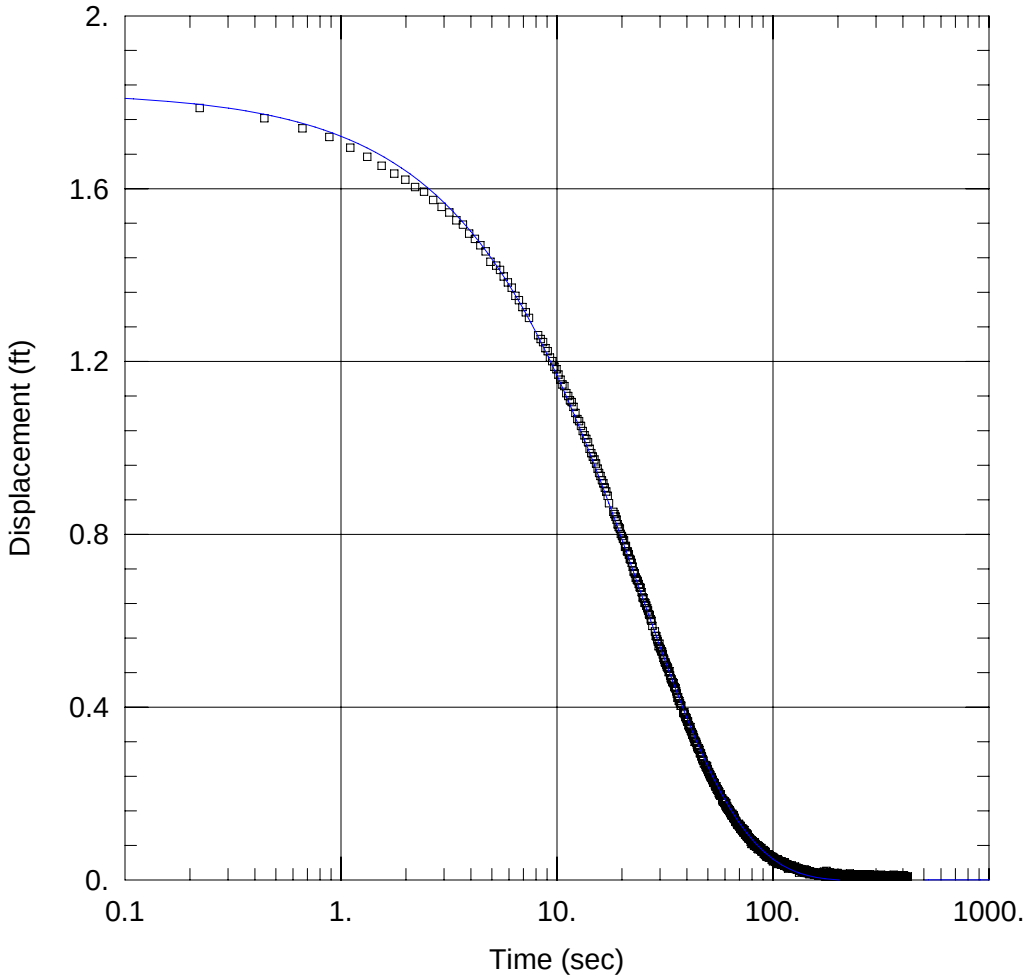
Prepared by: KEVIN CRONIN

Signature/Date: Kevin Cronin 8/1/2011

10" Diameter = 1.68 gal/ft
6" Diameter = 1.5 gal/ft
4" Diameter = 0.67 gal/ft
2" Diameter = 0.17 gal/ft
1.5" Diameter = 0.092 gal/ft

APPENDIX E

Slug Test Data Plots
(Provided on Same CD as Appendix A)



MW-701DD TEST 1 (PNEUMATIC SLUG TEST)

Data Set: C:\...\MW701DD Test 1.aqt
Date: 10/26/11 Time: 21:00:26

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-701DD
Test Date: 08-30-2011

AQUIFER DATA

Saturated Thickness: 31.04 ft

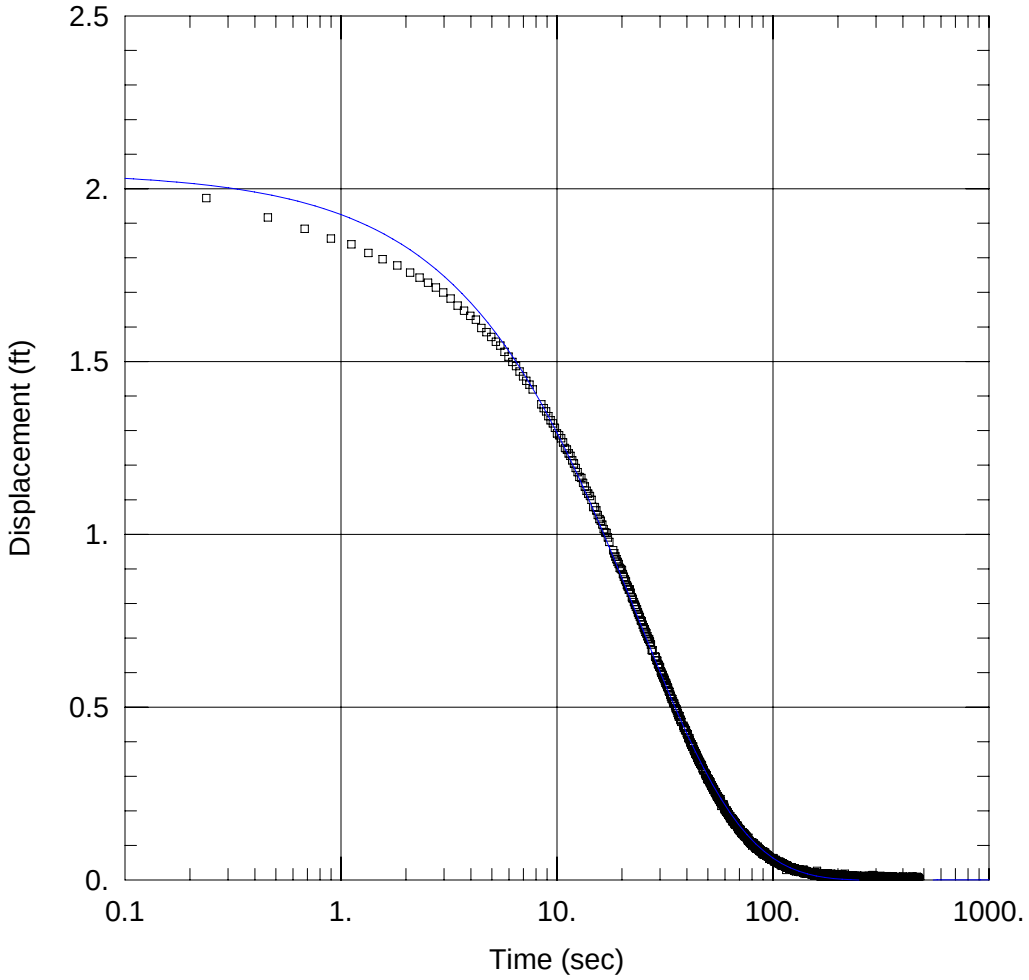
WELL DATA (MW701DD)

Initial Displacement: 1.825 ft
Total Well Penetration Depth: 31.04 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 31.04 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 5.154 ft/day
Kz/Kr = 1.
Ss = 5.058E-6 ft^{-1}



MW-701DD TEST 2 (PNEUMATIC SLUG TEST)

Data Set: C:\...\MW701DD Test 2.aqt
Date: 10/24/11 Time: 13:42:18

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-701DD
Test Date: 08-30-2011

AQUIFER DATA

Saturated Thickness: 31.04 ft

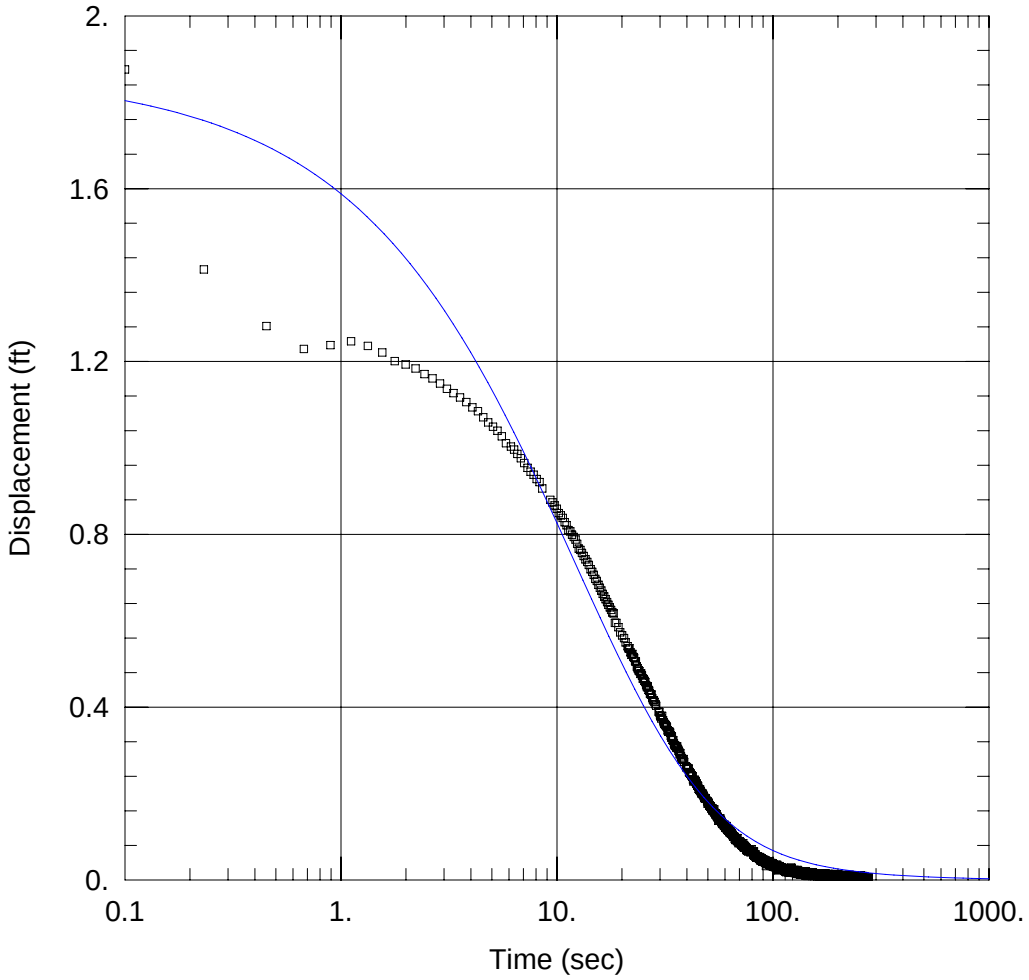
WELL DATA (MW-701DD)

Initial Displacement: 2.05 ft
Total Well Penetration Depth: 31.04 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 31.04 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 5.072 ft/day
Kz/Kr = 1.
Ss = 9.063E-6 ft^{-1}



MW-701DD TEST 3 (PNEUMATIC SLUG TEST)

Data Set: C:\...\MW701DD Test 3.aqt
Date: 10/26/11 Time: 21:01:36

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-701DD
Test Date: 08-30-2011

AQUIFER DATA

Saturated Thickness: 31.04 ft

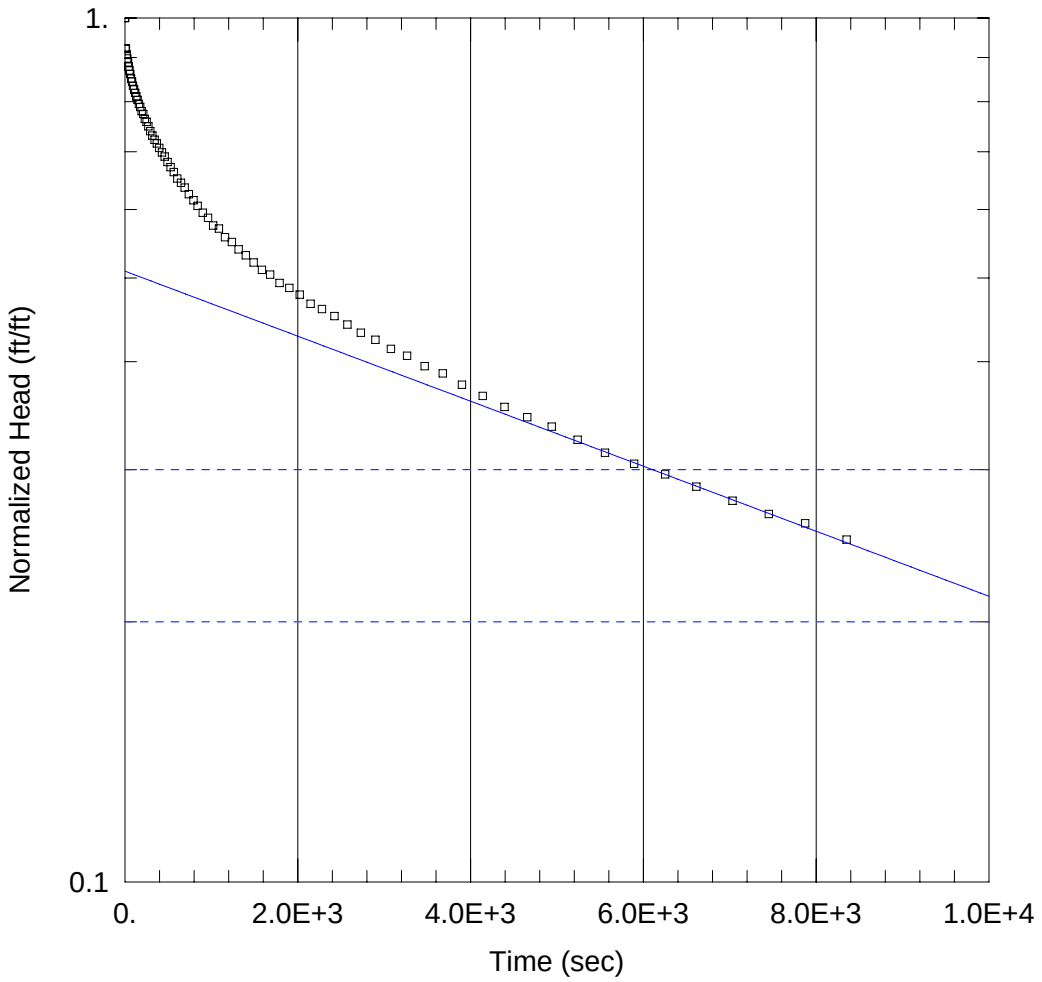
WELL DATA (MW-701DD)

Initial Displacement: 1.876 ft
Total Well Penetration Depth: 31.04 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 31.04 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 5.208 ft/day
Kz/Kr = 1.
Ss = 0.0006235 ft^{-1}



MW-702DD SS FH TEST EXTRA_BOUWER RICE

Data Set: C:\...\MW702DD SS FH Test Extra_BR.aqt
Date: 10/24/11 Time: 15:00:34

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-702DD
Test Date: 09-01-11

AQUIFER DATA

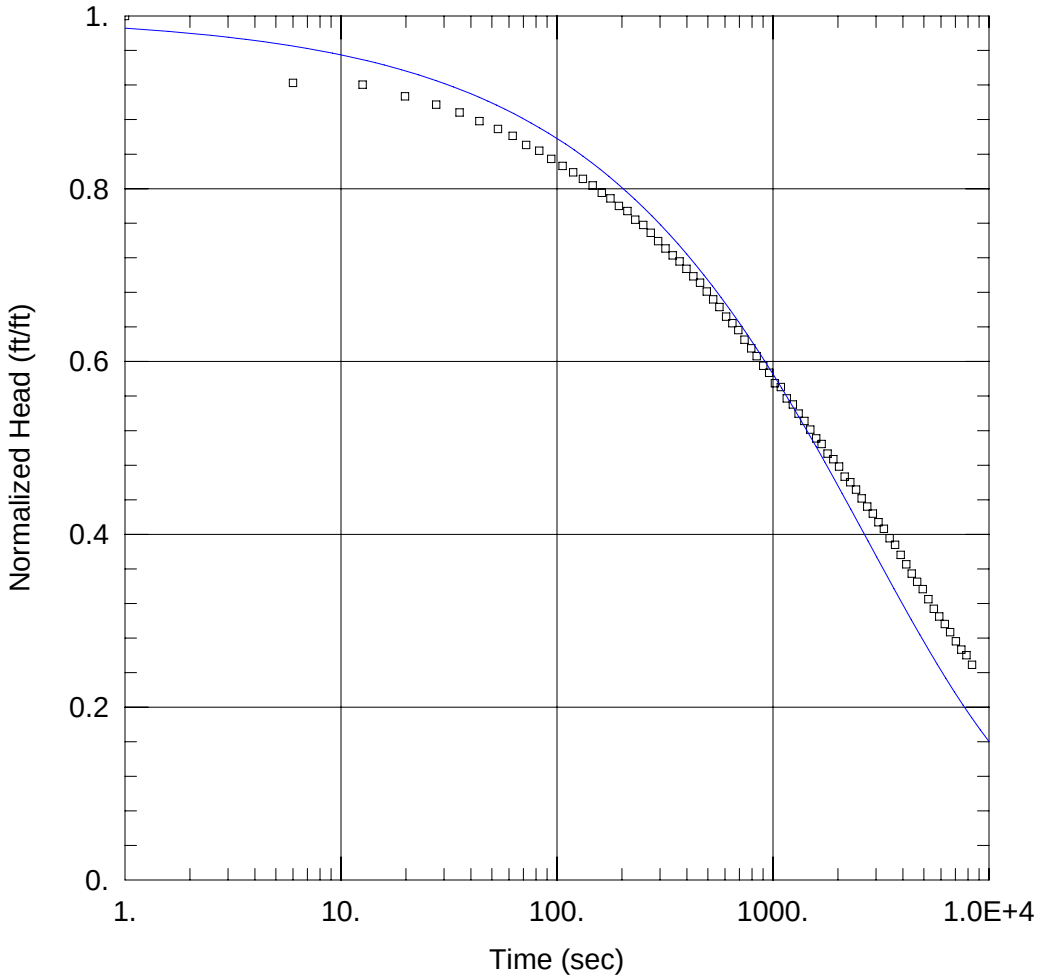
Saturated Thickness: 33.1 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-702DD)

Initial Displacement: 1.988 ft Static Water Column Height: 33.1 ft
Total Well Penetration Depth: 33.1 ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0102 ft/day y0 = 1.012 ft



MW-702DD SS FH TEST EXTRA

Data Set: C:\...\MW702DD SS FH Test Extra.aqt
Date: 10/24/11 Time: 14:53:20

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-702DD
Test Date: 09-01-11

AQUIFER DATA

Saturated Thickness: 33.1 ft

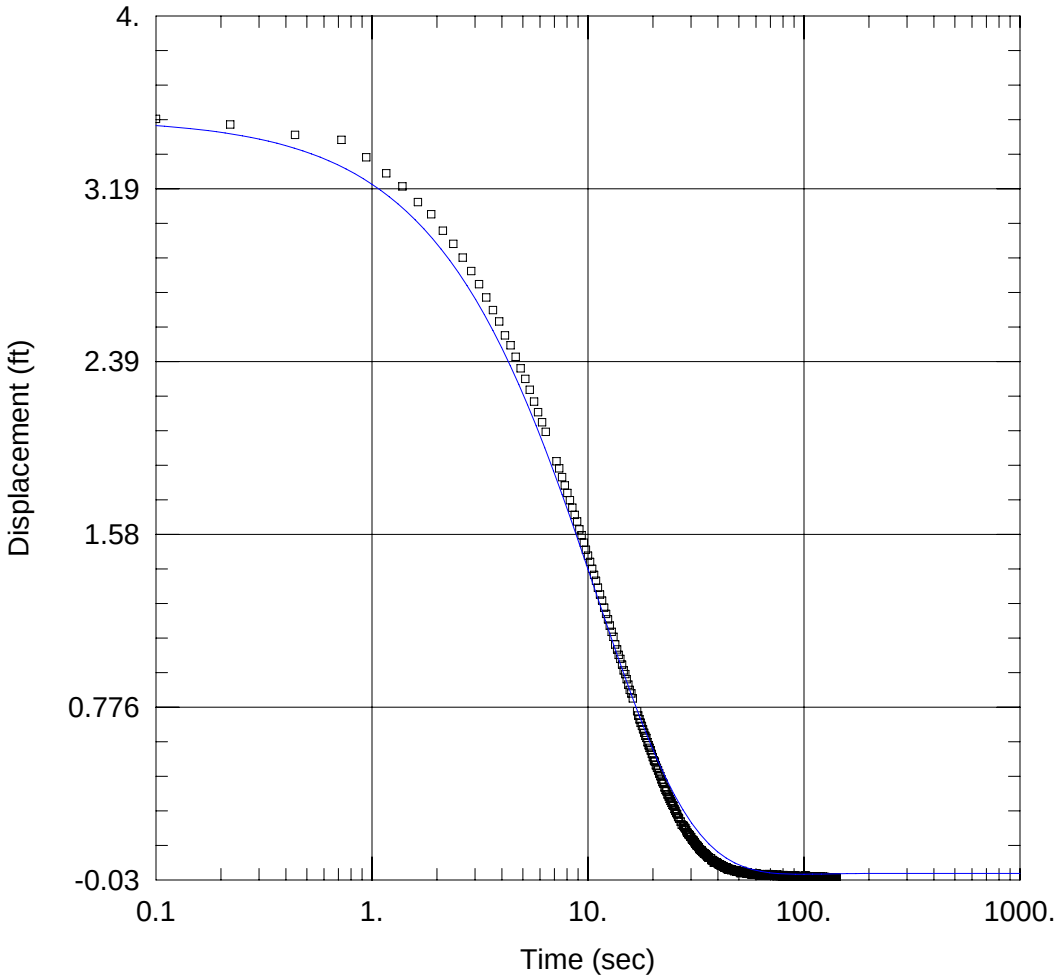
WELL DATA (MW-702DD)

Initial Displacement: 1.988 ft
Total Well Penetration Depth: 33.1 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 33.1 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 0.01086 ft/day
Kz/Kr = 1.
Ss = 0.006045 ft^{-1}



MW-703DD PNEUMATIC SLUG TEST 1

Data Set: C:\...\MW703DD PS Test1.aqt
Date: 10/24/11 Time: 21:01:27

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-703DD
Test Date: 08-30-2011

AQUIFER DATA

Saturated Thickness: 17.11 ft

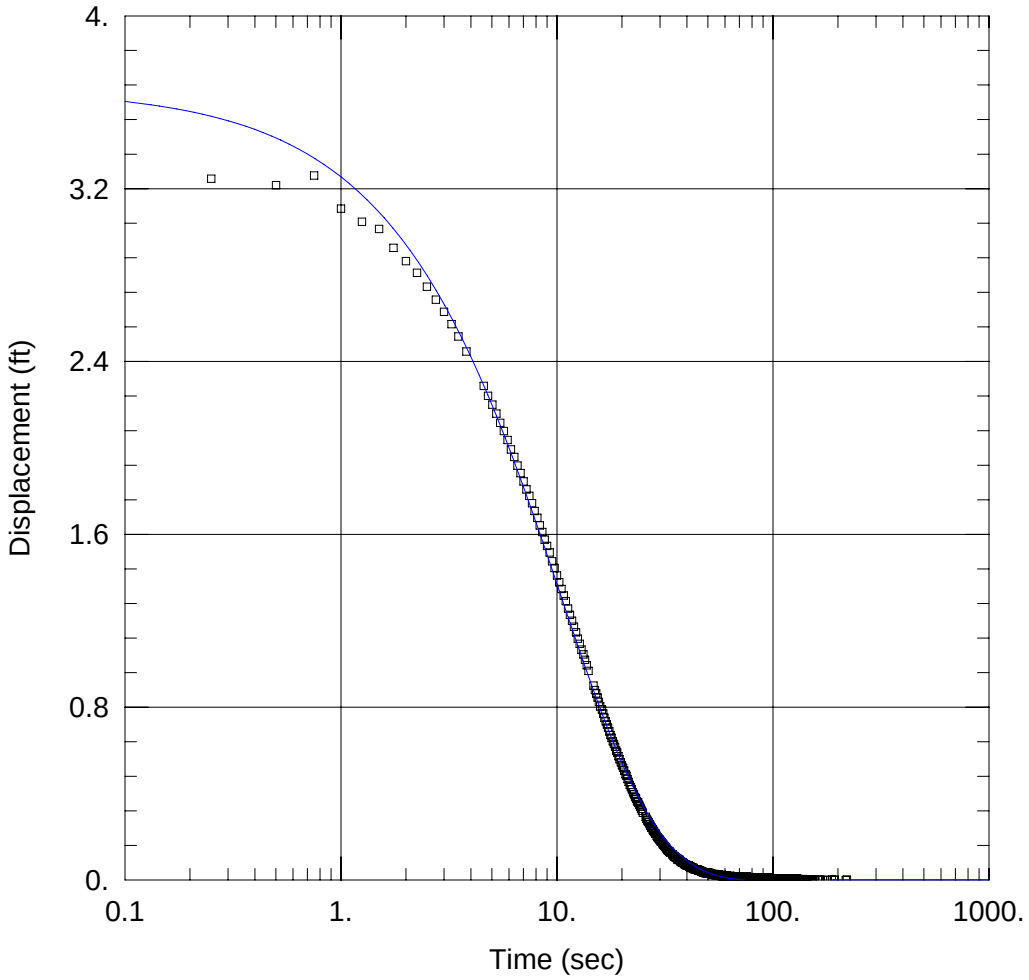
WELL DATA (MW703-DD)

Initial Displacement: 3.52 ft
Total Well Penetration Depth: 17.11 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 17.11 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 11.18 ft/day
Kz/Kr = 1.
Ss = 3.151E-12 ft^{-1}



MW-703DD PNEUMATIC SLUG TEST 2

Data Set: C:\...\MW703DD PS Test2.aqt
Date: 10/24/11 Time: 21:23:25

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-703DD
Test Date: 08-30-2011

AQUIFER DATA

Saturated Thickness: 17.11 ft

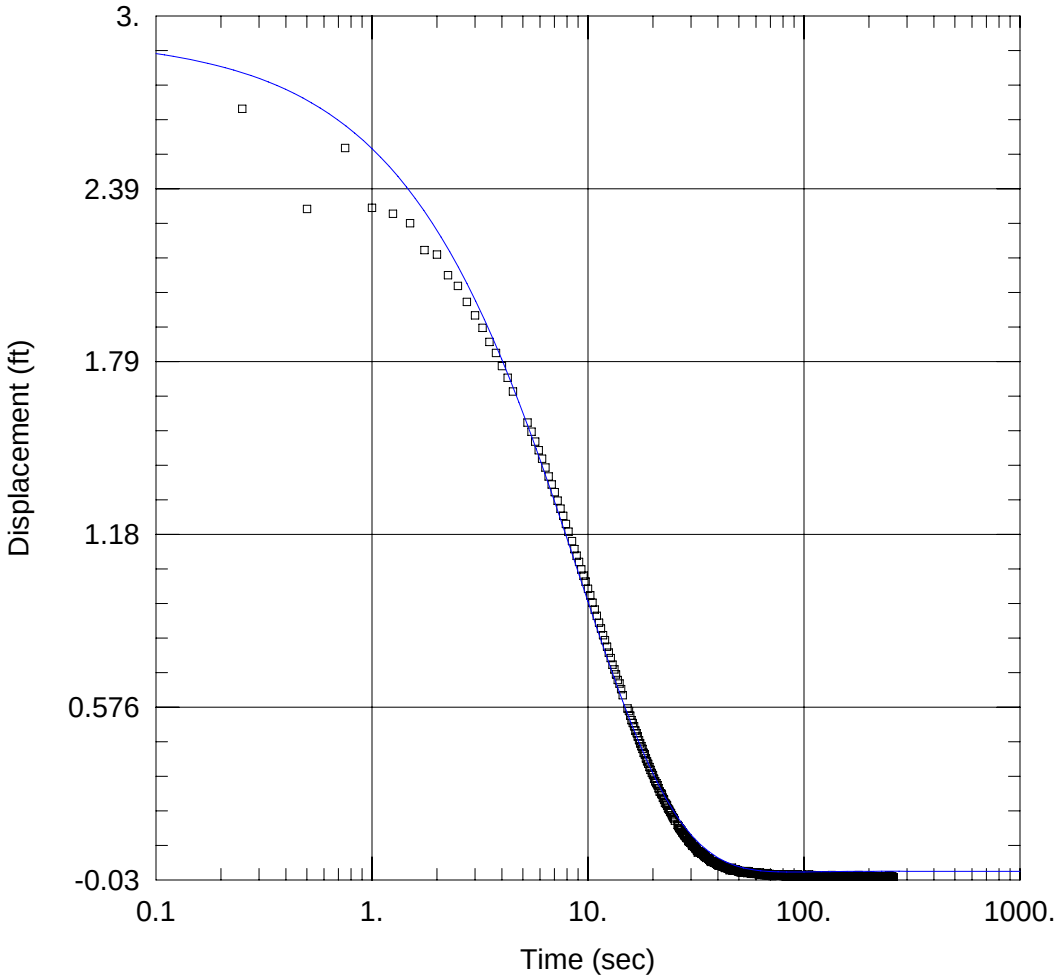
WELL DATA (MW703-DD)

Initial Displacement: 3.664 ft
Total Well Penetration Depth: 17.11 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 17.11 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 12.02 ft/day
Kz/Kr = 1.
Ss = 3.988E-6 ft^{-1}



MW-703DD PNEUMATIC SLUG TEST 3

Data Set: C:\...\MW703DD PS Test3.aqt
Date: 10/24/11 Time: 21:36:30

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-703DD
Test Date: 08-30-2011

AQUIFER DATA

Saturated Thickness: 17.11 ft

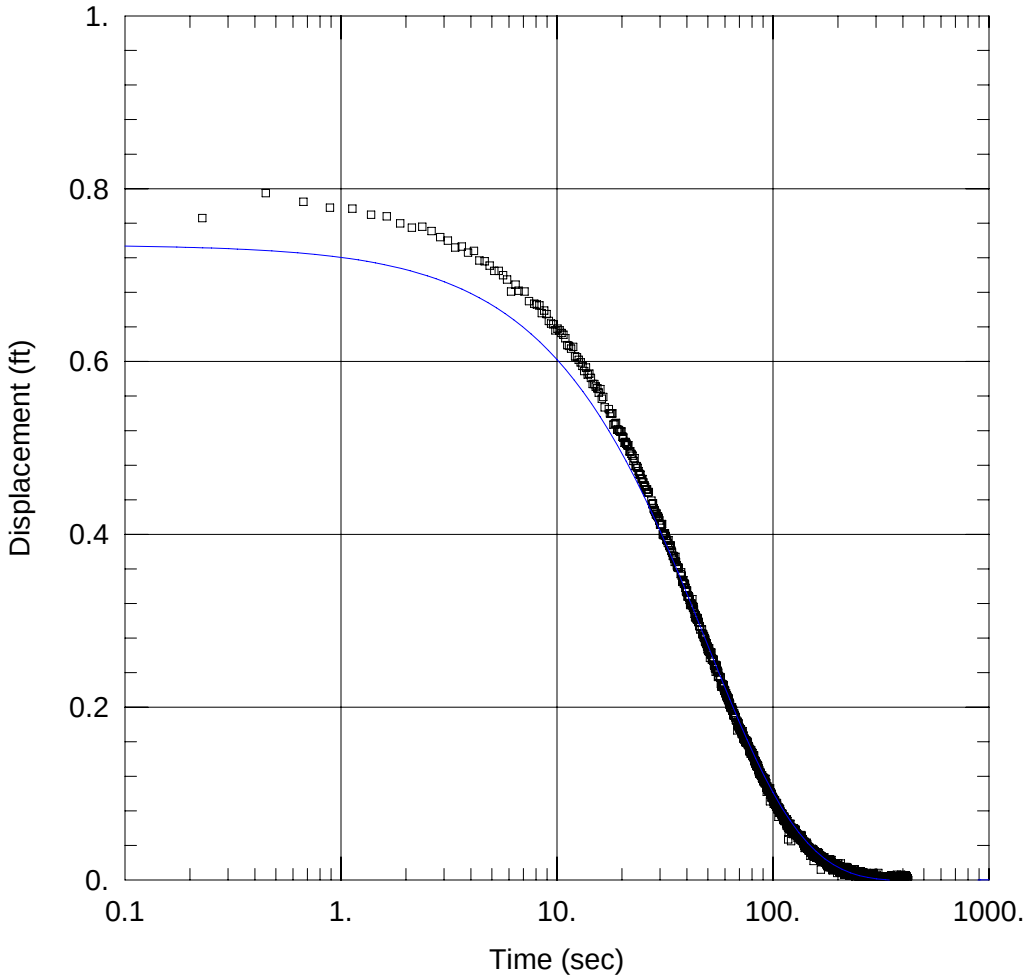
WELL DATA (MW703-DD)

Initial Displacement: 2.929 ft
Total Well Penetration Depth: 17.11 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 17.11 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 13.72 ft/day
Kz/Kr = 1.
Ss = 8.203E-6 ft^{-1}



MW-704DD PNEUMATIC SLUG TEST 1

Data Set: C:\...\MW704DD PS Test1.aqt
Date: 10/24/11 Time: 22:34:12

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-704DD
Test Date: 08-30-2011

AQUIFER DATA

Saturated Thickness: 36.06 ft

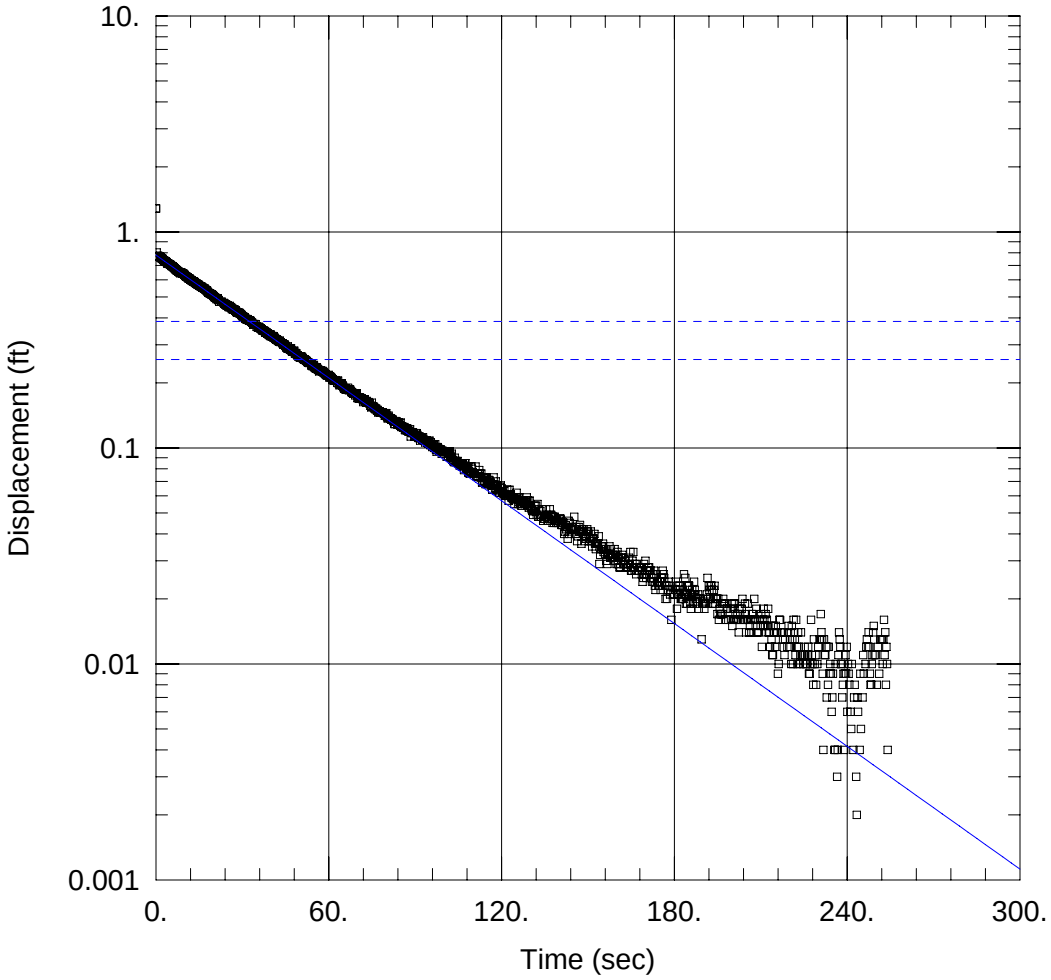
WELL DATA (MW-704DD)

Initial Displacement: 0.735 ft
Total Well Penetration Depth: 36.06 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 36.06 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 2.6 ft/day
Kz/Kr = 1.
Ss = 3.151E-12 ft^{-1}



MW-704DD PNEUMATIC SLUG TEST 2

Data Set: C:\...\MW704DD PS Test2.aqt
Date: 10/24/11 Time: 22:44:43

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-704DD
Test Date: 08-30-2011

AQUIFER DATA

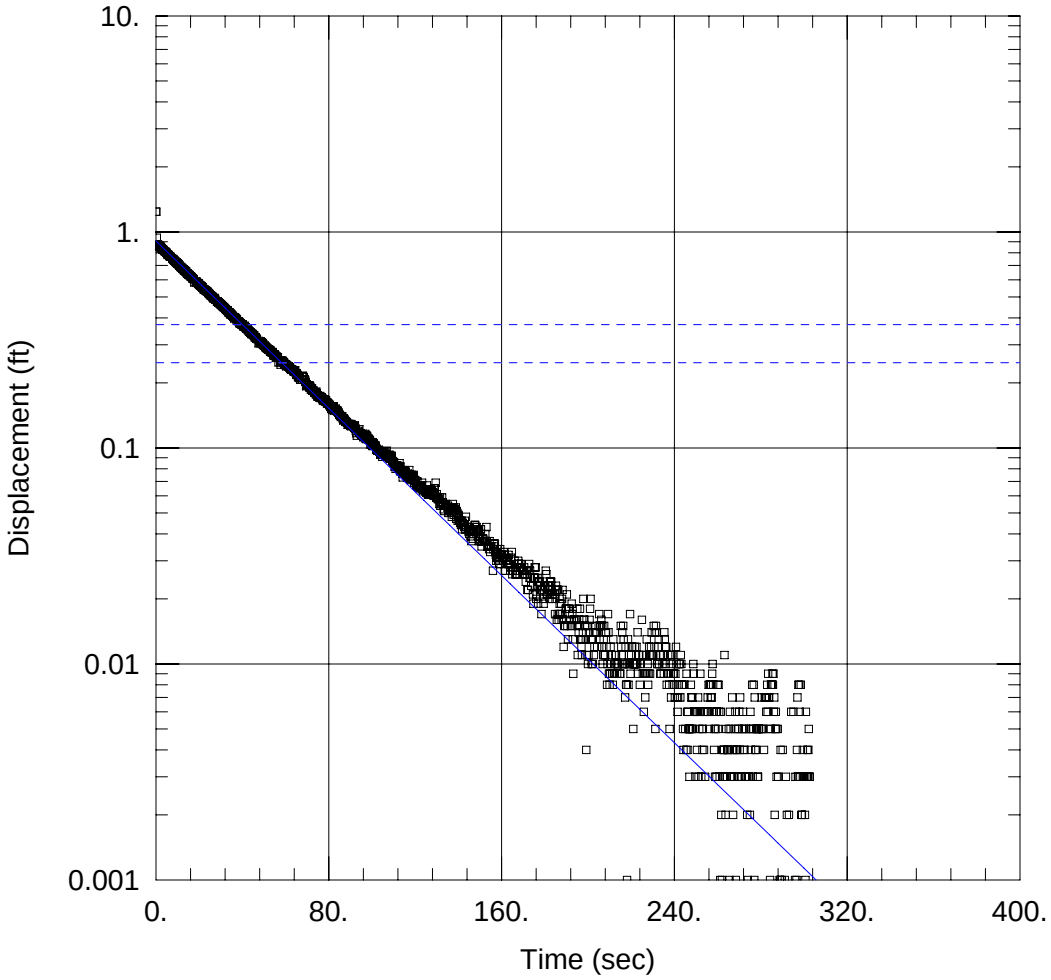
Saturated Thickness: 36.06 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-704DD)

Initial Displacement: 1.283 ft Static Water Column Height: 36.06 ft
Total Well Penetration Depth: 36.06 ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 2.601 ft/day y0 = 0.7809 ft



MW-704DD PNEUMATIC SLUG TEST 3

Data Set: C:\...\MW704DD PS Test3.aqt
Date: 10/24/11 Time: 22:59:26

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-704DD
Test Date: 08-30-2011

AQUIFER DATA

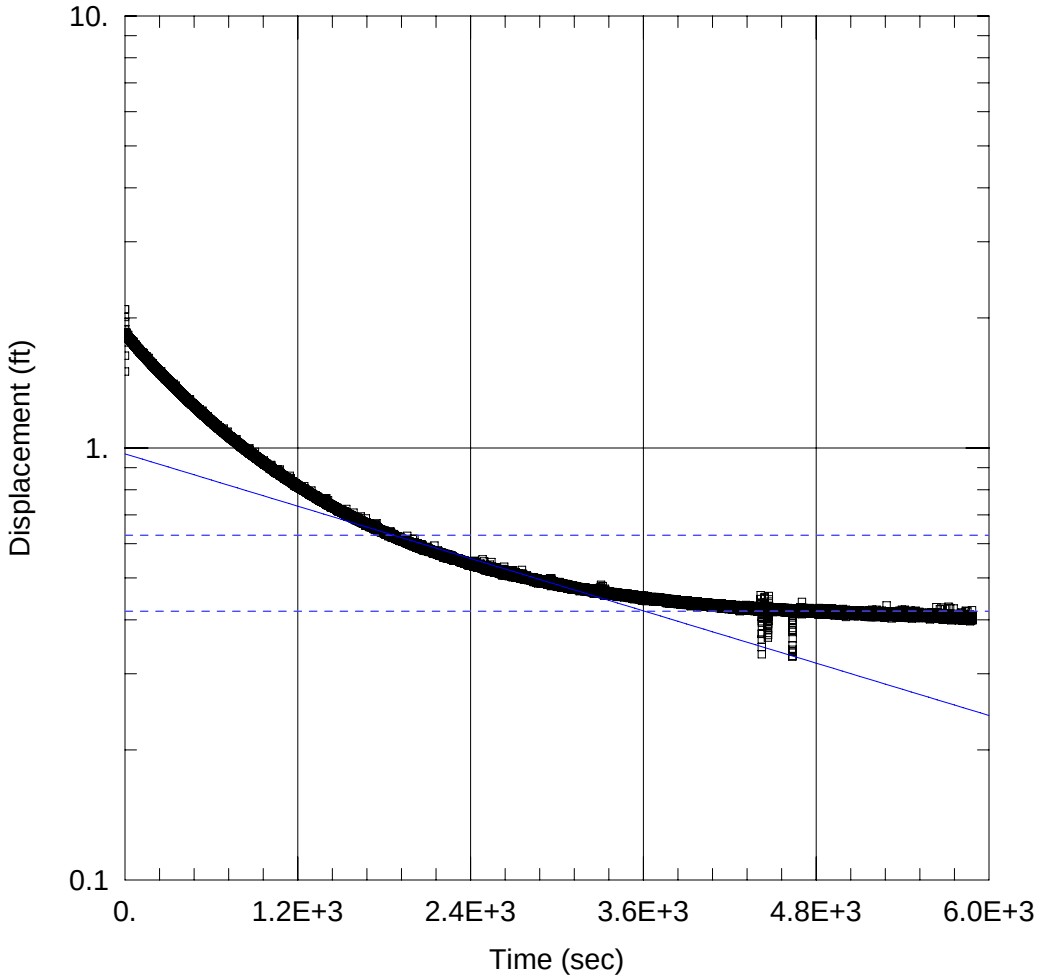
Saturated Thickness: 36.06 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-704DD)

Initial Displacement: 1.24 ft Static Water Column Height: 36.06 ft
Total Well Penetration Depth: 36.06 ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 2.657 ft/day y0 = 0.9077 ft



MW705D SOLID SLUG FALLING HEAD TEST 1 EXTRA

Data Set: C:\...\MW705D SS FH Test 1 extra.aqt
Date: 10/24/11 Time: 23:32:22

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-705D
Test Date: 08-31-2011

AQUIFER DATA

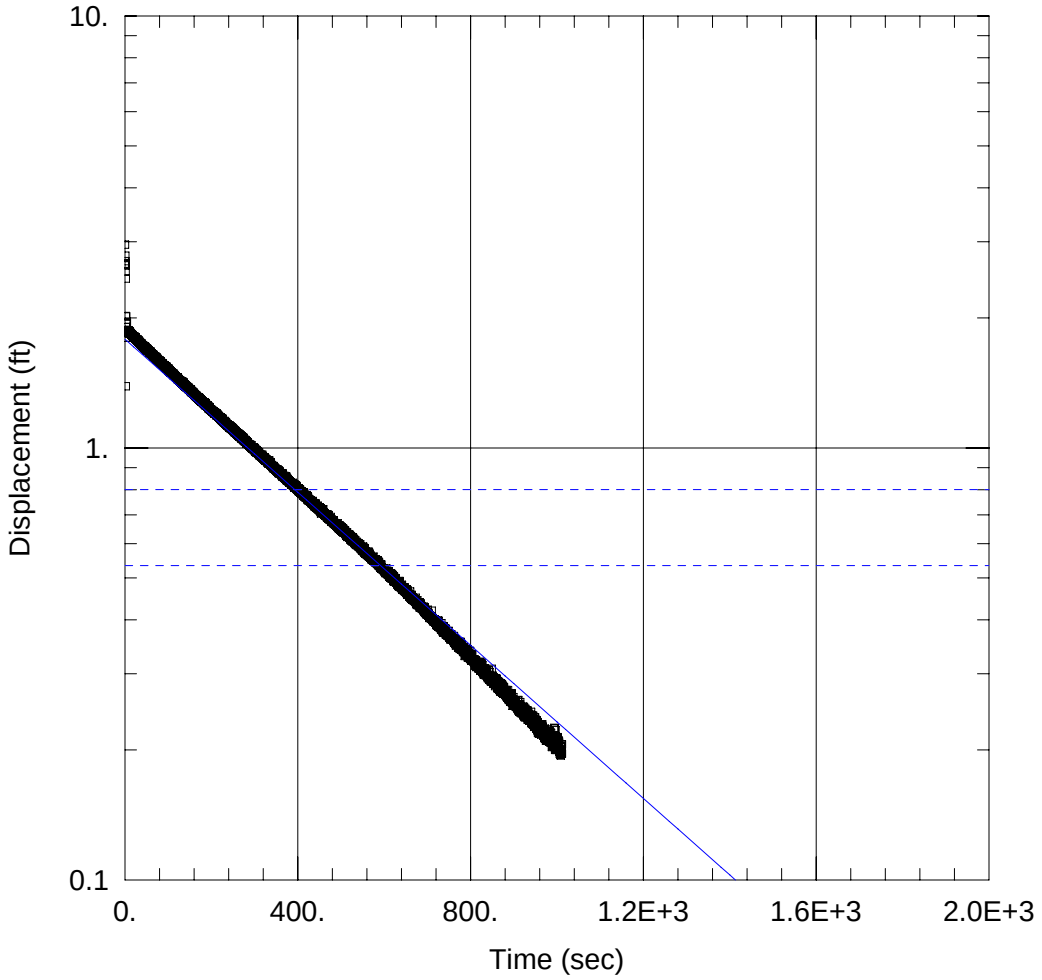
Saturated Thickness: 14.3 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW705-D)

Initial Displacement: 2.094 ft Static Water Column Height: 14.3 ft
Total Well Penetration Depth: 14.3 ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.02378 ft/day y0 = 0.9688 ft



MW-706DD SOLID SLUG FALLING HEAD TEST 1

Data Set: C:\...\MW706DD SS FH Test1.aqt
Date: 10/26/11 Time: 11:01:09

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-706DD
Test Date: 08-29-2011

AQUIFER DATA

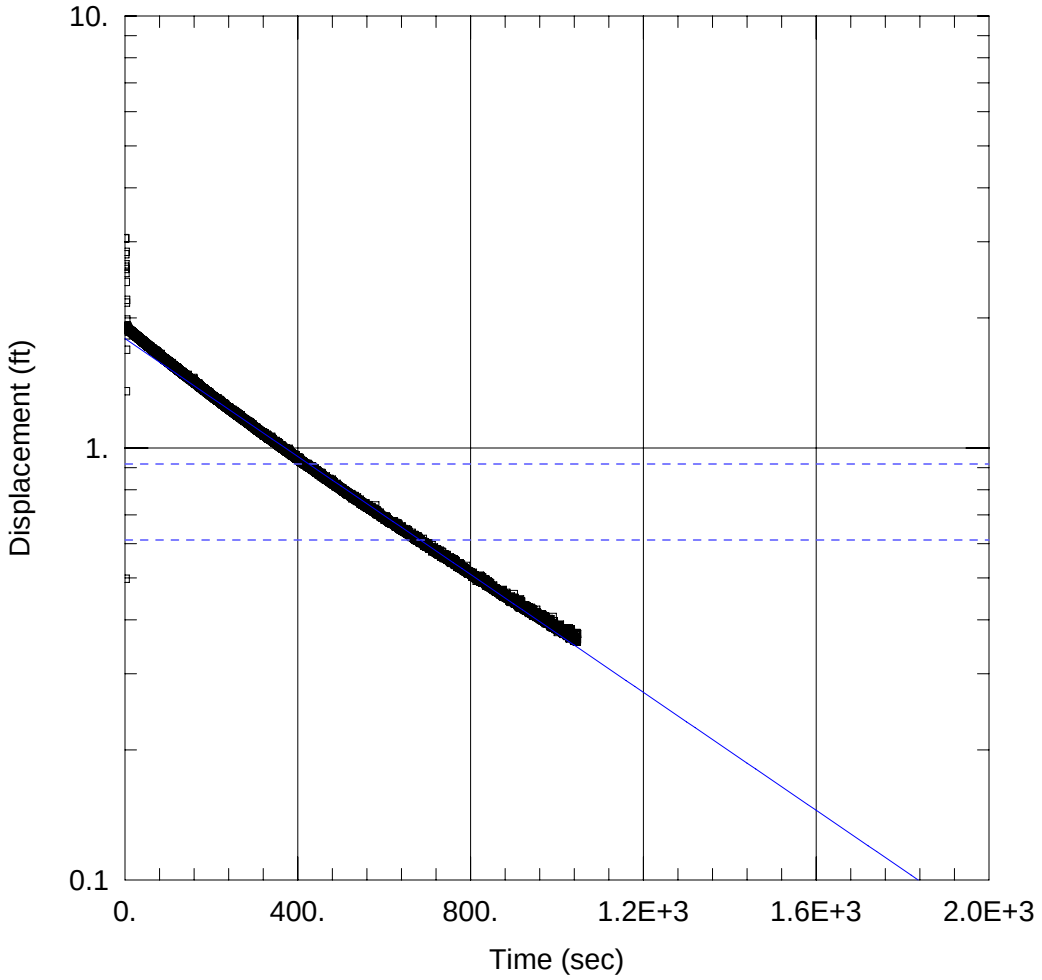
Saturated Thickness: 34. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW706DD)

Initial Displacement: 2.67 ft Static Water Column Height: 34. ft
Total Well Penetration Depth: 34. ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.241 ft/day y0 = 1.785 ft



MW-706DD SOLID SLUG FALLING HEAD TEST 2

Data Set: C:\...\MW706DD SS FH Test2.aqt
Date: 10/26/11 Time: 11:40:52

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-706DD
Test Date: 08-29-2011

AQUIFER DATA

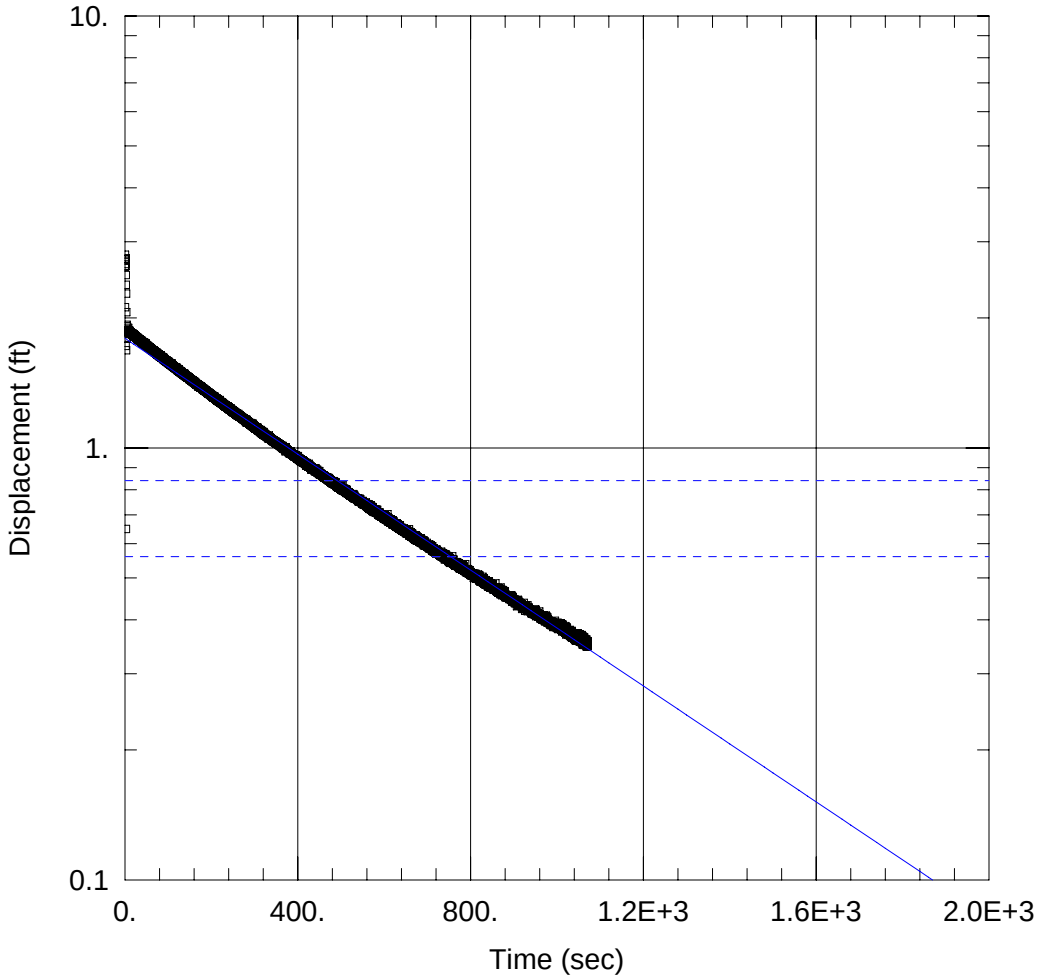
Saturated Thickness: 34. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW706DD)

Initial Displacement: 3.06 ft Static Water Column Height: 34. ft
Total Well Penetration Depth: 34. ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.1857 ft/day y0 = 1.791 ft



MW-706DD SOLID SLUG FALLING HEAD TEST 3

Data Set: C:\...\MW706DD SS FH Test3.aqt
Date: 10/26/11 Time: 12:17:59

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-706DD
Test Date: 08-29-2011

AQUIFER DATA

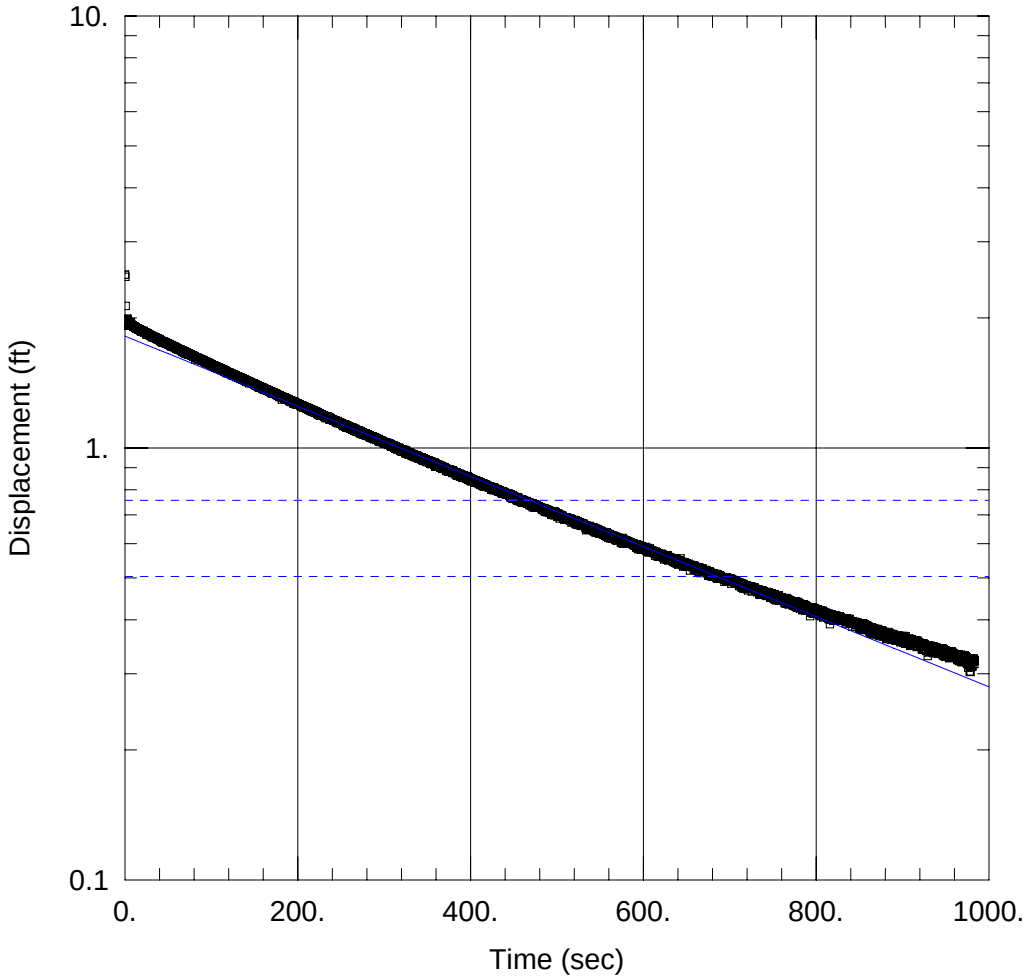
Saturated Thickness: 34. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW706DD)

Initial Displacement: 2.8 ft Static Water Column Height: 34. ft
Total Well Penetration Depth: 34. ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.1825 ft/day y0 = 1.794 ft



MW-706DD SOLID SLUG RISING HEAD TEST 1

Data Set: C:\...\MW706DD SS RH Test1.aqt
Date: 10/26/11 Time: 12:30:10

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-706DD
Test Date: 08-29-2011

AQUIFER DATA

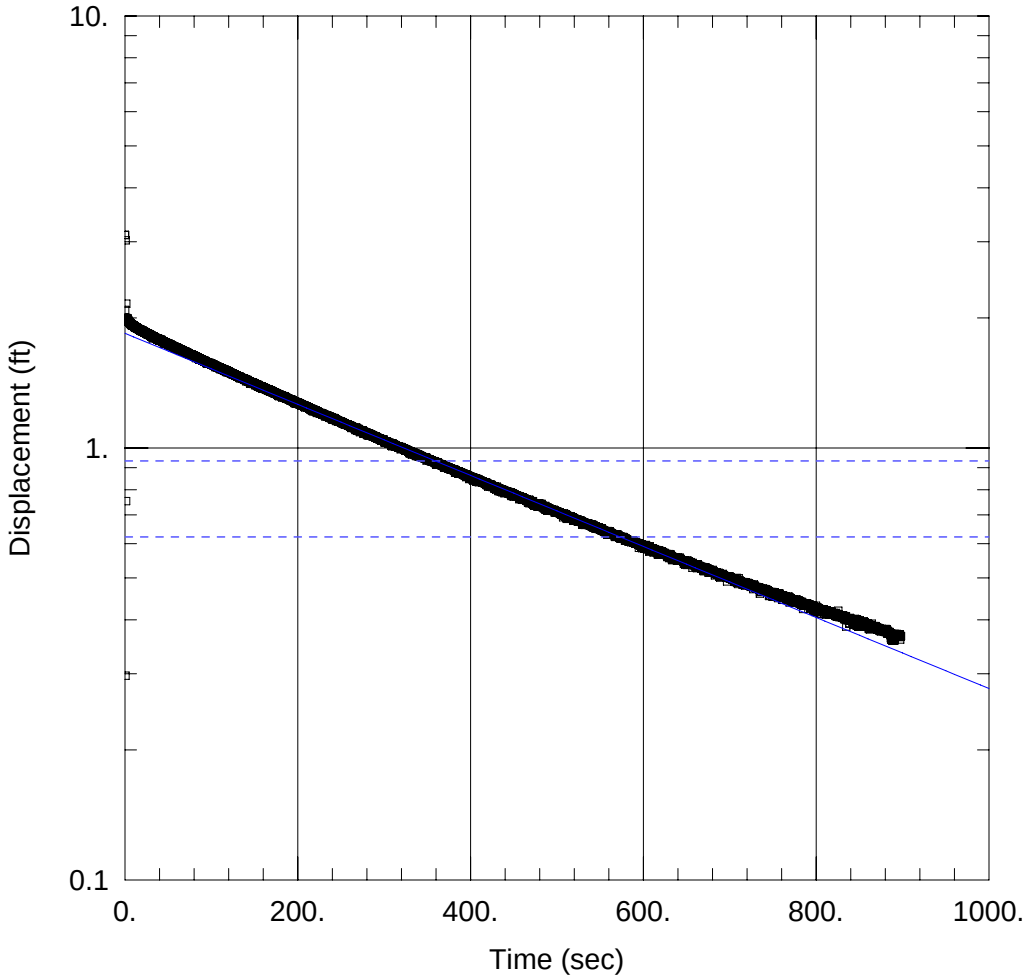
Saturated Thickness: 34. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW706DD)

Initial Displacement: 2.52 ft Static Water Column Height: 34. ft
Total Well Penetration Depth: 34. ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.2209 ft/day y0 = 1.814 ft



MW-706DD SOLID SLUG RISING HEAD TEST 2

Data Set: C:\...\MW706DD SS RH Test2.aqt
Date: 10/26/11 Time: 12:42:52

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-706DD
Test Date: 08-29-2011

AQUIFER DATA

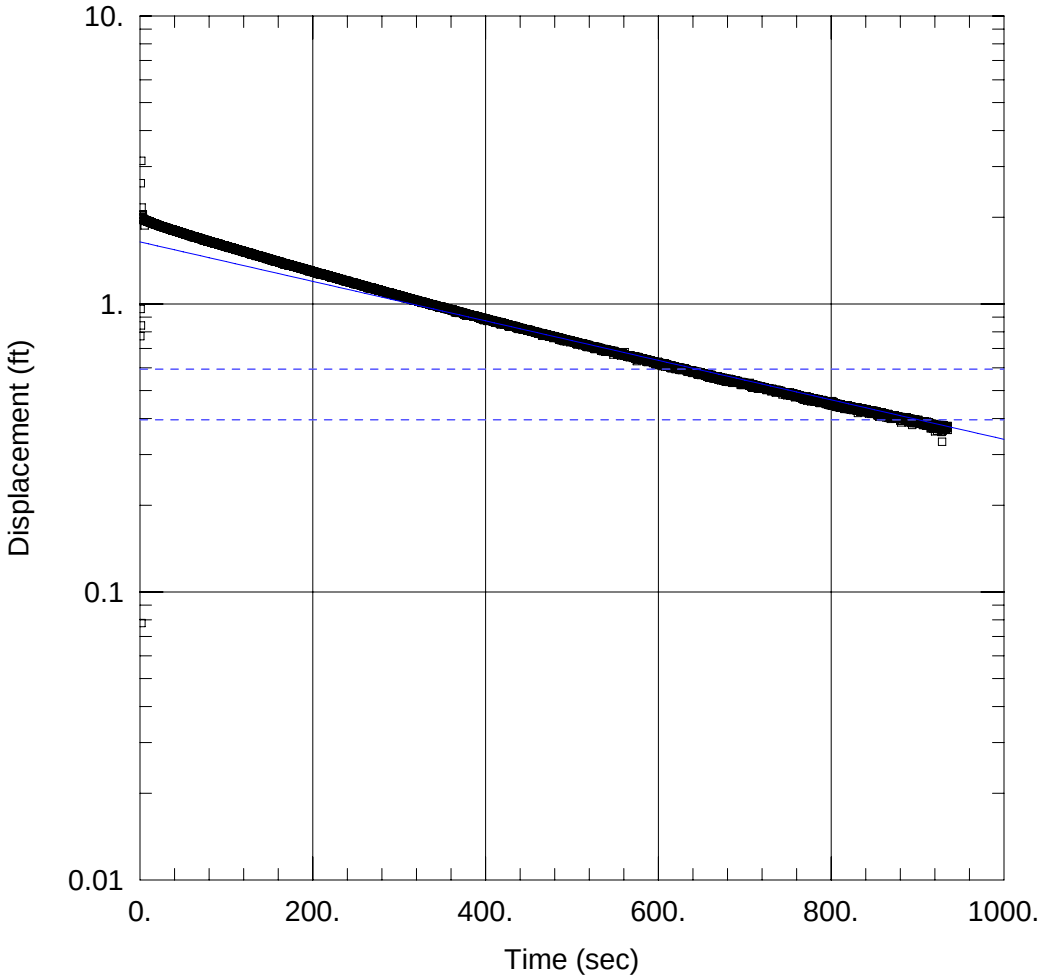
Saturated Thickness: 34. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW706DD)

Initial Displacement: 3.11 ft Static Water Column Height: 34. ft
Total Well Penetration Depth: 34. ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.2237 ft/day y0 = 1.842 ft



MW-706DD SOLID SLUG RISING HEAD TEST 3

Data Set: C:\...\MW706DD SS RH Test3.aqt
Date: 10/26/11 Time: 12:40:27

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-706DD
Test Date: 08-29-2011

AQUIFER DATA

Saturated Thickness: 34. ft Anisotropy Ratio (Kz/Kr): 1.

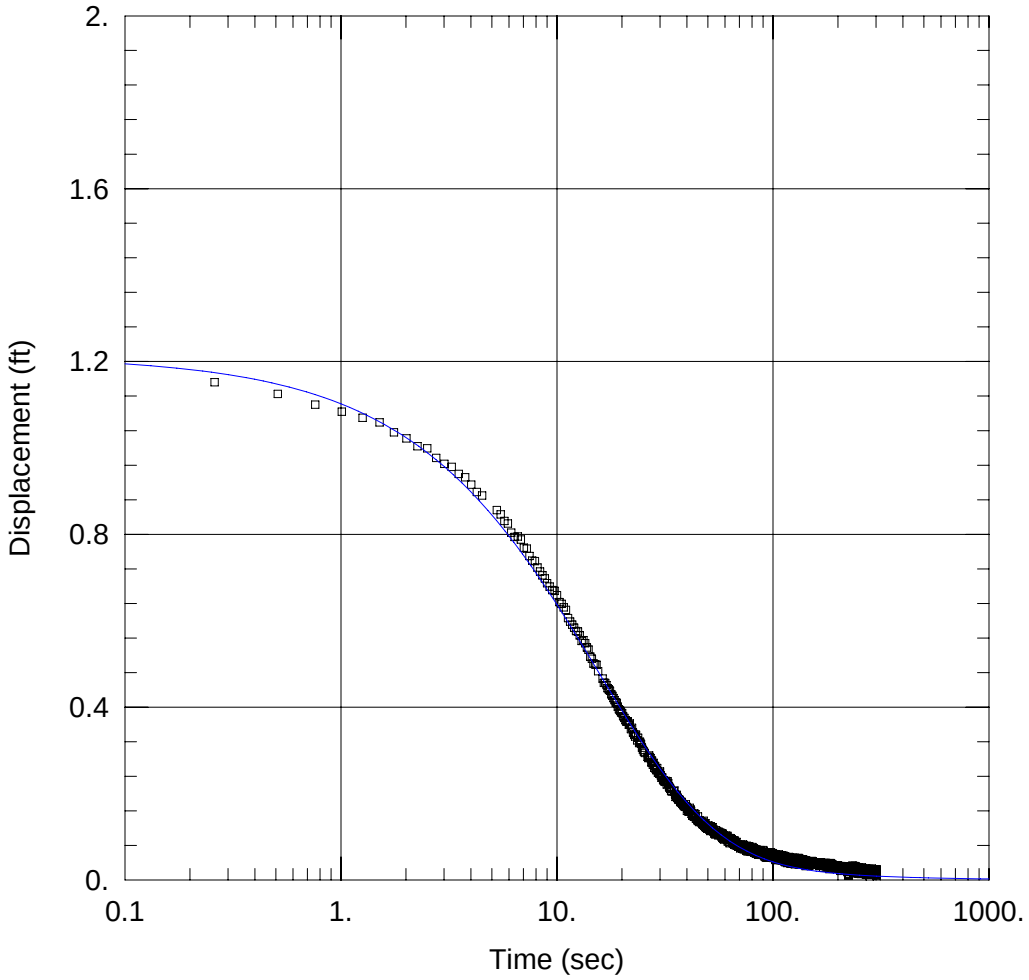
WELL DATA (MW706DD)

Initial Displacement: 1.978 ft Static Water Column Height: 34. ft
Total Well Penetration Depth: 34. ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.1865 ft/day y0 = 1.642 ft



MW708DD PNEUMATIC SLUG TEST 2

Data Set: C:\...\MW708DD Test 2.aqt
Date: 10/26/11 Time: 15:23:05

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-708DD Test 1
Test Date: 08-26-2011

AQUIFER DATA

Saturated Thickness: 31.58 ft

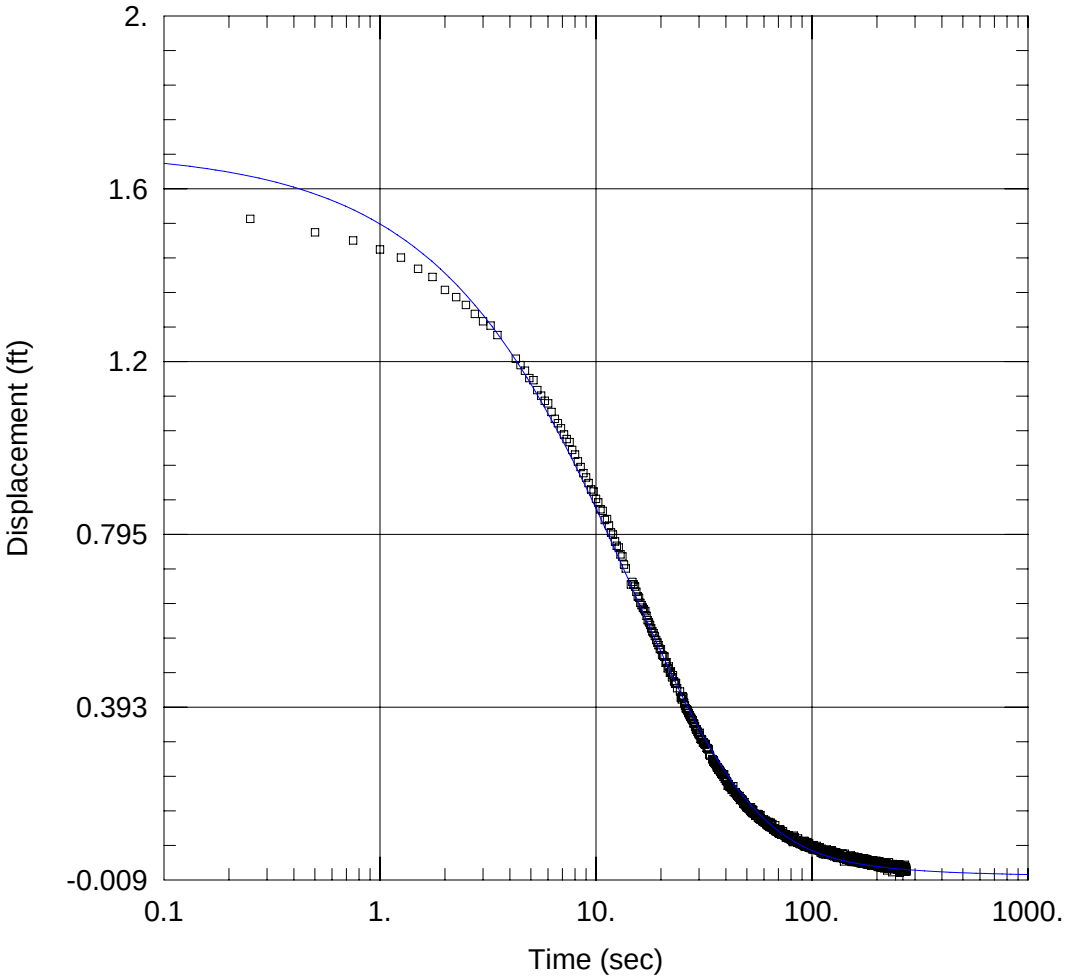
WELL DATA (MW708DD)

Initial Displacement: 1.214 ft
Total Well Penetration Depth: 31.58 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 31.58 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 7.399 ft/day
Kz/Kr = 0.001
Ss = 2.164E-5 ft^{-1}



MW708DD PNEUMATIC SLUG TEST 4

Data Set: C:\...\MW708DD Test 4.aqt
Date: 10/26/11 Time: 15:47:03

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-708DD
Test Date: 08-26-2011

AQUIFER DATA

Saturated Thickness: 31.58 ft

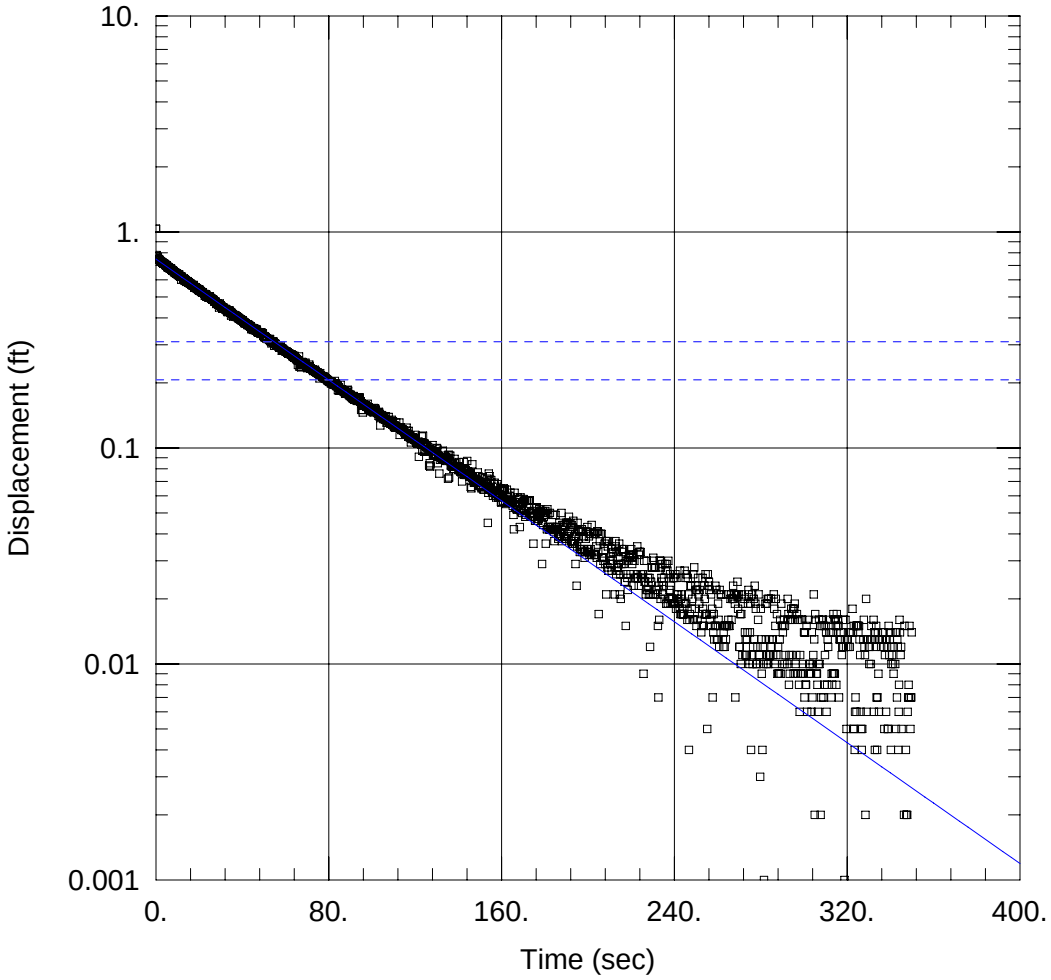
WELL DATA (MW708DD)

Initial Displacement: 1.69 ft
Total Well Penetration Depth: 31.58 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 31.58 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 6.966 ft/day
Kz/Kr = 0.001
Ss = 5.019E-5 ft^{-1}



MW709DD PNEUMATIC SLUG TEST1

Data Set: C:\...\MW709DD PS Test1.aqt
Date: 10/26/11 Time: 21:05:55

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-709DD
Test Date: 08-26-2011

AQUIFER DATA

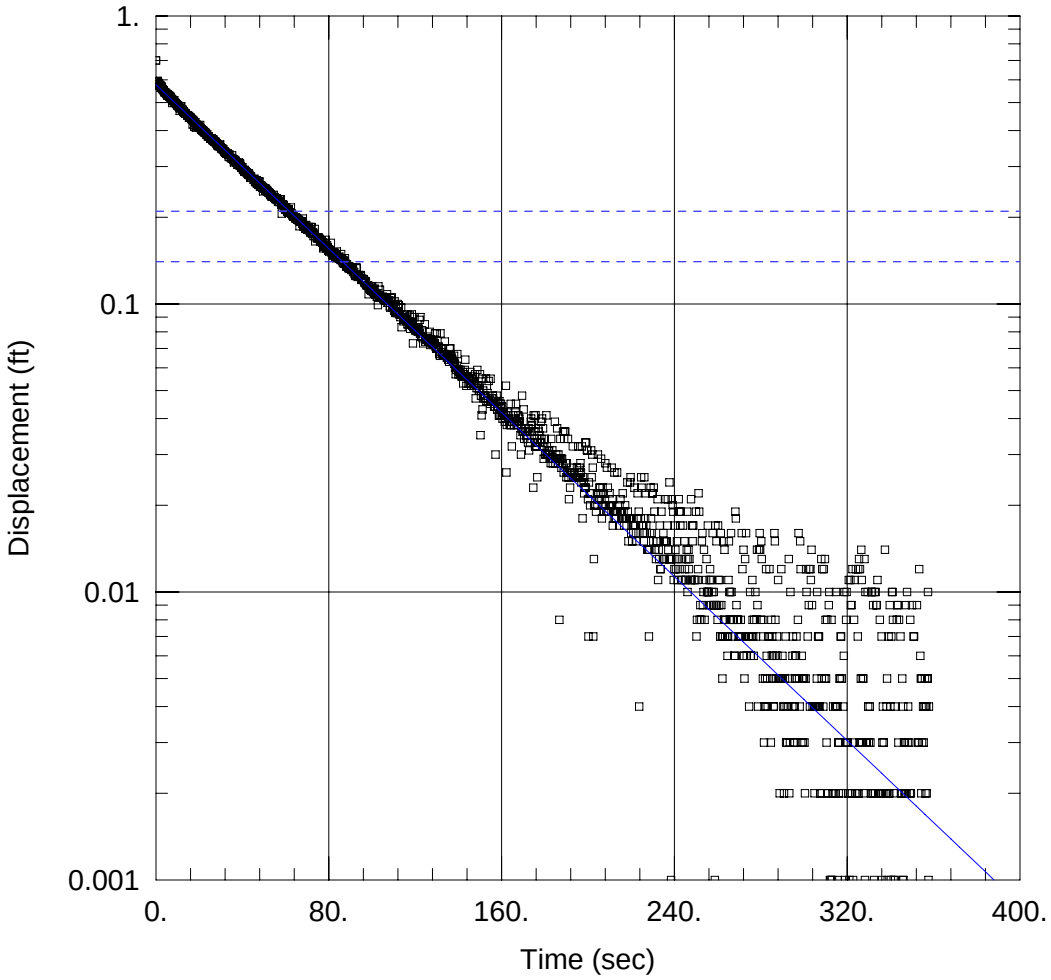
Saturated Thickness: 32.34 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-709DD)

Initial Displacement: 1.033 ft
Total Well Penetration Depth: 32.34 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 32.34 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 1.889 ft/day
y0 = 0.7485 ft



MW709DD PNEUMATIC SLUG TEST2

Data Set: C:\...\MW709DD PS Test2.aqt
Date: 10/26/11 Time: 21:11:01

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-709DD
Test Date: 08-26-2011

AQUIFER DATA

Saturated Thickness: 32.34 ft Anisotropy Ratio (Kz/Kr): 1.

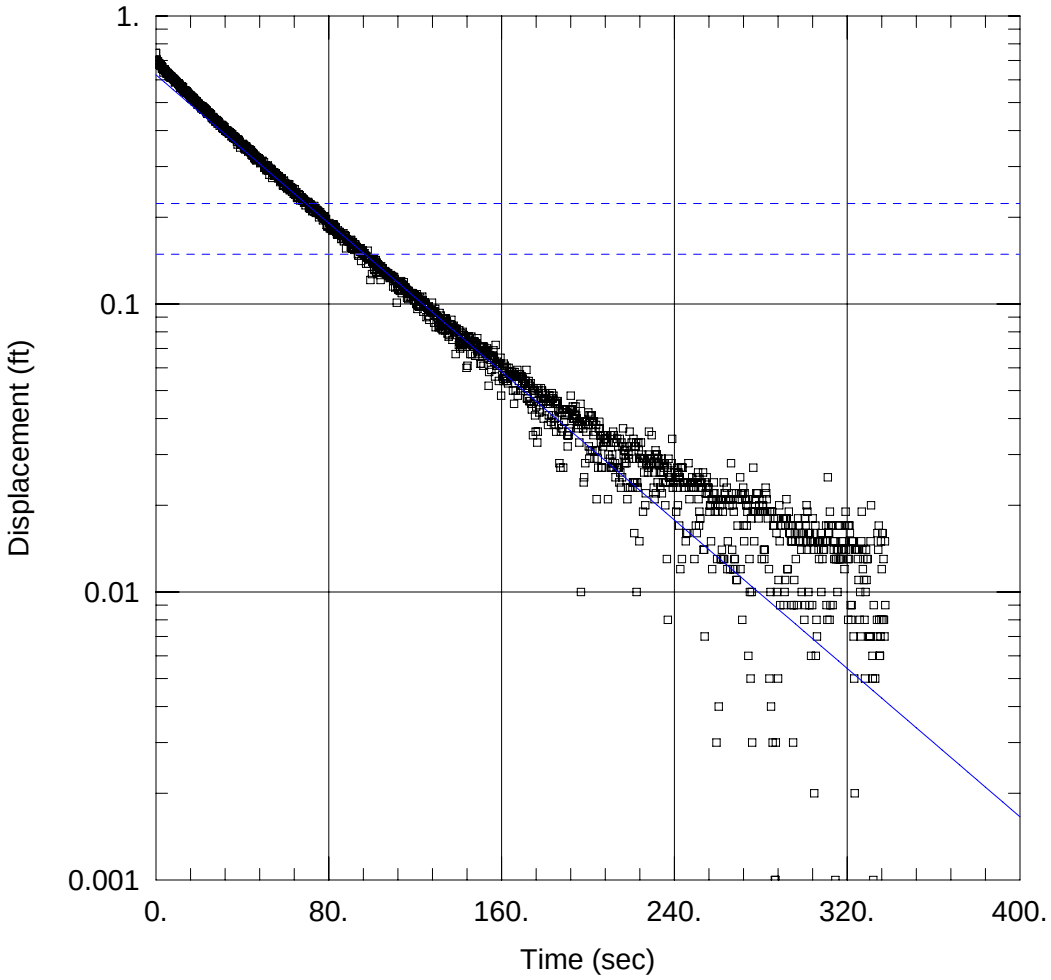
WELL DATA (MW-709DD)

Initial Displacement: 0.7 ft
Total Well Penetration Depth: 32.34 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 32.34 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 1.922 ft/day y0 = 0.577 ft



MW709DD PNEUMATIC SLUG TEST3

Data Set: C:\...\MW709DD PS Test3.aqt
Date: 10/26/11 Time: 21:15:58

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-709DD
Test Date: 08-26-2011

AQUIFER DATA

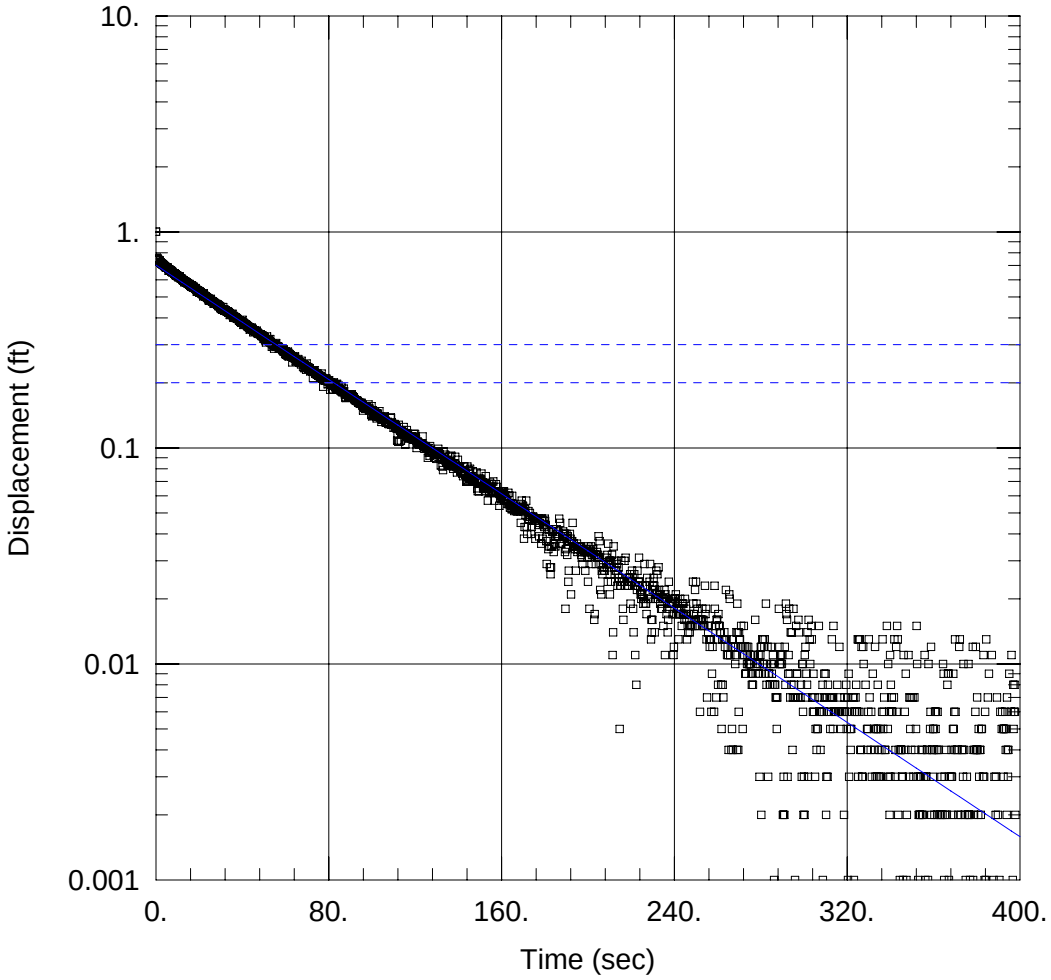
Saturated Thickness: 32.34 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-709DD)

Initial Displacement: 0.744 ft Static Water Column Height: 32.34 ft
Total Well Penetration Depth: 32.34 ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.739 ft/day y0 = 0.6242 ft



MW709DD PNEUMATIC SLUG TEST4

Data Set: C:\...\MW709DD PS Test4.aqt
Date: 10/26/11 Time: 21:19:25

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-709DD
Test Date: 08-26-2011

AQUIFER DATA

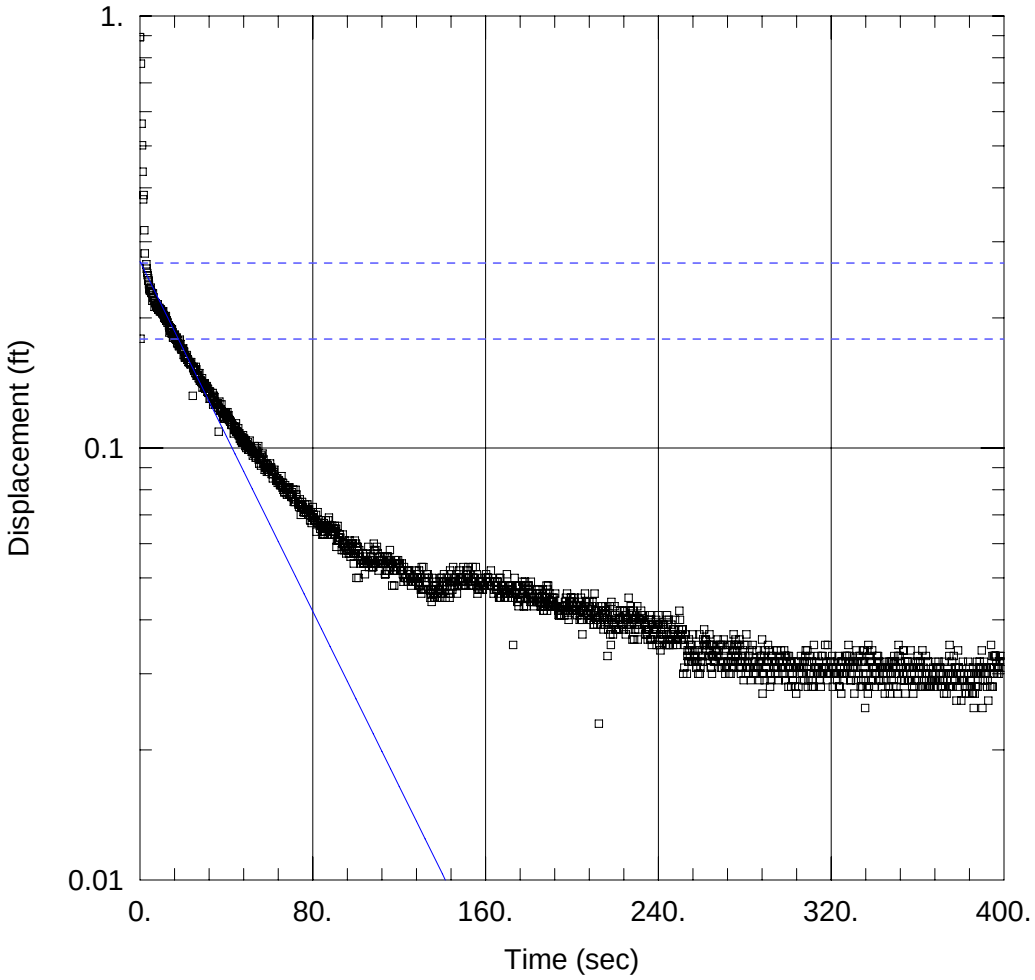
Saturated Thickness: 32.34 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-709DD)

Initial Displacement: 1.002 ft Static Water Column Height: 32.34 ft
Total Well Penetration Depth: 32.34 ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 1.787 ft/day y0 = 0.7018 ft



MW710D SOLID SLUG RISING HEAD TEST 1

Data Set: C:\...\MW710D RH Test1.aqt
Date: 10/26/11 Time: 22:48:42

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-710D
Test Date: 08-26-2011

AQUIFER DATA

Saturated Thickness: 9.429 ft Anisotropy Ratio (Kz/Kr): 1.

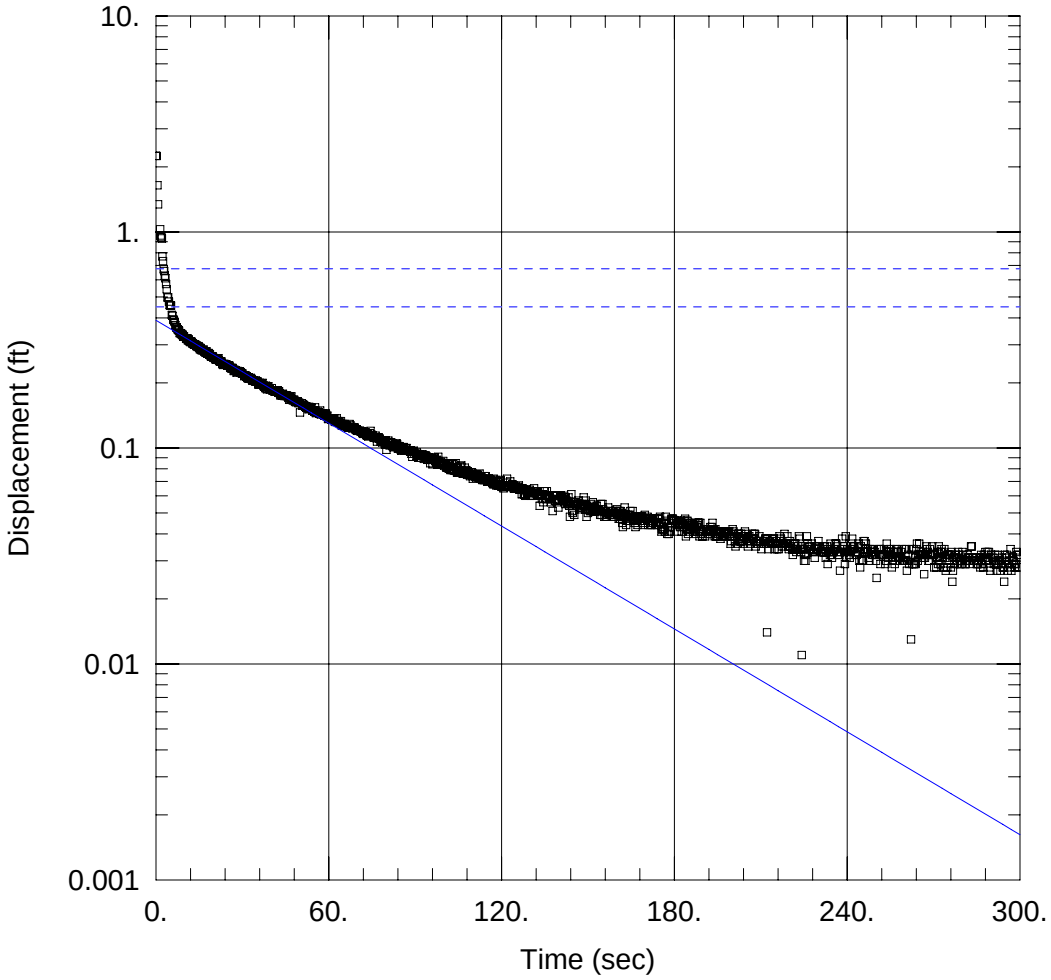
WELL DATA (MW710D)

Initial Displacement: 0.893 ft
Total Well Penetration Depth: 9.429 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 9.429 ft
Screen Length: 9.429 ft
Well Radius: 0.1575 ft
Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 4.422 ft/day y0 = 0.2702 ft



MW710D SOLID SLUG RISING HEAD TEST 3

Data Set: C:\...\MW710D RH Test3.aqt
Date: 10/26/11 Time: 23:07:03

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-710D
Test Date: 08-26-2011

AQUIFER DATA

Saturated Thickness: 9.429 ft Anisotropy Ratio (Kz/Kr): 1.

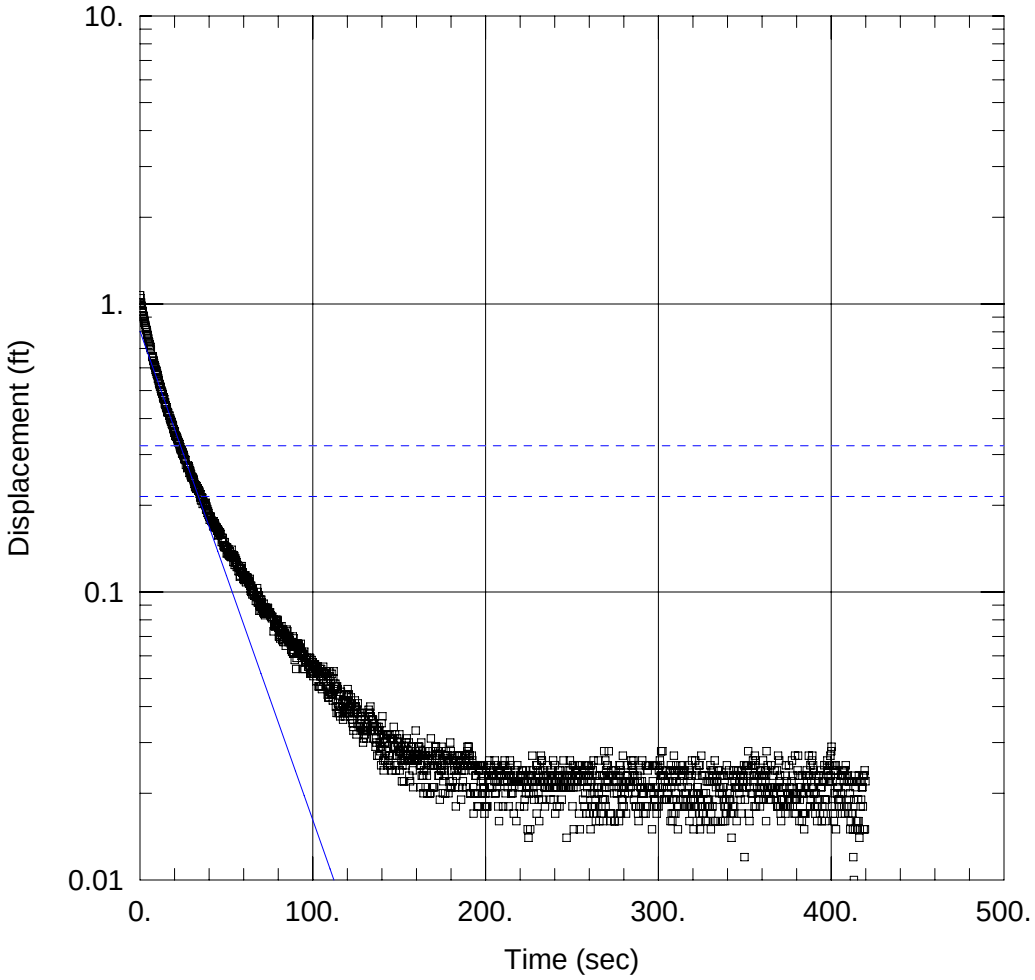
WELL DATA (MW710D)

Initial Displacement: 2.25 ft
Total Well Penetration Depth: 9.429 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 9.429 ft
Screen Length: 9.429 ft
Well Radius: 0.1575 ft
Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 3.467 ft/day y0 = 0.3898 ft



MW710DD PNEUMATIC SLUG TEST 3

Data Set: C:\...\MW710DD test3.aqt
Date: 10/26/11 Time: 23:30:39

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-710DD
Test Date: 08-24-2011

AQUIFER DATA

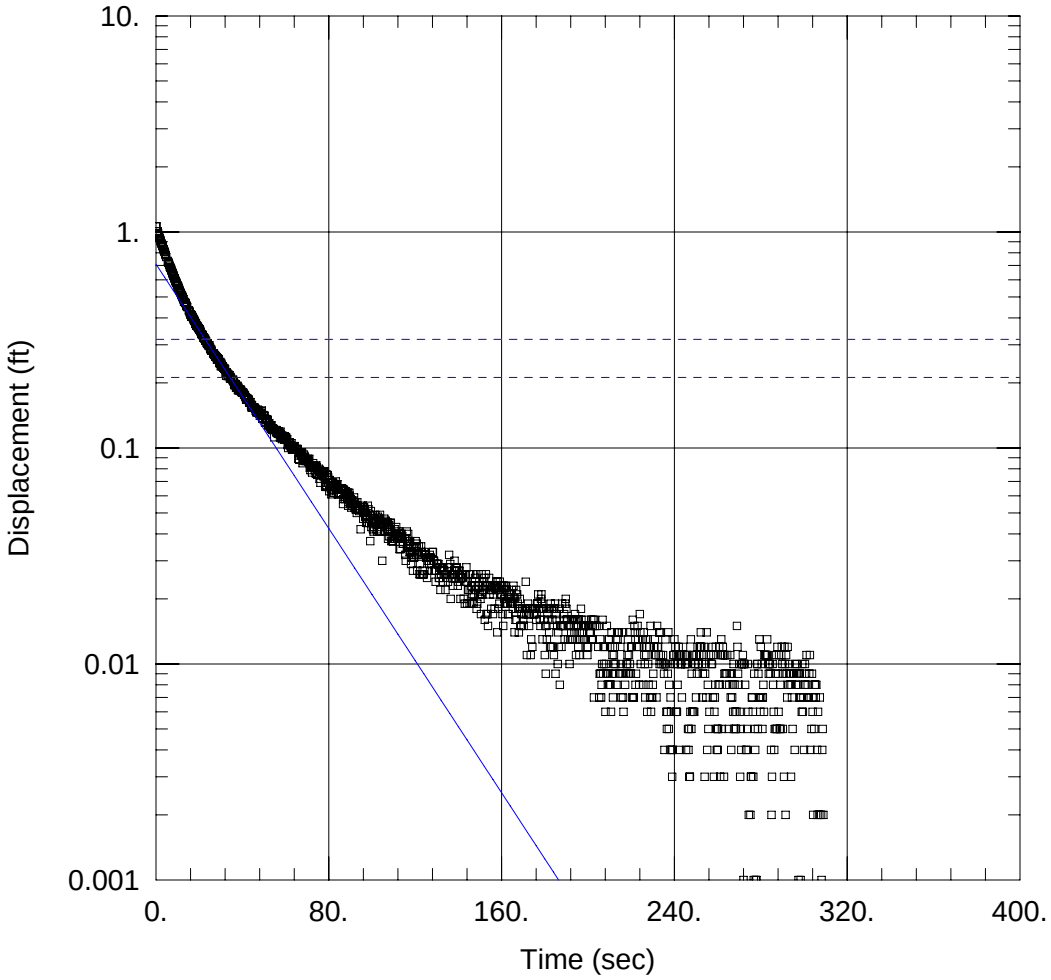
Saturated Thickness: 19.53 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW710DD)

Initial Displacement: 1.072 ft
Total Well Penetration Depth: 19.53 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 19.53 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 4.227 ft/day
y0 = 0.8043 ft



MW710DD PNEUMATIC SLUG TEST 4

Data Set: C:\...\MW710DD test4.aqt
Date: 10/26/11 Time: 23:37:30

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-710DD
Test Date: 08-24-2011

AQUIFER DATA

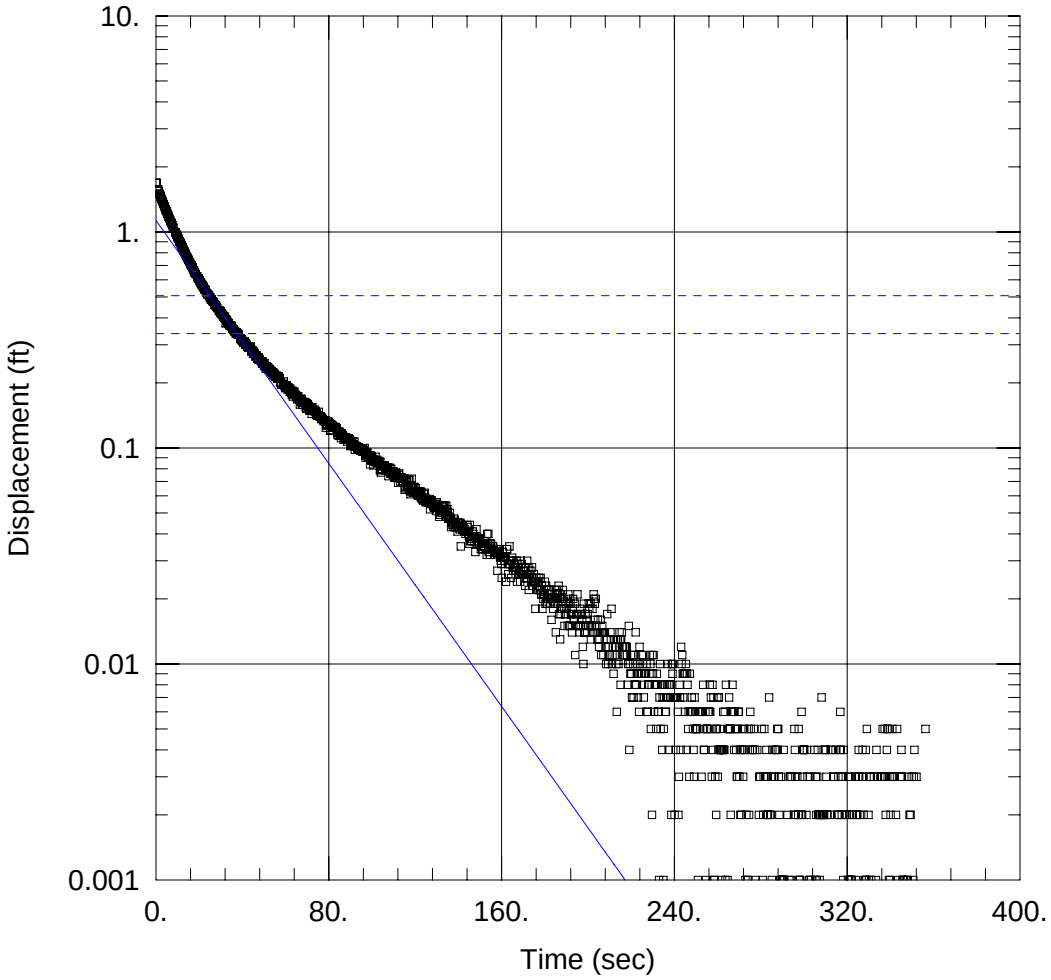
Saturated Thickness: 19.53 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW710DD)

Initial Displacement: 1.06 ft
Total Well Penetration Depth: 19.53 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 19.53 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 3.809 ft/day
y0 = 0.7095 ft



MW710DD PNEUMATIC SLUG TEST 5

Data Set: C:\...\MW710DD test5.aqt
Date: 10/26/11 Time: 23:42:37

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-710DD
Test Date: 08-24-2011

AQUIFER DATA

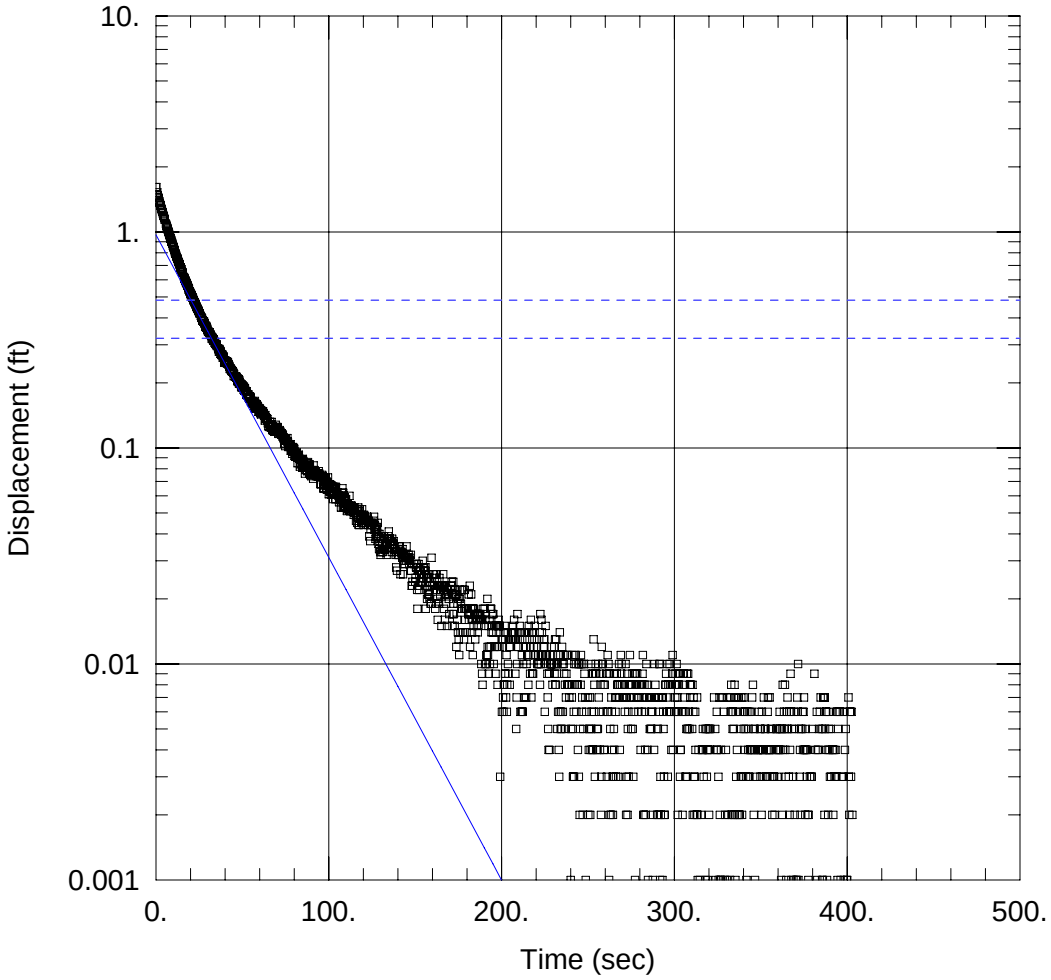
Saturated Thickness: 19.53 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW710DD)

Initial Displacement: 1.69 ft Static Water Column Height: 19.53 ft
Total Well Penetration Depth: 19.53 ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 3.5 ft/day y0 = 1.129 ft



MW710DD PNEUMATIC SLUG TEST 6

Data Set: C:\...\MW710DD test6.aqt
Date: 10/26/11 Time: 23:46:45

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-710DD
Test Date: 08-24-2011

AQUIFER DATA

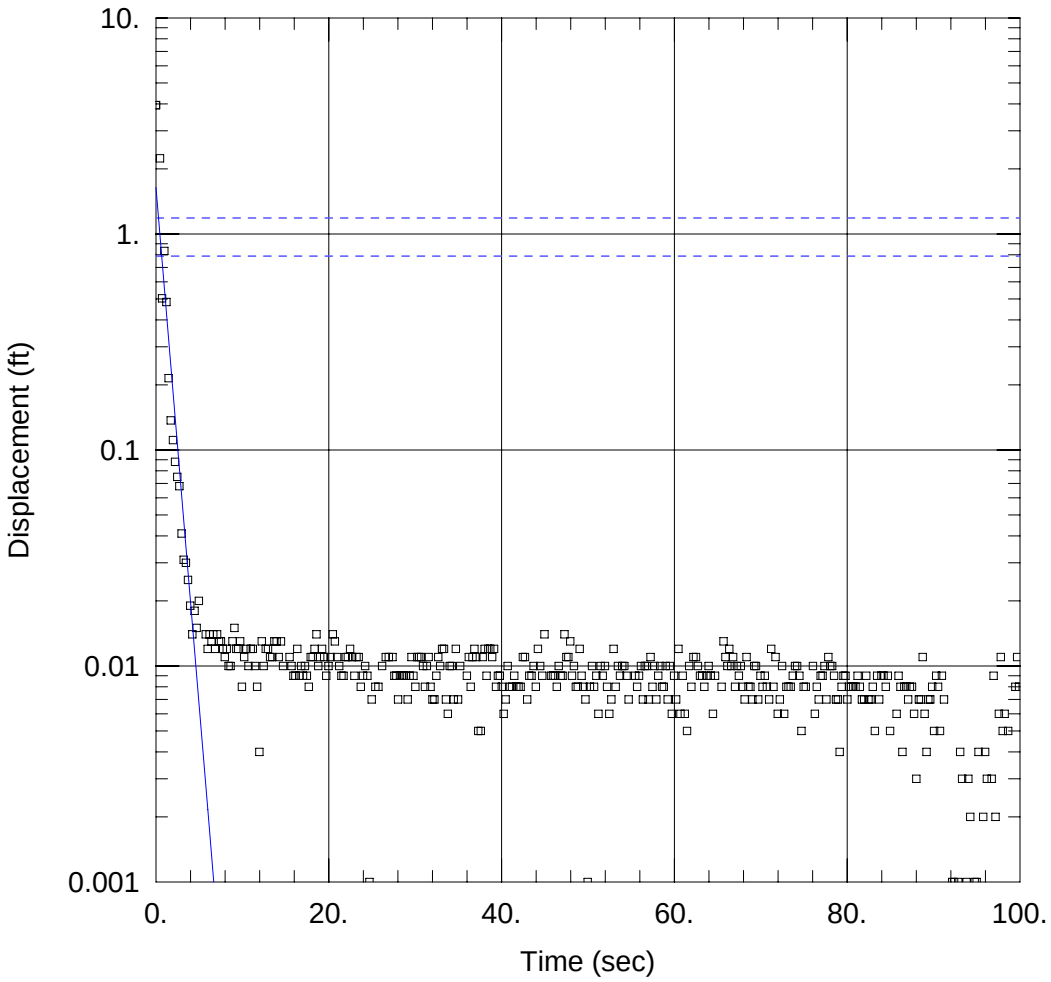
Saturated Thickness: 19.53 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW710DD)

Initial Displacement: 1.61 ft Static Water Column Height: 19.53 ft
Total Well Penetration Depth: 19.53 ft Screen Length: 10. ft
Casing Radius: 0.0833 ft Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 3.719 ft/day y0 = 0.9698 ft



MW-711D SOLID SLUG RISING HEAD TEST 1

Data Set: C:\...\MW711D RH Test1.aqt
Date: 10/27/11 Time: 00:03:22

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-711D
Test Date: 08-29-2011

AQUIFER DATA

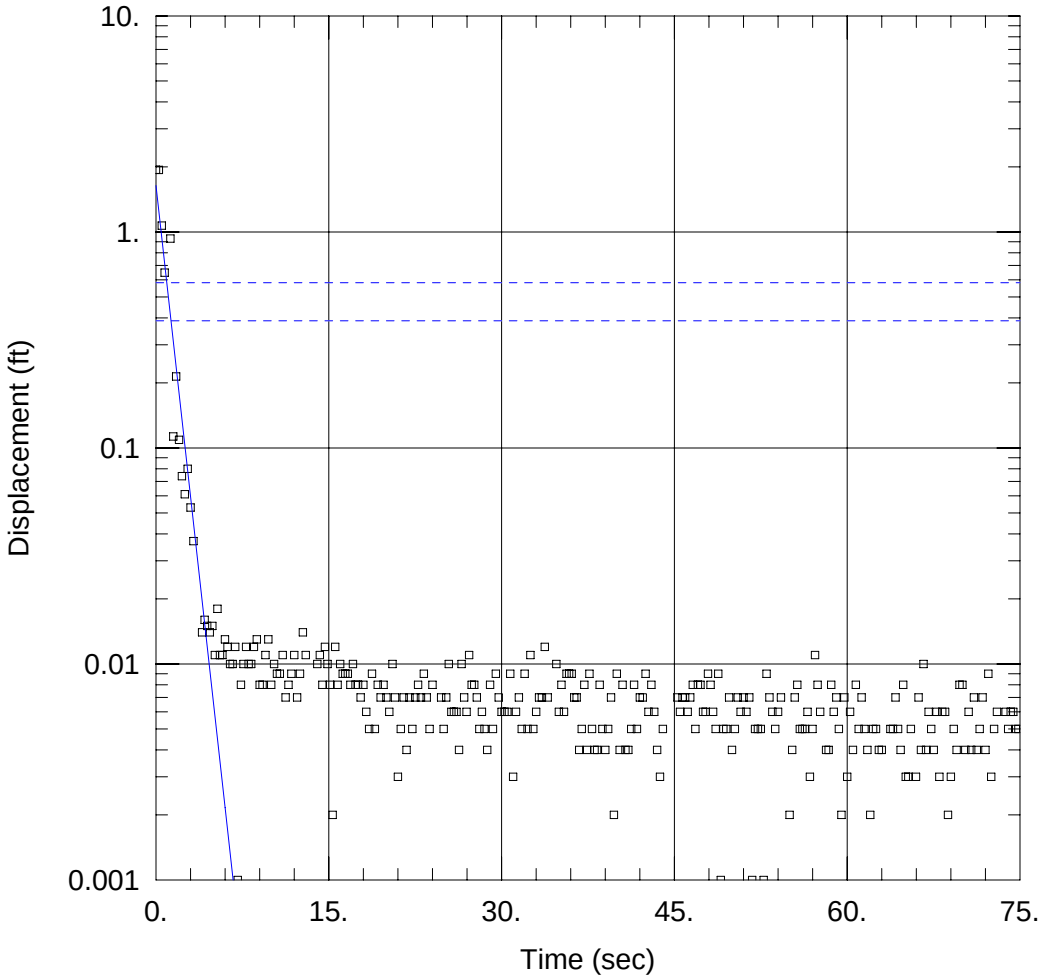
Saturated Thickness: 9.42 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW711D)

Initial Displacement: 3.95 ft Static Water Column Height: 9.42 ft
Total Well Penetration Depth: 9.42 ft Screen Length: 9.42 ft
Casing Radius: 0.0833 ft Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 110.4 ft/day y0 = 1.64 ft



MW-711D SOLID SLUG RISING HEAD TEST 2

Data Set: C:\...\MW711D RH Test2.aqt
Date: 10/27/11 Time: 00:12:08

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-711D
Test Date: 08-29-2011

AQUIFER DATA

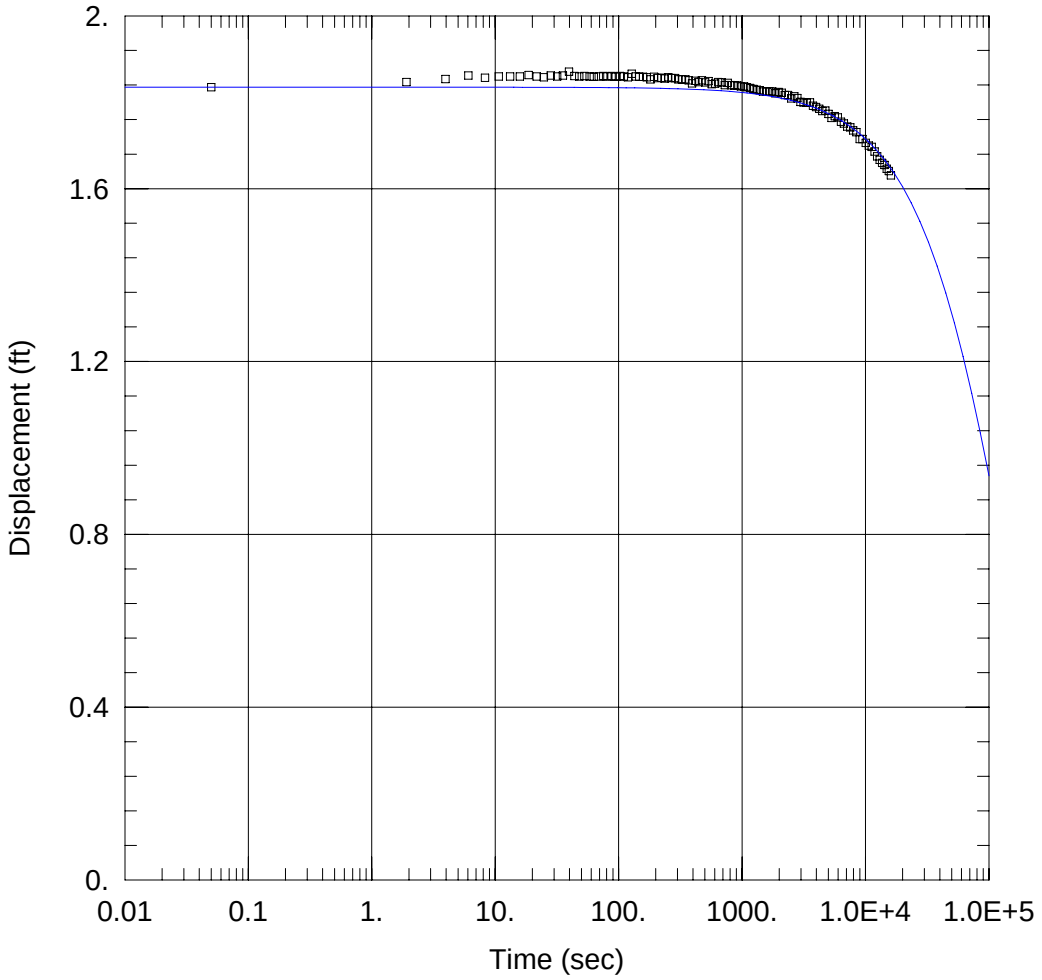
Saturated Thickness: 9.42 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW711D)

Initial Displacement: 1.94 ft
Total Well Penetration Depth: 9.42 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 9.42 ft
Screen Length: 9.42 ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 110.4 ft/day
y0 = 1.64 ft



MW711DD SOLID SLUG FALING HEAD TEST EXTRA

Data Set: C:\...\MW711DD SS FH extra.aqt
Date: 10/27/11 Time: 00:43:17

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-711DD
Test Date: 09-01-2011

AQUIFER DATA

Saturated Thickness: 30.74 ft

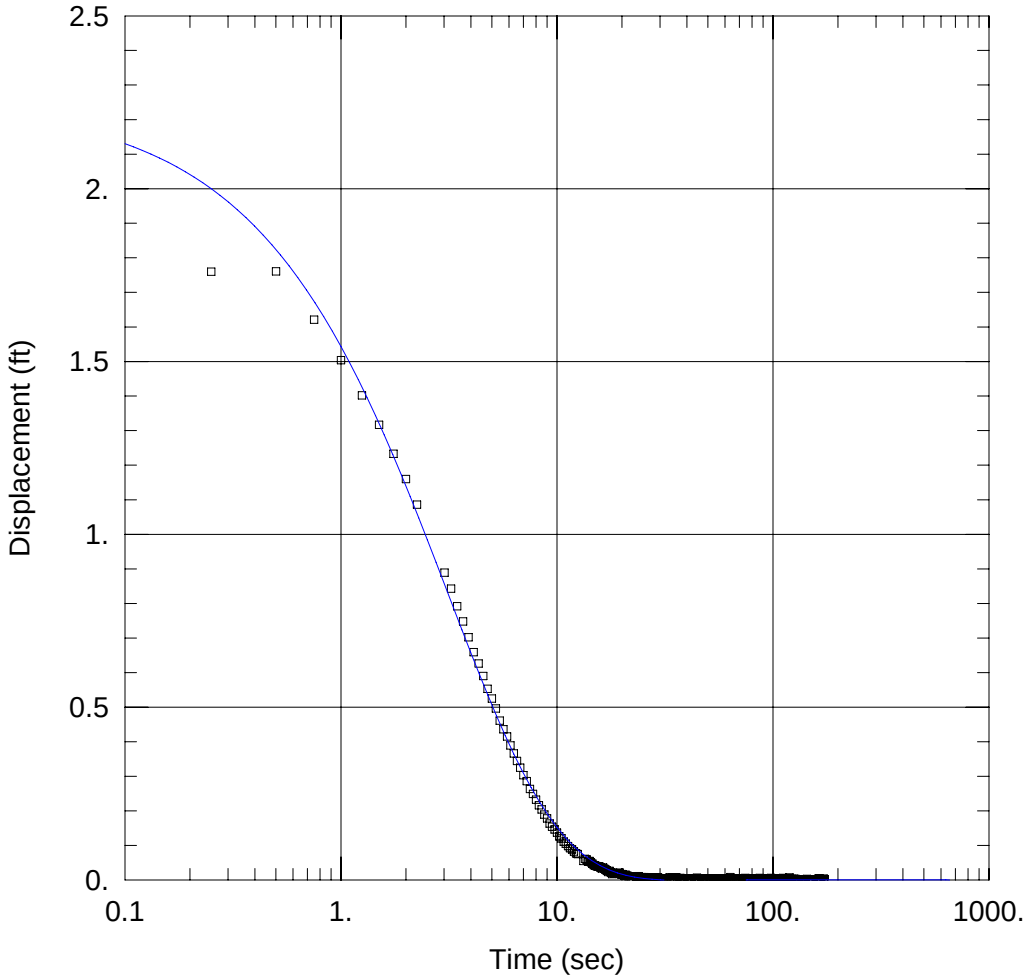
WELL DATA (MW711DD)

Initial Displacement: 1.835 ft
Total Well Penetration Depth: 30.74 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 30.74 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 0.0009261 ft/day
Kz/Kr = 1.
Ss = 1.137E-11 ft^{-1}



MW712DD PNEUMATIC SLUG TEST 1

Data Set: C:\...\MW712DD PS test 1.aqt
Date: 10/27/11 Time: 06:41:12

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-712DD
Test Date: 08-25-2011

AQUIFER DATA

Saturated Thickness: 11.61 ft

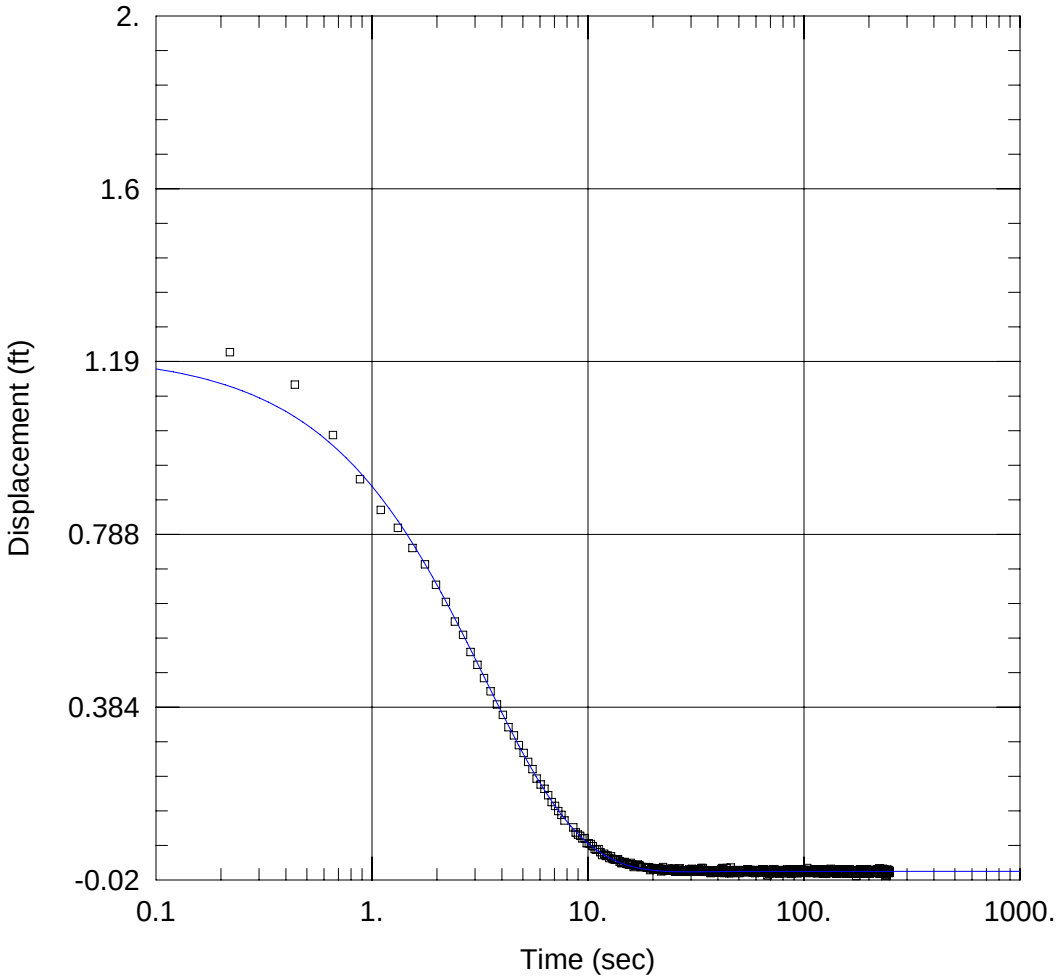
WELL DATA (MW712DD)

Initial Displacement: 2.26 ft
Total Well Penetration Depth: 11.61 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 11.61 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 33.88 ft/day
Kz/Kr = 1.
Ss = 3.799E-5 ft^{-1}



MW712DD PNEUMATIC SLUG TEST 2

Data Set: C:\...\MW712DD PS test 2.aqt
Date: 10/27/11 Time: 07:01:49

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-712DD
Test Date: 08-25-2011

AQUIFER DATA

Saturated Thickness: 11.61 ft

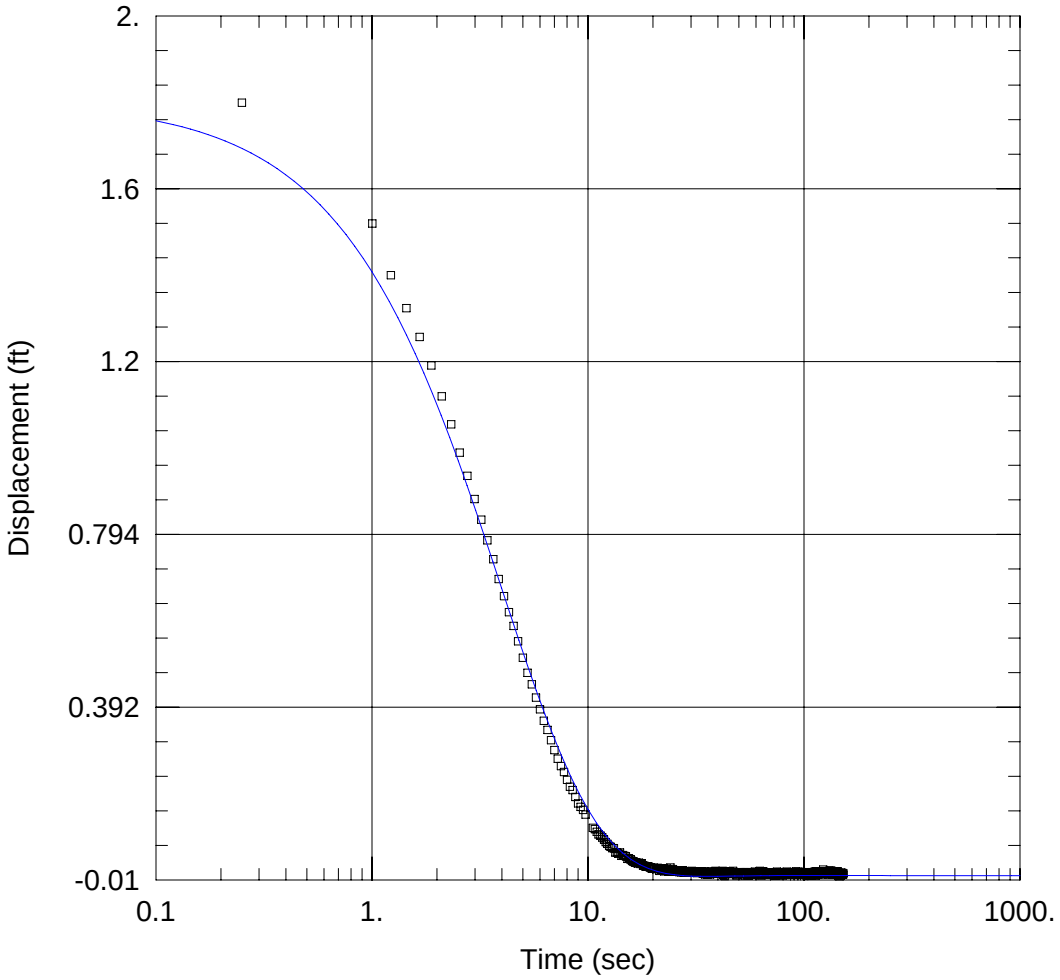
WELL DATA (MW712DD)

Initial Displacement: 1.21 ft
Total Well Penetration Depth: 11.61 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 11.61 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft
Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 54.33 ft/day
Kz/Kr = 1.
Ss = 9.227E-12 ft^{-1}



MW712DD PNEUMATIC SLUG TEST 3

Data Set: C:\...\MW712DD PS test 3.aqt
Date: 10/27/11 Time: 07:08:00

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-712DD
Test Date: 08-25-2011

AQUIFER DATA

Saturated Thickness: 11.61 ft

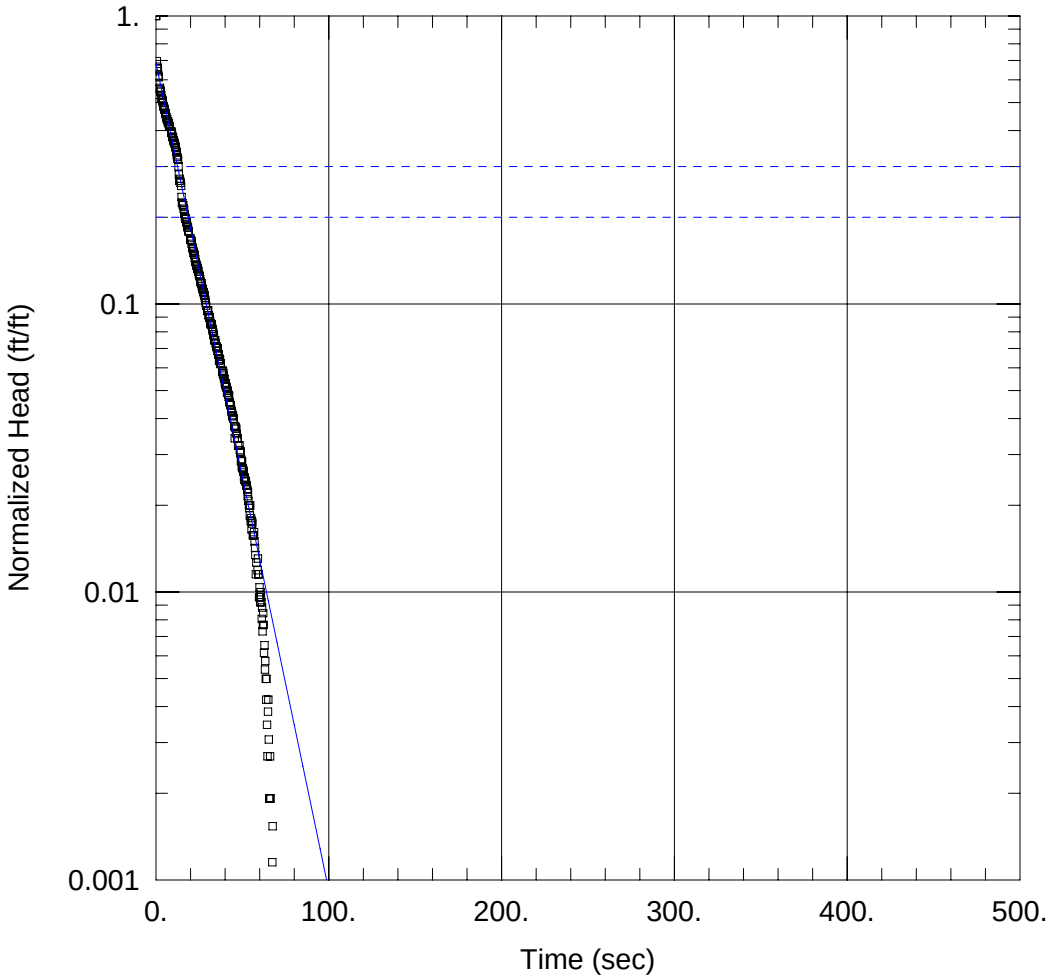
WELL DATA (MW712DD)

Initial Displacement: 1.8 ft
Total Well Penetration Depth: 11.61 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 11.61 ft
Screen Length: 10. ft
Well Radius: 0.1575 ft
Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 30.66 ft/day
Kz/Kr = 1.
Ss = 9.227E-12 ft^{-1}



MW713D SOLID SLUG RISING HEAD TEST 1

Data Set: C:\...\MW713D SS RH1 1.aqt
Date: 10/27/11 Time: 08:35:19

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-713D
Test Date: 08-25-2011

AQUIFER DATA

Saturated Thickness: 9.72 ft Anisotropy Ratio (Kz/Kr): 1.

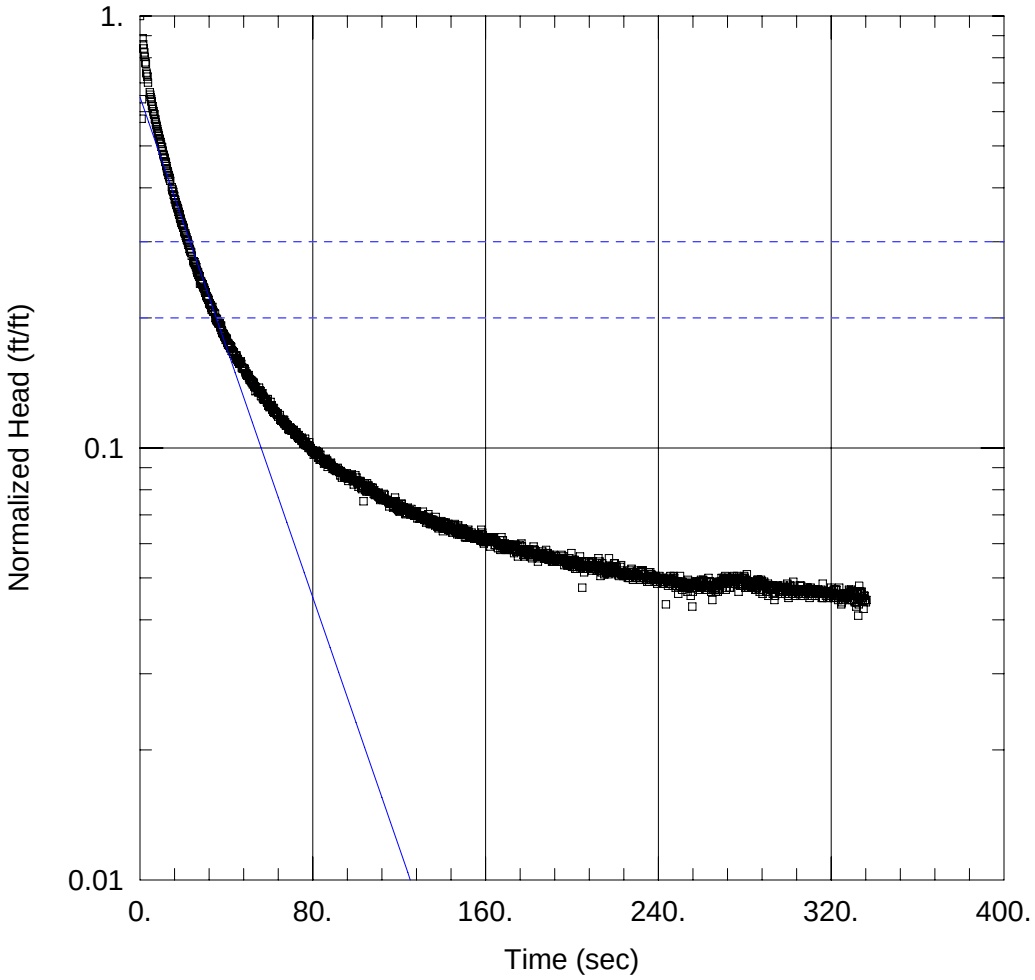
WELL DATA (MW713D)

Initial Displacement: 2.605 ft
Total Well Penetration Depth: 9.72 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 9.72 ft
Screen Length: 9.72 ft
Well Radius: 0.1575 ft
Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 12.26 ft/day y0 = 1.786 ft



MW713D SOLID SLUG RISING HEAD TEST 2

Data Set: C:\...\MW713D SS RH2.aqt
Date: 10/27/11 Time: 09:04:16

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-713D
Test Date: 08-25-2011

AQUIFER DATA

Saturated Thickness: 9.72 ft Anisotropy Ratio (Kz/Kr): 1.

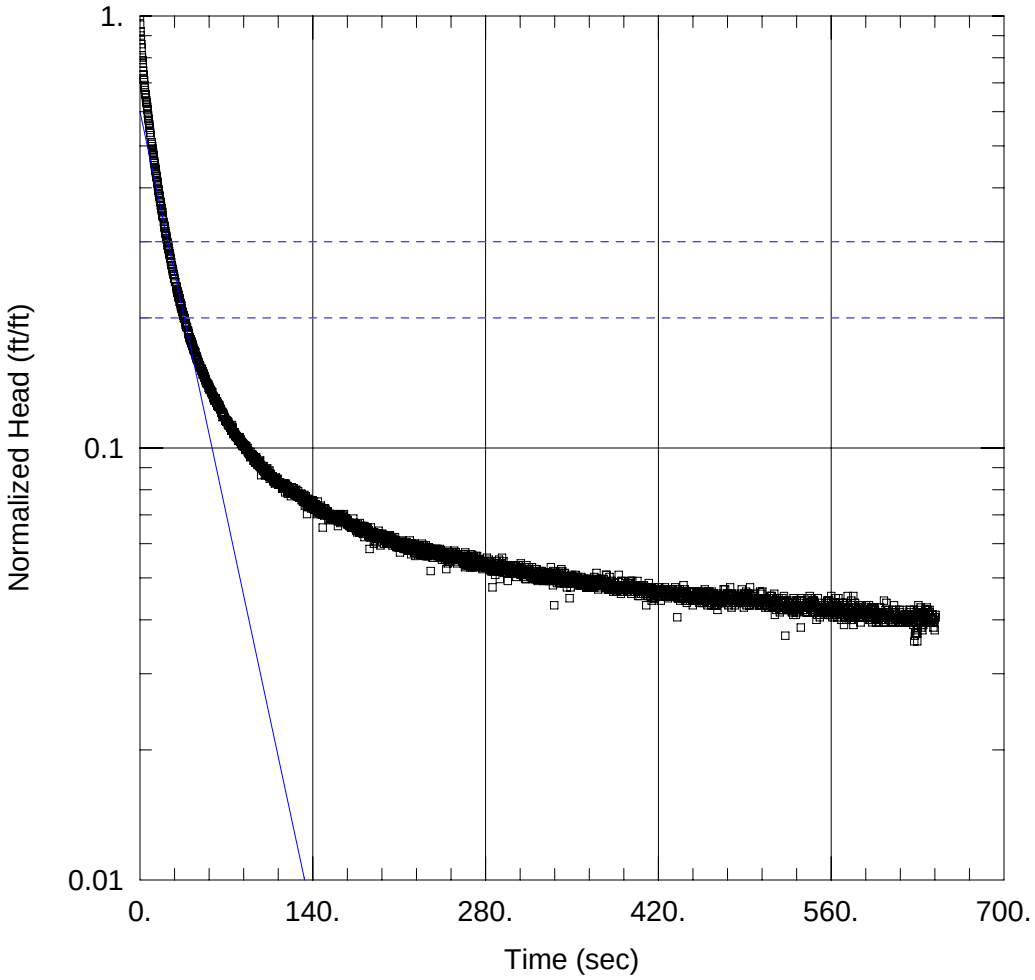
WELL DATA (MW713D)

Initial Displacement: 1.98 ft
Total Well Penetration Depth: 9.72 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 9.72 ft
Screen Length: 9.72 ft
Well Radius: 0.1575 ft
Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 6.18 ft/day y0 = 1.285 ft



MW713D SOLID SLUG RISING HEAD TEST 3

Data Set: C:\...\MW713D SS RH3.aqt
Date: 10/27/11 Time: 09:09:17

PROJECT INFORMATION

Client: USACE Buffalo District
Project: Guterl Speciality Steel Corp.
Location: Lockport, New York
Test Well: MW-713D
Test Date: 08-25-2011

AQUIFER DATA

Saturated Thickness: 9.72 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW713D)

Initial Displacement: 1.85 ft
Total Well Penetration Depth: 9.72 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 9.72 ft
Screen Length: 9.72 ft
Well Radius: 0.1575 ft
Gravel Pack Porosity: 0.35

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 5.693 ft/day y0 = 1.111 ft

APPENDIX F

Sample Collection Logs
(Provided on Same CD as Appendix A)

Guterl Steel DGI

Ground Water Level Survey August 2011

Order	Well ID	DTW	DTCB	Water Column	Notes	PID (ppm v)
1	MW-24 Flush	~4.02'	~16.67'	12.65'	Tubing	0.2
2	MW-26 Flush	3.27'	16.91'	13.64'	Yes	0.6
3	**MW-707 DD** Flush	35.10'	39.53'	4.43'	No	Rain in 3-9
4	MW-25 Flush	2.66'	15.99'	13.33'	Tubing	17.6
5	MW-23 Stickup	5.96'	19.05'	13.09'	" No Lock	0.0
6	MW-605D Flush	3.21	17.40'	14.19'	" Lock Not working	0.8
* 7	MW-704 DD Flush	3.10'	38.79'	35.69'	No Tubing	2.8
8	MW-18 Stick	7.42'	18.02'	10.61'	Tubing Yes	0.0
9	MW-19 stickup	10.13'	19.89'	9.76'	" " No Lock Soft Btm	0.3
* 10	MW-706 DD stickup	9.62'	42.30'	32.68'	No Tubing Lock	0.8
11	MW-604D Flush	7.06'	18.09'	11.03'	No LOCK Tubing -	0.3
* 12	MW-709 DD Flush	8.07'	40.25'	32.18'	No Tubing	0.4
13	**MW-712 D** Stickup	DRY	22.02'	0.0	"	1.3
14	MW-712 DD stickup	30.18'	41.76'	11.58	"	0.9
15	MW-710 D Stickup	12.17'	21.37' 14.35'	9.2	No	0.8
? 16	MW-710 DD Stickup	22.62'	41.97	19.35	No	2.6
17	MW-713 D Stickup	12.20'	21.99'	9.79	No	Rain 3.5
* 18	MW-708 DD Flush	8.16'	39.67'	31.51	No	0.9

Guterl Steel DGI

Ground Water Level Survey August 2011

	Order	Well ID	DTW	DTCB	Water Column	Notes	PID (ppmv)
	19	MW-711 D Stickup	12.55'	21.95'	9.4'	No Tubing	0.3
*	20	MW-711 DD stick up	11.37'	42.21'	30.84'	" "	0.5
	21	MW-705 D Stickup	7.56'	21.43'	13.87'	" "	0.3
*	22	MW-705 DD Stickup	7.41'	41.54'	34.13'	" "	0.3
	23	MW-22 Stickup	7.16'	20.18'	13.02'	Tubing - Yes Locker Doesn't work	0.4
	24	MW-603D	7.22'	22.62'	15.4'	" " No Lock	0.2
	25	MW-07 HB stickup	7.74'	20.18	12.44'	" " Needs Lock	0.3
	26	MW-3 HB stickup	5.68'	16.05'	10.37'	Tubing yes No Lock	0.5
	27	MW-12 HB Stick up	6.43'	20.20	13.77'	Tubing yes Locked	0.2
	28	MW-5 HB Stickup	5.50'	17.46'	11.96'	Tubing yes Needs Lid & lock	0.2
	29	MW-10 HB Stickup	8.54'	20.18'	11.64'	No Tubing Needs a Lock	0.0
	30	MW-06 HB Stick up	7.68'	19.01'	11.33'	Tubing Yes No Lock	0.1
	31	MW-1 HB stick up	7.02'	16.89'	9.87'	" " NOT Locked	0.0
	32	MW-08 HB Stickup	9.14'	19.97'	10.83'	" "	1.4
	33	MW-09 HB Stick up	8.38'	19.13'	10.75'	" " Not Locked	1.3
	34	MW-2 HB Stick up	8.59'	16.01'	7.42'	" " " "	1.2
	35	MW-11 HB stick up	9.56'	21.17'	11.61'	" " " "	2.1
	36	MW-602D HB Stickup	9.47'	22.08'	12.61'	" " " "	0.8
*	37	MW-702 DD HB Stickup	9.14'	41.60'	32.46'	No Tubing Locked	0.3

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-03 **Personnel:** KEVIN CROWLEY

Casing Dia. (in): 2" PVC

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: ~5.52' BTOC

(B) Total Depth: _____

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other _____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = _____ **Equipment:** GEO PUMP

Purge Start Date/Time: 8/22/11 1330 **Serial No:** LVE 002920

Sample Date/Time: 8/22/ 1345 **Equipment:** YSI 6280

Weather: M. SUNNY, BREEZY, 72°F **Serial No:** 85281

Sampling Parameters: (circle) (VOCs, ANIONS, GEN CHEM, FILTERED/UNFILTERED TAL METALS, TOTAL & ISOTOPIC U.

Comments: REDDISH, SLT TURBID, CLEARING UP

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	mg/l DO	ORP (mV)	Turb. (NTU)
1332	~5.52'	0.1	6.92	14.77	0.764	1.05	-66.4	49.3
1335	5.57'	0.3	6.85	14.39	0.754	0.49	-62.5	44.1
1337	5.58'	0.7	6.84	14.49	0.749	0.43	-60.0	26.7
1340	5.59'	1.0	6.84	14.46	0.745	0.31	-58.0	13.4
1342	5.58'	1.5	6.84	14.37	0.744	0.31	-56.2	7.7

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-4 **Personnel:** Kevin Crowin

Casing Dia. (in): 2" PVC

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: ~6.19' BTOC

(B) Total Depth: ~16.40'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = ~1.7 **Equipment:** Peristaltic Pump

Purge Start Date/Time: 8/19/11 1145 **Serial No:** CVE 002920

Sample Date/Time: 8/19/11 1200 **Equipment:** YSI 6280

Weather: Sunny, 75 **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), Gen Chem/Anions, (TAL Metals Total + Isotopic U; Filtered + Unfiltered)

Comments: Clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO mg/L	ORP (mV)	Turb. (NTU)
1148	6.85	0.1	7.51	16.72	0.605	1.99	53.6	64.3
1150	6.83	0.3	7.36	16.02	0.648	1.79	71.8	193.7
1152	6.85	0.5	7.30	15.85	0.649	1.32	84.8	17.7
1154	6.84	0.7	7.30	15.66	0.647	0.67	90.3	-10.9
1156	6.83	1.0	7.30	15.69	0.642	0.73	93.6	86.6
1158	6.82	1.2	7.28	15.75	0.639	0.51	96.3	198.4

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-05 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 5.44'

(B) Total Depth: _____

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other _____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = _____ **Equipment:** Peristaltic

Purge Start Date/Time: 8-22-11 / 1047 **Serial No:** LVE-002920

Sample Date/Time: 8-22-11 / 1105 **Equipment:** YSI-650

Weather: Partly cloudy 65°, 5 mph, wind, 70% humidity **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), m+s, U, O gen chem

Comments: water is clear COLLECTED MS/MSD @ THIS LOCATION

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1048	5.50	0.2	7.24	14.14	0.701	3.80	-35.3	-0.6
1053	5.55	0.7	7.02	12.94	0.686	0.85	-82.8	22.1
1055	5.57	1.0	7.02	12.87	0.689	0.56	-84.7	-4.1
1057	5.58	1.2	7.02	12.88	0.693	0.51	-86.4	-2.7
1059	5.59	1.4	7.02	12.78	0.694	0.56	-85.5	-5.0
1100	5.60	1.5	7.03	12.72	0.694	0.44	-85.4	-4.8
1101	5.61	1.6	7.03	12.67	0.695	0.39	-87.8	-4.1
1102	5.62	1.7	7.03	12.66	0.695	0.37	-88.1	-4.7
			8-22-11					
			TR.					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-06 **Personnel:** TRENT RICHARDS

Casing Dia. (in): 2" KEVIN CROWLEY

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: ~7.67' PID: 0.2 ppmv

(B) Total Depth: ~19.0'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.8 **Equipment:** Peristaltic

Purge Start Date/Time: 8/12/11 0940 **Serial No:** LVE 002920

Sample Date/Time: 8/12/11 1000 **Equipment:** YSI-650

Weather: SUNNY, 70° **Serial No:** 85287

Sampling Parameters: (circle) ~~VOCs~~ TPH 8.12.11 Mtls, U, & gen chem

Comments: Water is clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0942	8.22	0.2	7.30	14.30	1.138	3.08	88.1	46.4
0946	8.22	0.5	7.01	13.66	1.067	0.87	86.9	150.5
0948	8.23	0.7	6.98	13.68	1.058	0.46	89.3	8.9
0950	8.25	1.0	6.97	13.64	1.035	0.36	90.2	73.9
0952	8.27	1.2	6.96	13.70	1.018	0.41	91.2	0.6
0954	8.28	1.5	6.96	13.78	1.017	0.39	91.4	21.0
0955	8.28	1.7	6.96	13.76	0.994	0.27	93.0	79.2
0956	8.27	1.8	6.96	13.78	0.993	0.27	93.3	80.9
			8-12-11					
			TR					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-07 **Personnel:** K. Cronin
T. Richards

Casing Dia. (in): 2"

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 7.90 PID reading 0.3 ppm

(B) Total Depth: 20.18

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.9 **Equipment:** Peristaltic

Purge Start Date/Time: 8-12-11 / 1115 **Serial No:** LVE 002920

Sample Date/Time: 8-12-11 / 1135 **Equipment:** YSI 650

Weather: Clear, calm, 80°, humidity 70% **Serial No:** 85287

Sampling Parameters: (circle) ~~VOCs~~ mtls, U, & gen chem

Comments: First 15 gallons very red, flocculant of Fe,

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1118	8.00	.52	7.67	24.68	0.005	7.03	43.0	49.5
								TR 8-12-11
~~1122~~	~~8.09~~	~~.8~~	~~7.86~~	~~25.67~~	~~0.005~~	TR 8-12-11		
1123	8.09	.8	7.20	16.00	0.895	1.07	-43.4	29.5
1127	8.12	1.2	7.03	15.43	0.887	0.28	-35.1	17.1
1129	8.15	1.4	7.02	15.37	0.886	0.25	-32.9	6.0
1130	8.17	1.6	7.01	15.35	0.883	0.23	-31.5	6.3
1131	8.13	1.8	7.01	15.38	0.882	0.22	-30.4	6.4
1132	8.14	2.0	7.01	15.37	0.881	0.20	-29.9	6.5
		8-12-11 TR						

Slightly cldy (Red)

Clear and Chamber

water clear

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-08 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 9.19' PID reading = 1.1 ppm

(B) Total Depth: 20.16'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic Pump

Purge Start Date/Time: 8-8 / 1116 **Serial No:** LVE 002920

Sample Date/Time: 8-8 / 1140 **Equipment:** YSI 650

Weather: Partly cldy, 80°, 5mph breeze-80° **Serial No:** 85281

Sampling Parameters: (circle) (VOCs) Monday Ke / mtls, U, + gen chem

Comments:

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO (mg/l)	ORP (mV)	Turb. (NTU)
1117	9.91	~0.1	6.91	14.64	1.996	2.30	-77.5	-1.8
1122	10.12	~0.3	6.81	14.25	1.975	1.38	-77.5	-1.5
1123	10.30	~0.6	6.80	14.24	1.950	0.73	-74.6	-0.6
1125	10.65	~1.0	6.80	14.24	1.947	0.63	-73.5	3.0
1128	10.55	~1.2	6.80	14.20	1.963	0.42	-73.7	-2.0
1130	10.50	~1.4	6.80	14.24	1.967	0.35	-76.3	-0.2
1133	10.49	~	6.80	14.37	1.971	0.24	-81.2	-0.8

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-09 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

PID reading = 0.2 ppm

(A) Depth to Water: 8.38'

(B) Total Depth: 19.13'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic Pump

Purge Start Date/Time: 8-8/1018 **Serial No:** LVE 002920

Sample Date/Time: 8-8/1040 **Equipment:** YSI 650

Weather: Cldy, 80°, calm, humid 80% **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, & gen chem.

Comments: Water is clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1018	8.77	.2	7.38	17.58	0.735	2.00	-146.3	28.4
1022	8.78	.5	7.06	15.68	0.692	0.36	-180	19.4
1026	8.80	1.0	7.06	15.69	0.681	0.32	-165.0 ~~-180~~	5.2
1027	8.79	1.1	7.06	15.66	0.680	0.27	-166.2	4.3
1028	8.79	1.2	7.07	15.66	0.679	0.27	-166.7	4.6
1029	8.80	1.3	7.07	15.63	0.678	0.22	-167.0	4.5

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW10 **Personnel:** KEVIN CRONIN

Casing Dia. (in): 2" TRENT RICHARDS

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: ~8.69' BTOC PID: 0.0 ppmv

(B) Total Depth: 20.18

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = **Equipment:** YSI 6820

Purge Start Date/Time: 8/12/11 / 1032 **Serial No:** 85289

Sample Date/Time: 8/12/11 / 1055 **Equipment:** GEOPUMP

Weather: SUNNY, 75° **Serial No:** LVE002920

Sampling Parameters: (circle) VOCs TAL METALS, TOTAL U, ISOTOPIC U (FILTERED & UNFILTERED)

Comments: Clear with high % of flocculated iron (red).

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1033	9.74	.2	7.18	14.01	0.867	2.40	-49.4	888.7
1037	10.02	.6	6.89	13.09	0.849	0.64	-40.6	1137.7
1042	9.87	1.2	6.93	13.48	0.834	1.11	-27.0	21.1
1044	10.00	1.4	6.88	13.33	0.816	0.51	-26.4	11.6
1046	10.05	1.6	6.87	13.35	0.818	0.51	-25.6	8.0
1047	10.00	1.7	6.87	13.55	0.819	0.51	-25.5	7.5
1048	10.00	1.8	6.86	13.58	0.819	0.49	-25.4	4.4
1049	9.98	1.9	6.87	13.59	0.820	0.49	-25.8	4.6
			8-12-11					
			JR					

Cleaned out chamber water slightly cloudy

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-11 **Personnel:** T. Richards

Casing Dia. (in): 2" K. CRONIN

Well Type: (circle) Flushmount (Stickup) PID reading 1.5 ppm

(A) Depth to Water: 9.58'

(B) Total Depth: 21.16'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.9 **Equipment:** Peristaltic Pump

Purge Start Date/Time: 8/8/0840 **Serial No:** LVE 002920

Sample Date/Time: 8/8/0910 **Equipment:** YSI 650

Weather: Cloudy, 75°, Calm, 90% Humidity **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, Ur, gen chem

Comments: Water is clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0842	10.30	0.2	6.79	16.15	1.203	1.98	25.2	9.9
0844	10.57	0.4	6.70	16.09	1.211	0.76	-39.8	758
0846	10.72	0.6	6.68	16.25	1.210	0.41	-85.8	1391
0848	10.78	0.8	6.64	16.42	1.207	0.34	-101.4	1430
0850	10.81	1.0	6.61	16.48	1.148	0.60	-109.5	1433.1
0852	10.81	1.2	6.61	16.44	1.052	0.52	-115.6	1451
0854	10.83	1.5	6.62	16.42	1.046	0.48	-115.7	2.8
0856	10.83	1.7	6.62	16.27	1.026	0.35	-120.2	2.7
0857	10.83	1.8	6.63	16.31	1.023	0.35	-121.8	2.9
0858	10.89	1.9	6.64	16.31	1.024	0.36	-122.7	9.3
0859	10.89	2.0	6.64	16.14	1.026	0.35	-123.8	TO.1

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-12 **Personnel:** Kevin Cronin

Casing Dia. (in): 2" PVC

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: ~ 6.24' BTOC

(B) Total Depth: _____

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = _____ **Equipment:** GeoPump

Purge Start Date/Time: 8/22/11 1215 **Serial No:** LVE

Sample Date/Time: 8/22/11 1230 **Equipment:** YSI 6280

Weather: SUNNY, BREEZY, 70° **Serial No:** 85281

Sampling Parameters: (circle) VOCs, ANIONS/GEN. CHEM, [TAL METALS, TOTAL & ISOTOPIC U – FILTERED & UNFILTERED]

Comments: CLEAR WATER

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	mg/l DO	ORP (mV)	Turb. (NTU)
1218	6.50'	0.2	7.24	14.77	0.439	1.63	-11.7	35.0
1220	6.49	0.3	7.18	14.88	0.433	0.90	-12.7	35.6
1222	6.52'	0.6	7.13	15.07	0.425	0.65	-11.0	12.2
1225	6.53'	1.0	7.12	15.08	0.427	0.42	-12.9	5.2
1227	6.53'	1.5	7.12	15.07	0.430	0.36	-16.2	-0.1
1228	6.53'	1.9	7.12	15.05	0.430	0.32	-17.8	0.6

Shaw
Shaw Environmental & Infrastructure, Inc.

NYSDEC SPLIT TAKEN

WELL SAMPLING FORM

Project Number: ~~MW-13~~ KC 140416

Well/Piez No.: MW-13D **Personnel:** KEVIN CRONIN

Casing Dia. (in): 2 JOHN MITCHELL (NYSDEC)

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: ~8.32' ~~BTOC~~ PID: 0.5 ppmv

(B) Total Depth: _____

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other _____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = _____ **Equipment:** _____

Purge Start Date/Time: 8/11/11 1143 **Serial No:** _____

Sample Date/Time: 8/11/11 1200 **Equipment:** _____

Weather: SUNNY, WINDY **Serial No:** _____

Sampling Parameters: (circle) VOCs, TAL METALS (FILTERED/UNFILTERED) TOTAL U + ISOTOPIC U (FILTERED/UNFILTERED), ANIONS, GEN CHEM.

Comments: _____

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1143	~8.37'	<0.1	7.74	17.40	1.263	1.75	52.2	7.1
1145	9.59'	0.2	7.32	~~17.42~~ KC 16.24	1.192	0.61	46.6	5.4
1147	9.58'	0.3	7.27	15.79	1.206	0.48	48.7	1.3
1149	9.58'	0.4	7.26	15.61	1.240	0.46	47.1	-2.7
1151	9.62'	0.6	7.26	15.57	1.271	0.33	45.2	-3.7
1153	9.64'	0.8	7.26	15.61	1.272	0.32	42.3	-3.8
1155	9.66	1.1	7.27	15.60	1.280	0.38	41.7	-4.3
1157	9.68'	1.3	7.26	15.58	1.288	0.36	40.2	-4.4

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-14 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 8.61 PID reading 0.3

(B) Total Depth: ~~22.57~~ 19.58

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** peristaltic

Purge Start Date/Time: 8-16 / 0902 **Serial No:** ~~YSI~~ LE 002920

Sample Date/Time: 8-16 / 0915 **Equipment:** YSI 650

Weather: Clear, 70°, 5mph **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~, mtls, U, + gen chem

Comments: Slightly cloudy water (gray)

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0904	9.30	.2	7.39	15.57	1.497	2.80	-57.9	52.1
0908	9.29	.8	7.26	15.69	1.487	1.12	-67.7	25.6
0910	9.28	1.0	7.24	15.77	1.491	0.70	-69.8	18.5
0912	9.28	1.2	7.21	15.74	1.511	0.58	-70.6	16.6
0913	9.28	1.3	7.21	15.79	15.16	0.46	-69.9	17.0
0914	9.28	1.4	7.20	15.73	1.518	0.48	-68.9	4.5
0915	9.28	1.5	7.21	15.72	1.519	0.47	-69.1	4.2
			8-16-11					
			TP					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-15 **Personnel:** K. Cronin
T. Richards

Casing Dia. (in): 2"

Well Type: (circle) Flushmount (Stickup)

PID reading 2.0 ppm

(A) Depth to Water: 12.11'

(B) Total Depth: ~~TMP~~ 23.08'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic

Purge Start Date/Time: 8-16/1018 **Serial No:** LVE 002820

Sample Date/Time: 8-16/1035 **Equipment:** YSI 650

Weather: Clear, 80°, ~~5~~ mph, 70% humidity **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~ mtls, U, + gen chem

Comments: Clear water to begin

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1019	12.35	.2	9.77	15.30	0.758	3.40	-93.2	38.6
1024	12.50	.8	10.01	15.04	0.703	1.16	-104.3	28.1
1026	12.50	1.0	9.90	15.09	0.722	1.55	-106.6	15.3
1028	12.51	1.2	9.82	15.12	0.738	1.64	-110.0	191.2
1029	12.55	1.3	9.78	15.06	0.744	1.58	-111.2	193.6
1030	12.55	1.5	9.74	15.08	0.748	1.51	-111.3	6.5
1031	12.56	1.6	9.74	15.06	0.749	1.50	-111.4	6.8
			8.15-1K					
			7K					

Shaw™
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-16 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount Stickup

(A) Depth to Water: 9.44'

(B) Total Depth: 20.08'

Purge Method: (circle) Bailer Grundfos Peristaltic Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic

Purge Start Date/Time: 8-19-11 / 1015 **Serial No:** LVE-002920

Sample Date/Time: 8-19-11 / 1030 **Equipment:** YSI-650

Weather: Clear, calm, 80°, 80% humid **Serial No:** 85821

Sampling Parameters: (circle) ~~VOCs~~ TR mtls, U, + gen chem plus a duplicate 900x

Comments: Water slightly cloudy

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1016	9.53	.2	7.46	16.52	1.410	2.20	-99.6	39.0
1020	9.52	.6	7.16	16.37	1.376	0.79	-94.6	18.1
1022	9.52	.8	7.14	16.51	1.367	0.67	-91.8	60.6
1024	9.53	1.0	7.14	16.65	1.368	0.54	-89.9	77.8
water clear 1026	9.52	1.2	7.14	16.70	1.366	0.47	-89.7	-5.5
1027	9.52	1.3	7.14	16.74	1.366	0.44	-89.2	6.0
1028	9.52	1.4	7.14	16.66	1.368	0.43	-89.0	6.2

8-19-11
TR

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-17 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

PID reading 0.0 ppm

(A) Depth to Water: 9.38'

(B) Total Depth: 20.09'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other _____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic

Purge Start Date/Time: 8-16 / 1240 **Serial No:** LVE 002920

Sample Date/Time: 8-16 / ~~1425~~ 1300 **Equipment:** YSI 650

Weather: Clear, 80°, 5mph, 70% humid. **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~ MNs, U, + gen chem Fe

Comments: Water very cldy, rust color, abundant flocculent

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1242	10.05	0.2	7.16	18.16	1.820	0.82	-41.4	833.7
1246	10.62	0.5	7.13	16.90	1.821	0.57	-28.2	150.7
1250	10.08	0.9	7.10	16.35	1.814	0.38	-17.0	161.0
1252	11.44	1.2	7.09	15.90	1.803	0.34	-9.6	43.7
1254	11.60	1.5	7.09	15.82	1.794	0.30	-5.1	33.3
1255	11.66	1.6	7.09	15.79	1.793	0.30	-3.0	73.6
1256	11.71	1.7	7.09	15.78	1.790	0.31	-2.9	73.2
			8-16-11					
			JR					

Water getting clear

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-18 **Personnel:** K. Cronin

T. Richards

Casing Dia. (in): 2"

Well Type: (circle) Flushmount (Stickup)

PID reading 0.0

(A) Depth to Water: 7.48'

(B) Total Depth: 18.06'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic

Purge Start Date/Time: 8-5-11 / 1232 **Serial No:** 002920

Sample Date/Time: 8-5-11 / 12 **Equipment:** YSI 6820

Weather: 85°, partly cloudy, calm, Humid **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~ TPH 8015 mtls, Hydrogen Chem

Comments: Water is clear.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1234	7.95	0.2	7.60	18.08	1.151	1.98	44.3	18.2
1236	8.05	0.4	7.18	16.85	1.140	0.87	37.1	49.7
1238	8.28	0.8	7.11	16.51	1.138	0.57	43.2	82.6
1239	8.30	1.0	7.09	16.49	1.132	0.50	43.7	51.6
1240	8.32	1.2	7.07	16.35	1.122	0.37	57.9	0.1
1241	8.32	1.4	7.07	16.36	1.120	0.33	62.1	0.2
1243	8.32	1.6	7.06	16.40	1.116	0.29	66.6	1.0
1244	8.40	1.8	7.05	16.36	1.117	0.26	66.9	0.9
1245	8.40	2.0	7.05	16.35	1.114	0.24	66.8	1.1

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-19 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 10.06' PID reading 0.0

(B) Total Depth: 19.63'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = ~~1.5~~ 1.53 **Equipment:** Peristaltic

Purge Start Date/Time: 8-4-11 / 1312 **Serial No:** LVE 002920

Sample Date/Time: 8-4-11 / 1330 **Equipment:** Peristaltic

Weather: 85°, Partly Cldy, 5 mph breeze 80% **Serial No:** LVE 002920

Sampling Parameters: (circle) ~~VOCs~~ Uranium, Gen Chem, TAL mtls. Lum

Comments:

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1312	11.05	0.25	9.45	19.02	0.709	1.50	-12.3	42.3
1314	12.4	0.5	9.44	18.17	0.695	1.00	+6.3	45.1
1316	12.8	0.7	9.35	18.15	0.689	1.00	13.0	45.0
1318	13.0	1.0	9.32	18.20	0.674	1.34	21.3	44.8
1319	13.7	1.1	9.30	18.39	0.668	1.33	26.9	50.3
1320	14.2	1.3	9.30	18.68	0.655	3.25	37.9	120.2
1321	14.5	1.4	9.24	18.65	0.665	3.35	40.1	418.5
1322	~~14.8~~	1.5	9.17	18.50	0.683	3.09	55.7	1383
1324	15.0	1.65	9.00	17.94	0.704	2.61	70.8	1390
1325	15.4	1.70	8.99	17.90	0.709	2.58	70.3	1397
1326	15.8	1.9	8.98	17.88	0.711	2.56	71.1	1398

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-20 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount Stickup

(A) Depth to Water: 9.66 PID reading 1.2 ppm

(B) Total Depth: 20.19

Purge Method: (circle) Bailer Grundfos Peristaltic Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.6 **Equipment:** Peristaltic

Purge Start Date/Time: 8-18 / 1148 **Serial No:** LVE-002920

Sample Date/Time: 8-18 / 1205 **Equipment:** YSI 650

Weather: Cldy, 85°, 5 mph, 80% humidity **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~ mtfs, U, oxygen chem

Comments: Clear water.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1149	10.28	.2	7.60	19.62	0.750	5.50	34.7	-3.1
1154	11.86	.7	7.21	19.12	0.838	5.90	60.6	36.9
1156	12.57	1.1	7.11	18.29	0.864	1.68	71.0	58.8
1158	12.88	1.4	7.09	18.25	0.874	1.49	75.4	126.9
1200	13.18	1.6	7.09	18.00	0.878	1.45	81.4	45.3
1201	13.28	1.7	7.09	17.79	0.874	1.44	83.8	57.1
1202	13.29	1.8	7.10	17.81	0.875	~~2.~~ 1.49	83.0	57.3

8-18-11
7h

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-21 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

PID reading 0.0 ppm

(A) Depth to Water: 13.47

(B) Total Depth: 24.20

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic

Purge Start Date/Time: ~~8-18-11~~ / 1232 **Serial No:** LVB 002

Sample Date/Time: 8-18-11 / 1245 **Equipment:** YSI 650

Weather: Cldy, light rain, 85°, calm, 90% humid **Serial No:** 85281

Sampling Parameters: (circle) VOCs

Comments: clear water

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1234	14.48	.2	7.50	16.10	1.336	2.50	-54.0	-2.9
1239	14.74	.8	7.16	14.77	1.358	0.76	-27.7	-6.9
1241	14.81	1.0	7.16	14.88	1.488	0.65	-29.8	-7.0
1243	14.92	1.2	7.16	14.98	1.491	0.63	-44.9	-7.0
1244	14.95	1.3	7.16	14.97	1.499	0.62	-45.4	-7.0
			8-18-11					
			7K					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-22 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 7.24' PID reading = 0.5

(B) Total Depth: 20.20'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.1 **Equipment:** PERISTALTIC Pump

Purge Start Date/Time: 0910 8/5/11 **Serial No:** 002920

Sample Date/Time: 0930 8/5/11 **Equipment:** YSI 6820

Weather: 70°, partly cldy, 5 mph breeze **Serial No:** 85281

Sampling Parameters: (circle) (VOCs) - mths, Uranium, Gen Chem

Comments: Water is initially very Brown MS/MSD #1 COLLECTED

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0912	7.75	0.2	8.00	17.20	0.705	3.01	-159.7	121.2
0914	7.80	0.4	7.46	15.58	0.705	0.91	-142.0	149
0916	7.87	0.6	7.33	15.79	0.702	0.46	-116.3	1423
0918	7.90	1.0	7.29	15.98	0.700	0.40	-96.0	1.8
0919	7.92	1.2	7.27	16.08	0.700	0.50	-87.4	2.8
0920	7.94	1.4	7.25	16.33	0.698	0.42	-76.4	9.7
0921	7.96	1.7	7.25	16.46	0.697	0.38	-73.6	8.9
0922	7.98	2.0	7.24	16.65	0.696	0.30	-74.8	8.7
0923	7.80	2.2	7.23	16.68	0.699	0.29	-73.8	8.6
0924	7.90	2.4	7.23	16.69	0.696	0.28	-74.7	8.4

water clear

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-23 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup) PID reading = 0.0

(A) Depth to Water: 6.01'

(B) Total Depth: 19.05

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.1 **Equipment:** Peristaltic

Purge Start Date/Time: 8-4-11 / **Serial No:** LVE 002920

Sample Date/Time: 8-4-11 / **Equipment:** Peristaltic

Weather: 75°, Partly Cloudy, Calm, Hum = 75% **Serial No:** LVE 002920

Sampling Parameters: (circle) (VOCs) Uranium, Gen chem, & TAL metals

Comments: _____

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1025	6.30	0.5	7.52	16.37	~~28.3~~ 0.798	1.30	-72.1	7.2
1028	6.30	1.0	7.13	16.60	0.785	0.44	-20.6	1.0
1030	6.31	1.5	7.12	16.64	0.773	0.40	-23.7	0.1
1032	6.31	2.0	7.11	16.64	0.760	0.34	-27.3	-1.8
1035	6.30	2.25	7.11	16.65	0.740	0.27	-28.2	-2.2
1037	6.30	2.50	7.11	16.65	0.738	0.26	-30.4	-2.1
1038	6.30	2.6	7.12	16.66	0.736	0.25	-30.3	-2.2
1039	6.30	2.75	7.12	16.66	0.734	0.25	-30.9	-2.3

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-24 **Personnel:** K. Cronin, T. Richards

Casing Dia. (in): 2"

Well Type: (circle) (Flushmount) Stickup

(A) Depth to Water: 3.99' PID reading 6.1

(B) Total Depth: 16.65'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.03 **Equipment:** MP Peristaltic

Purge Start Date/Time: 8/9/11 0855 **Serial No:** LVE 002920

Sample Date/Time: 8/4/11 0928 **Equipment:** Peristaltic

Weather: 70°, cloudy, calm, Humidity ~80% **Serial No:** LVE 002920

Sampling Parameters: (circle) (VOCs)

Comments: _____

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	~~Cond.~~ mS	DO	ORP (mV)	Turb. (NTU)
0855	3.99	0.5 .25 gal	7.9	15.27	1.072	1.00	-52.0	-0.7
0858	4.01	1.0	7.40	14.98	1.06	0.88	-53.0	0.6
0901	4.04	1.5	7.36	14.72	1.048	0.77	-53.7	2.3
0904	4.06	2.0	7.33	14.72	1.059	0.30	-54.0	0.3
0906	4.05	2.5	7.31	14.75	1.070	0.28	-54.3	0.2
0908	4.05	2.8	7.31	14.76	1.071	0.28	-54.4	0.3

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-25 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) (Flushmount) Stickup

PID reading 16.5 ppm

(A) Depth to Water: ~3.11'

(B) Total Depth: ~15.99'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2 **Equipment:** Peristaltic

Purge Start Date/Time: 8-12 / 0822 **Serial No:** LVE 002920

Sample Date/Time: 8-12 / 0845 **Equipment:** YSI 650

Weather: clear, calm, 65°, humidity 70% **Serial No:** 85287

Sampling Parameters: (circle) (VOCs), meth, U, gen chem

Comments: water - clear DUPLICATE #003 COLLECTED AS WELL

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0823	3.3	0.2	7.09	18.55	5.556	2.22	58.2	-3.1
0827	3.3	0.5	7.02	18.54	5.838	0.44	46.9	-1.6
0830	3.3	0.75	7.02	18.50	5.875	0.35	45.3	-2.6
0831	3.3	1	7.03	18.48	5.864	0.31	42.7	-4.7
0832	3.32	1.2	7.03	18.46	5.847	0.30	42.1	-4.8
0833	3.33	1.3	7.04	18.47	5.834	0.63	41.4	-4.7
0834	3.35	1.5	7.04	18.49	5.834	0.67	39.9	-4.8
0835	3.4	1.7	7.04	18.50	5.760	0.58	38.1	-2.3
0836	3.4	1.9	7.04	18.51	5.760	0.58	37.9	-2.4
		8.12.11						

TR

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-26 **Personnel:** Kevin Cronin

Casing Dia. (in): 2"

Well Type: (circle) ~~Flushmount~~ Stickup

(A) Depth to Water: ~3.25' BTOC PID: 0.2 ppmv

(B) Total Depth:

Purge Method: (circle) Bailer Grundfos Peristaltic Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = **Equipment:** YSI 6280

Purge Start Date/Time: 8/10/11 1257 **Serial No:** 85281

Sample Date/Time: 8/10/11 1320 **Equipment:** GEOPUMP

Weather: MSUNNY, BREEZY **Serial No:** LVE002920

Sampling Parameters: (circle) VOCs TAL METALS, TOTAL + ISO V (FILTERED + UNFILTERED), ANIONS, GEN CHEMISTRY

Comments: COLLECTED BY MISTAKE

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO (mg/l)	ORP (mV)	Turb. (NTU)	
1258	3.55'	<0.1	7.52	19.49	2.366	3.06	9.6	4.0	
1300	3.57'	~0.3	7.29	17.91	2.334	2.14	0.5	-3.9	
1302	3.58'	~0.5	7.27	17.51	2.317	1.55	0.1	-7.3	
1304	3.58'	~0.7	7.29	17.24	2.297	0.46	1.1	-5.5	
1306	3.59'	~1.1	7.33	16.83	2.278	0.37	1.8	175.5	? AIR BUBBLE
1308	3.59'	~1.3	7.34	16.93	2.269	0.36	2.9	-27.9	
1310	3.59'	~1.6	7.36	16.88	2.269	0.26	4.6	23.2	
1312	3.58'	~1.8	7.37	16.91	2.266	0.28	5.5	-28.4	
1314	3.58'	~2.1	7.37	16.86	2.262	0.27	7.9	-28.1	
1316	3.60'	~2.5	7.37	16.81	2.259	0.29	9.4	138.0	? 4
1318	3.55'		7.37	16.88	2.258	0.26	11.9	-29.5	

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW 600 S **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: Dry - no water

(B) Total Depth: 10.43

Purge Method: (circle) Bailer Grundfos Peristaltic Other NA

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 0 **Equipment:**

Purge Start Date/Time: NA **Serial No:** TR

Sample Date/Time: NA **Equipment:**

Weather: Cloudy, 65°, calm 70% humidity **Serial No:**

Sampling Parameters: (circle) ~~VOCs~~

Comments:

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0835	well Dry							
		8-22-11 TR						

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW601D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 10.70

(B) Total Depth: 22.15 1K

Purge Method: (circle) Bailer (Grundfos) (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.8 **Equipment:** Peristaltic

Purge Start Date/Time: 1059 **Serial No:** LVE 002920

Sample Date/Time: 11 **Equipment:** YSI 650

Weather: Partly cloudy, 80°, 5 mph 70% humidity **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~ mtls, U, ↑gen chem

Comments: water is clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1056	11.52	.2	7.60	18.70	1.601	3.67	-179.6	4.0
1100	11.80	.6	7.13	16.18	1.565	0.74	-167.4	154.1
1102	11.68	1.0	7.13	15.98	1.563	0.59	-158.4	82.6
1103	11.65	1.1	7.13	15.88	1.464	0.53	-153.2	79.2
1104	11.65	1.3	7.13	15.93	1.420	0.52	-151.0	101.3
1105	11.65	1.5	7.13	15.89	1.390	0.43	-146.1	93.8
1106	11.65	1.7	7.13	15.83	1.387	0.41	-145.9	89.9
1107	11.65	1.9	7.13	15.82	13.86	0.40	-144.9	87.8
			8-18-11					
			TR					

water became cloudy (grey)

Shaw
Shaw Environmental & Infrastructure, Inc.

NYSDEC
SPLIT TALON

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW 602D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 9.70' PID reading 0.0

(B) Total Depth: 22.08'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.9 **Equipment:** Peristaltic

Purge Start Date/Time: 8-11 / 0842 **Serial No:** LVE002920

Sample Date/Time: 8-11 / 0915 **Equipment:** YSI 650

Weather: Clear, 70°, 5 mph, humidity 75% **Serial No:** 85287

Sampling Parameters: (circle) ~~VOCs~~ OE mth, U, 8

Comments: Begining primarily grout color, stopped @ 0850 - clear lines & YSI @ grout

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
Grout so far 0833	9.86	0.2	7.65	16.05	1.835	3.24	86.3	105.9
0902	9.97	0.5	7.48	15.28	1.104	0.96	48.6	177.9
very cloudy 0904	9.96	0.7	7.34	15.07	1.093	0.58	35.4	118.8
0908	9.97	1.2	7.29	15.13	1.099	0.36	23.4	78.6
0909	9.97	1.3	7.29	15.22	1.104	0.33	23.2	75.4
0911	9.97	1.4	7.30	15.56	1.105	0.32	22.9	78.3
0912	9.97	1.5	7.31	15.16	1.111	0.33	22.0	58.7
0913	9.97	1.6	7.31	15.19	1.107	0.32	21.8	56.9
			8-11-11 JK					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-603 D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 7.26' PID reading 1.7

(B) Total Depth: 22.61'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID) Peristaltic

Well Volume (gal) = 2.4 **Equipment:** LVE 0029207

Purge Start Date/Time: 8/5 / 0811 **Serial No:**

Sample Date/Time: 8/5 / 0840 **Equipment:** YSI 6820

Weather: 25°, partly cldy, **Serial No:** 85281

Sampling Parameters: (circle) VOCs

Comments: Water - very Red (Iron ftc). @ 1 gallon clean chamber

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0812	7.32	0.2	7.55	15.10	1.149	3.88	-29.3	1371
0814	7.90	0.4	7.15	14.41	1.152	1.02	-27.8	1407
0817	7.95	0.7	6.98	13.46	1.137	0.39	-28.8	245
0820	7.88	1	7.14	13.55	1.102	2.18	-14.3	625
0823	8.1	1.4	6.99	Flushed Chamber				
0826	7.85	2.0	7.21	13.56	1.080	2.60	-13.5	53.2
0828 (clearing)	7.80	~~2.2~~ 2.5	7.06	13.47	1.083	1.25	-18.5	41.4
0830	7.95	2.7	7.02	13.18	1.080	0.60	-22.7	36.6
0831	7.97	3.0	7.02	13.16	1.078	0.53	-23.8	42.8
0832	~~7.97~~ 7.97	3.2	7.01	13.14	1.071	0.51	-24.1	10.7
0833	7.98	3.5	7.02	13.15	1.069	0.52	-24.4	9.3

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW 604D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) (Flushmount) Stickup

(A) Depth to Water: 7.30' PID reading 0.6 ppm

(B) Total Depth: 18.09'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic

Purge Start Date/Time: 8-10/0817 **Serial No:** LVE002920

Sample Date/Time: 8-10/0830 **Equipment:** VSE 650

Weather: Clear, 5-10mph, 70° **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), 4, mth, & gen chem.

Comments: Water Cloudy (gray), Cloudy to end. - never clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0815	7.6	.2	8.08	16.85	2.590	3.2	48.8	5.2
0818	7.75	.5	7.30	16.66	2.611	1.28	56.3	5.8
0820	7.72	.8	7.23	16.85	2.619	0.97	59.2	5.7
0822	7.65	1.0	7.23	16.99	2.564	0.77	59.6	7.2
0823	7.62	1.2	7.23	17.11	25.63	0.73	60.2	6.9
0824	7.62	1.4	7.23	17.09	2.493	0.63	61.9	22.9
0825	7.60	1.5	7.23	17.06	2.450	0.69	63.1	19.5
0826	7.60	1.6	7.23	17.05	2.451	0.70	63.7	18.8
0827	7.60	1.7	7.23	16.99	2.389 (2.4)	0.69	66.2	16.9
0828	7.60	1.8	7.23	16.89	2.379	0.68	66.8	16.2

8-10-11
JR

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW605D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) (Flushmount) Stickup

(A) Depth to Water: 3.37

(B) Total Depth: 17.40

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.2 **Equipment:** Peristaltic

Purge Start Date/Time: 8-10 / 0958 **Serial No:** LVE 002920

Sample Date/Time: 8-10 / **Equipment:** YSI 650

Weather: Partly Cldy, 10-20 mph wind, 75° **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, 4 gon clear

Comments: water slightly cloudy

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0958	3.60	0.2	7.83	16.40	0.925	2.01	38.3	5.1
1002	3.68	0.5	7.34	15.65	0.872	0.73	9.3	14.0
1004	3.68	0.7	7.30	15.83	0.867	0.41	3.1	55.0
1006	3.68	0.9	7.29	15.90	0.867	0.34	-1.6	94.4
1007	3.68	1.0	7.29	15.97	0.866	0.33	-2.9	99.9
1008	3.68	1.1	7.29	16.13	0.864	0.31	-3.0	106.9
1009	3.68	1.2	7.29	16.14	0.863	0.31	-3.1	106.2
1010	3.68	1.3	7.29	16.18	0.861	0.30	-3.4	106.7
			8-10-11					

water clear

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-606D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 8.13 PID reading 0.7

(B) Total Depth: ~~8/16 11~~ ~~19.58~~ 22.57

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.3 **Equipment:** Peristaltic

Purge Start Date/Time: 8-16 / 0827 **Serial No:** LVE 002920

Sample Date/Time: 8-16 / 0845 **Equipment:** YSI 650

Weather: Clear, 70°, 5 mph breeze 70% Humidity **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtb, U, oxygen chem.

Comments: Clear water.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0828	8.65	.2	7.27	14.05	1.584	3.56	-7.8	22.4
0832	8.79	.5	7.15	14.16	1.550	0.71	-37.5	22.5
0834	8.74	.8	7.16	14.62	1.549	0.60	-46.4	20.8
0836	8.76	1.1	7.18	14.69	1.554	0.46	-52.5	16.0
0838	8.80	1.4	7.22	14.68	1.555	0.39	-58.9	9.8
0840	8.80	1.6	7.25	14.79	1.539	0.61	-60.4	4.8
0842	8.82	1.8	7.24	14.81	1.536	0.60	-60.9	4.3
0843	8.82	~~1.9~~ 2.0	7.23	14.80	1.537	0.60	-61.1	4.3
0844	8.83	2.1	7.23	14.81	1.538	0.61	-61.0	4.0
			8-16-11					

7h

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-606DR **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

PID reading 0.1 ppm

(A) Depth to Water: 8.23'

(B) Total Depth: 22.47

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.2 **Equipment:** Peristaltic

Purge Start Date/Time: 8-16 / 0940 **Serial No:** LVE-002920

Sample Date/Time: 8-16 / 0955 **Equipment:** YSI 650

Weather: clear, 75°, 5 mph, 70% humidity **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~ mth, Al, & gen chem

Comments: Very clear water.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0941	8.89	0.2	7.51	15.16	1.566	2.50	-74.9	9.2
0945	9.04	0.6	7.10	13.43	1.769	0.71	-96.9	197.5
0948	9.06	0.8	7.06	13.25	2.099	0.39	-114.4	8.5
0950	9.07	1.2	7.07	13.25	2.131	0.33	-116.3	54.6
0951	9.07	1.4	7.07	13.24	2.134	0.32	-117.0	53.0
0952	9.09	1.6	7.07	13.23	2.140	0.33	-118.0	10.4
0953	9.09	1.8	7.07	13.21	2.141	0.31	-119.0	10.3
		8-16-11						
		TR						

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-607D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 8.86' PID reading 1.3 ppm

(B) Total Depth: 19.79'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.8 **Equipment:** peristaltic

Purge Start Date/Time: 8-19 / 0829 **Serial No:** LVE 002920

Sample Date/Time: 8-19 / 0845 **Equipment:** YSI 650

Weather: Clear, 70°, Calm, humidity 80% **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~ mtb, Cl, Nitrogen Chem

Comments: Water very cloudy (grey) at start. Water never cleared up.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0830	9.1	0.2	7.09	15.50	1.316	3.47	-124	200.1
0835	9.32	0.7	7.07	15.16	1.336	0.77	-149.7	150.2
0837	9.35	0.9	7.10	15.33	1.318	0.56	-151.1	219.0
0839	9.34	1.1	7.13	15.35	1.279	0.44	-149.8	575.5
0841	9.30	1.3	7.15	15.39	1.270	0.46	149.5	~~188~~ 570.1
0842	9.28	1.4	7.15	15.42	1.269	0.45	150.3	572.3

Very gray (grout in flask)

W

8-29-11 JK

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-701DD **Personnel:** K. Cronin, T. Richards

Casing Dia. (in): 2"

Well Type: (circle) Flushmount Stickup

(A) Depth to Water: 11.95

(B) Total Depth: 42.8

Purge Method: (circle) Bailer Grundfos Peristaltic Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.9 **Equipment:** Peristaltic

Purge Start Date/Time: 8-19-11 / 1329 **Serial No:** LVE-002920

Sample Date/Time: **Equipment:** YSI-650

Weather: Partly Cldy, 85°, Calm, 80% humidity **Serial No:** 85281

Sampling Parameters: (circle) VOCs, mtls, U, & gen chem

Comments: water Slightly Cldy

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1330	12.41	.3	7.35	18.40	2.004	3.31	-62.0	83.6
1332	12.44	.5	7.32	15.70	2.360	1.28	-54.9	40.7
1334	12.45	.7	7.19	14.38	2.619	1.03	-76.9	42.6
1335	12.45	.8	7.18	14.39	2.620	0.99	-74.8	37.1
1336	12.45	1.0	7.18	14.40	2.565	0.87	-89.6	42.3
1337	12.45	1.1	7.19	14.42	2.568	0.86	90.2	42.1
1338	12.45	1.2	7.20	14.44	2.564	0.85	89.8	41.8
			8-19-11					
			TK					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW702DP **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 9.44 PID reading 0.2 ppm

(B) Total Depth: 41.46

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 5.1 **Equipment:** Peristaltic

Purge Start Date/Time: 8-11 / 0958 **Serial No:** LVE002920

Sample Date/Time: 8-11 / 1015 **Equipment:** YSI 650

Weather: Partly Cldy, 5-10 mph, 75° **Serial No:** 85287

Sampling Parameters: (circle) (VOCs), mtls, U, & gen chem

Comments: Water is clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0959	10.11	.2	7.91	25.30	0.007	5.80	210.7	90.8
1004	12.02	.7	7.14	14.78	4.153	4.83	158.2	2.8
1005	12.75	.8	7.11	14.78	4.188	3.84	149.9	1.9
1006	13.15	.9	7.11	14.80	4.184	3.78	148.5	1.1
1007	13.48	1.0	7.10	14.87	4.174	3.37	146.3	-.4
1008	13.88	1.2	7.10	14.78	4.090	3.14	145.9	-1.3
1009	14.23	1.3	7.11	14.79	4.097	3.17	141.9	-1.2
			8-11-11					
			7R					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-703 DD **Personnel:** K. Cronin

Casing Dia. (in): _____ T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 25.40' PID reading: 0.9 ppm

(B) Total Depth: 41.78' 7R 8/19/11

Purge Method: (circle) Bailer (Grundfos) ~~Peristaltic~~ Other _____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.6 **Equipment:** Grundfos

Purge Start Date/Time: 8-19 / 0900 **Serial No:** 11511

Sample Date/Time: 8-19 / 0915 **Equipment:** YSI 650

Weather: clear, calm, 70°, 80% humidity **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, & gen chem

Comments: water very cloudy (grey)

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0901	25.67	.2	6.93	12.03	2.655	2.30	-62.7	1828.4
0906	25.55	.7	6.77	12.56	2.657	0.50	-69.8	1602.5
0910	25.55	1.1	6.77	12.88	2.644	0.36	-65.8	200.2
0911	25.55	1.2	6.77	12.89	2.643	0.34	-66.1	180.1
0912	1/ 25.55	1.3	6.77	13.05	2.640	0.33	-67.2	148.2
0913	1/ 25.55	1.4	6.77	13.11	2.634	0.33	-70.1	157.6
0914	1/ 25.55	1.5	6.77	13.12	2.637	0.33	-70.8	158.1

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-704DD **Personnel:** K. Conin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) (Flushmount) Stickup

(A) Depth to Water: 3.30'

(B) Total Depth: 38.79'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 5.7 **Equipment:** Peristaltic Pump

Purge Start Date/Time: 8-10 / 1051 **Serial No:** LVE002920

Sample Date/Time: 8-10 / **Equipment:** YSI 650

Weather: Partly cldy, 10-20 mph wind 75° **Serial No:** 85287

Sampling Parameters: (circle) (VOCs), mths, U, & gen chem

Comments: Water is Clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1052	4.2	.2	8.71	17.07	3,882	3.32	62.4	24.1
1058	4.45	.5	8.38	13.78	4,444	0.59	69.6	69.9
1059	4.68	.8	8.21	13.38	3,160	0.32	68.3	109.5
1101	4.68	1.0	7.88	13.36	2.739	0.27	70.2	178.9
1103	4.70	1.2	7.89	13.32	2,640	0.23	69.9	30.7
1105	4.72	1.5	7.87	13.22	2.599	0.21	71.0	73.1
1106	4.74	1.6	7.85	13.19	2.562	0.20	71.4	100.4
1107	4.65	1.7	7.82	13.20	2.558	0.19	72.1	-4.4
1108	4.68	1.8	7.80	13.19	2.552	0.18	72.8	-4.1
			8-10-11 JK					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-705D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup) PID reading = 0.4

(A) Depth to Water: 7.63

(B) Total Depth: 21.43

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.2 **Equipment:** Peristaltic

Purge Start Date/Time: 8-9/0812 **Serial No:** LVE0029920

Sample Date/Time: 8-9/0835 **Equipment:** YSI 650

Weather: 70°, light rain, calm **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, & gen chem.

Comments: Clear water - Raining

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0814	10.31	.4	7.28	13.05	2.663	2.18	-207.3	2.7
0816	10.55	.6	7.26	13.26	2.657	1.30	-215.9	1.5
0818	10.87	.8	7.27	13.72	2.639	0.84	-222.6	3.0
0820	11.78	1	7.27	14.43	2.675	0.62	-223.8	5.5
8822	12.37	1.3	7.30	14.29	2.671	0.39	-229.8	5.6
8823	12.73	1.4	7.31	14.30	2.669	0.36	-230.2	5.4
8824	12.89	1.5	7.32	14.42	2.662	0.32	-233.3	5.8
8825	12.90	1.6	7.35	14.48	2.660	0.77	-233.4	3.7
8826	12.80	1.7	7.36	14.49	2.660	0.74	-234.1	3.9
8827	13.15	1.9	7.37	14.45	2.659	0.71	-237.5	3.6
8828	13.330	2.0	7.38	14.48	2.657	0.72	-234.6	3.4

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-705DD **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Rickard

Well Type: (circle) Flushmount (Stickup)

PID reading 0.5 ppm

(A) Depth to Water: 7.60

(B) Total Depth: 41.54

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 5.4 **Equipment:** Peristaltic

Purge Start Date/Time: 8-9/0859 **Serial No:** LVE 002920

Sample Date/Time: 8-9/0930 **Equipment:** YSI 650

Weather: RAIN **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, gen chem

Comments: Clear water

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0900	9.56	.7	9.58	12.16	8.150	3.90	-161.1	56.3
0904	15.32	.7	8.85	11.97	6.728	3.82	-139.0	93.9
0906	13.94	1	8.92	12.70	5.996	4.31	-126.2	173.3
0908	14.99	1.2	9.03	13.20	6.926	4.21	-120.1	145.2.0
0910	15.15	1.4	9.16	13.72	5.942	4.46	-114.6	39.8
0912	15.60	1.6	8.29	14.12	6.075	3.92	-112.2	152.6
0914	15.97	1.9	9.27	14.19	6.208	3.67	-112.7	138.6
0916	16.43	2.1	9.30	14.16	6.203	3.69	113.1	98.1
0918	16.64	2.3	9.36	14.19	6.242	3.64	113.9	112.1

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-706DD **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 10.26' PID reading 0.6 ppm

(B) Total Depth: 42.30'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 5.1 **Equipment:** Peristaltic

Purge Start Date/Time: 8-15 / 0812 **Serial No:** LVE 002920

Sample Date/Time: 8-15 / 0840 **Equipment:** YSI 650

Weather: Cloudy, 68°; 5 mph, humidity 60% **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, gen chem.

Comments: Very cloudy water (grey)

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0813	11.9	.2	7.32	16.01	3.860	3.60	130.2	1568
0816	12.62	.5	7.42	14.52	7.605	2.13	3.8	1559
0819	13.00	.8	7.43	14.73	7.341	0.70	-41.5	1090
0822	13.23	1.2	7.25	14.75	6.401	0.69	-39.6	445.7
0825	13.39	1.5	7.16	14.84	5.587	0.58	-32.8	178.1
0828	13.49	1.8	7.11	14.80	5.054	0.51	-25.3	110.1
0831	13.53	2.1	7.16	14.89	4.349	0.54	-18.7	89.9
0833	13.65	2.4	7.15	14.90	3,710	0.51	-14.8	124.8
0837	13.59	2.7	7.15	14.89	3.542	0.50	-12.1	44.1
0838	13.59	2.8	7.16	14.90	3,507	0.49	-12.0	44.6

8:11 very cldy H2O

8-15-11

12

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-707 DD

Personnel: K. Cronin
T. Richards

Casing Dia. (in): 2"

Well Type: (circle) Flushmount Stickup

(A) Depth to Water: 33.62

PID reading 7.6 ppm

(B) Total Depth: 39.58

Purge Method: (circle) Bailer Grundfos Peristaltic Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = .9

Equipment: YSI 650

Purge Start Date/Time: 8-17 / 1125

Serial No: 85281

Sample Date/Time: 8-1

Equipment:

Weather: Partly Cldy, 80°, 5 mph 50% humid

Serial No:

Sampling Parameters: (circle) VOCs, mtls, U, & gen chem

Comments: Very cloudy (gray) & strong sulfur smell.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1127	35'	.2	8.45	13.85	18.46	4.95	135.8	1616
1128	37'	.4	8.67	13.91	18.49	5.25	124.9	1677
1129	38'	.6	8.69	13.58	18.56	5.74	125.4	1676
1130	39'	.7	8.72	13.61	18.54	6.27	119.9	1677
1132	39.4'	.9	8.72	13.87	18.51	6.28	117.1	1682
	Bailed		Dry					

Shaw
Shaw Environmental & Infrastructure, Inc.

NYSDEC SPLIT + 3RD DUPLICATE TAKEN

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW 708D1 **Personnel:** KEVIN CRONIN

Casing Dia. (in): 2" JOHN MITCHELL (NYSDEC)

Well Type: (circle) (Flushmount) Stickup

(A) Depth to Water: -8.24' BTOC PID: 2.7 ppmv

(B) Total Depth: _____

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other _____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = _____ **Equipment:** GEOPUMP

Purge Start Date/Time: 8/11/11 1339 **Serial No:** LVE 002920

Sample Date/Time: 8/11/11 1410 **Equipment:** YSI 9260

Weather: P. SUNNY, BREEZY, 75° **Serial No:** _____

Sampling Parameters: (circle) (VOCs) TAL METALS + TOTAL + ISOTOPIC ✓ (FILTERED / UNFILTERED)

Comments: NYSDEC SPLIT + DUPLICATE COLLECTED ANIONS GONE VERY TURBID, GRAY @ START CLEARING UP

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1339	8.68'	<0.1	8.93	18.27	2.306	5.81	18.3	1592
1341	8.88'	0.3	8.11	14.41	3.256	3.20	10.1	1549
1343	8.92'	0.4	8.02	14.37	3.232	2.30	4.4	1547
1345	8.96'	0.7	7.91	14.14	3.153	1.14	1.2	1061
1347	8.98'	1.0	7.70	14.00	2.852	0.75	-1.6	626.9
1350	9.02'	1.2	7.54	13.87	2.229	0.52	0.7	265.8
1352	9.01'	1.5	7.49	13.88	2.101	0.42	1.2	173.8
1354	9.03'	1.7	7.46	13.62	1.974	0.35	0.0	210.7
1356	9.04'	1.9	7.44	13.44	1.929	0.32	-0.4	571.3
1359	9.05'	2.2	7.44	13.34	1.895	0.31	-0.2	122.5
1401	9.05'	2.5	7.43	13.32	1.881	0.26	-1.1	141.1
1403	9.05'	2.7	7.43	13.44	1.873	0.24	-1.7	128.8
1405	9.06'	3.0	7.43	13.51	1.860	0.23	-2.6	19.4

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-709 DD **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) (Flushmount) Stickup

(A) Depth to Water: 8.07' PID reading 1.5 ppm

(B) Total Depth: 40.25'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 5.1 **Equipment:** Peristaltic

Purge Start Date/Time: 8-10 / 0908 **Serial No:** LVE 002920

Sample Date/Time: 8-10 / 0930 **Equipment:** YSI 650

Weather: Clear, calm, 75° **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, & gen chem

Comments: Cloudy (gray)

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0909	~~8.20~~ 8.75 R	.2	7.24	16.20	3.889	5.40	75.2	156
0912	8.85	.4	7.45	14.20	4.401	2.98	23.8	88.9
0914	~~8~~ 9.10 R	.6	7.37	14.10	3.940	2.14	16.0	350.5
0916	9.15	.8	7.28	13.36	3.101	1.84	21.9	139.9
0918	9.15	1.0	7.24	13.08	2.820	1.14	34.7	25.9
0920	9.15	1.2	7.24	12.96	2,742	0.70	40.8	12.0
0922	9.15	1.4	7.33	13.07	2,145	0.43	46.9	103.2
0923	9.15	1.5	7.34	13.03	2,072	0.40	48.6	71.1
0924	9.15	1.6	7.35	13.01	2,070	0.39	47.5	71.3
0925	9.15	1.7	7.35	13.00	2,071	0.38	47.8	71.7

Clear water

8-10-11
7/2

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-710 D **Personnel:** K. Cronin / T. Richard

Casing Dia. (in): 2"

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 12.20 PID reading 0.3

(B) Total Depth: 21.37

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.5 **Equipment:** Peristaltic

Purge Start Date/Time: 8-15 / 0938 **Serial No:** LVE 002920

Sample Date/Time: 8-15 / ~~0950~~ 0955 **Equipment:** YSI 650

Weather: Cldy, 70°, 5mph, Humid: 60% **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, 8 ion chem.

Comments: Clear water

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0939	12.39	.2	7.65	14.53	1.880	5.37	48.1	19.8
0941	12.44	.5	7.28	13.42	1,868	3.53	-29.1	69.9
0945	12.44	.8	7.22	12.96	1,843	2.76	18.1	80.8
0948	12.44	1.0	7.21	12.89	1.827	0.68	11.4	-2.5
0952	12.44	1.2	7.21	12.87	1,827	0.68	10.9	-2.9
0953	12.44	1.3	7.21	12.87	1,828	0.66	10.7	-2.1
		8.15.11						
			TR					

slightly cldy H2O

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-710 DD **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: ~~23.11~~ 20.78 PID reading ~~0.7~~ 0.9

(B) Total Depth: 41.57

Purge Method: (circle) Bailer (Grundfos) ~~(Peristaltic)~~ Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 3.4 **Equipment:** ~~Peristaltic Pump~~ (PINE)

Purge Start Date/Time: 8-18 / 0805 **Serial No:** ~~LVE 002920~~ ~~05209~~

Sample Date/Time: 8-18 / 0825 **Equipment:** YSI 650

Weather: cldy, 20°, 5 mph, Humidity 60% **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mrb, U, 8 gen chem

Comments: Water is clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0805	21.37	.2	7.56	13.20	2.202	4.51	137.5	7.6
0810	21.22	.6	7.18	12.44	2.239	2.92	75.6	29.8
0812	21.22	.8	7.16	12.45	2.254	2.81	64.3	40.0
0815	21.22	1.1	7.14	12.46	2.282	2.19	57.5	17.4
0816	21.23	1.2	7.14	12.49	2.308	2.07	55.0	12.1
0817	21.23	1.3	7.14	12.48	2.306	2.03	54.6	7.9
0818	21.23	1.5	7.14	12.50	2.309	1.93	52.3	6.5
0819	21.	1.6	7.14	12.52	2.303	1.90	52.6	6.0

→ water become cldy (gray)

8-18-11 JR

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-711 D **Personnel:** KEVIN CRONIN

Casing Dia. (in): 2"

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 12.54' PID Reading 0.2 ppm

(B) Total Depth: 21.95'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.5 **Equipment:** Peristaltic

Purge Start Date/Time: 8-9/14 **Serial No:** LVE 002920

Sample Date/Time: 8-9/ **Equipment:** YSI 650

Weather: RAIN, 75° **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), MTL, U, & gen chem

Comments:

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1425	12.50	.2	7.72	18.29	2.092	3.46	-4.2	9.5
1427	12.58	.4	7.62	14.54	2.103	1.86	-12.9	80
1429	12.70	.7	7.55	14.52	~~2.0~~ 1.990	0.82	-13.9	5.9
1431	12.80	1.0	7.43	15.07	1.919	0.90	-8.4	4.6
1433	12.91	1.2	7.36	15.24	1.884	1.13	-4.3	4.1
1435	13.08	1.4	7.28	15.28	1.816	4.38	5.6	2.5
1437	13.78	1.7	7.26	15.79	1.720	1.08	8.2	1.4
1438	14.05	1.9	7.28	15.81	1.716	1.07	8.8	1.5

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-711DD **Personnel:** K. Cronin

T. Richards

Casing Dia. (in): 2"

Well Type: (circle) Flushmount (Stickup)

PID Reading NR 8-15-11 / 0.2 ppm / 13.8

(A) Depth to Water: 11.41'

(B) Total Depth: 42.21

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 4.9 **Equipment:** Peristaltic

Purge Start Date/Time: NR 8-15 / ~~8-14~~ 13 1138 **Serial No:** LVE 002920

Sample Date/Time: NR 8-15 / 1200 **Equipment:** YSI 650

Weather: RAIN, 75° **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), MTL, U, & Gen Chem

Comments: Water is clear "DRIES" OUT (CAN'T LIFT WATER W/ GEOPUMP) FINISH COLLECTING GEN CHEM DUPLICATE @ 1145 W/ DISPOSABLE BAILER; COLLECT REMAINING UNFILTERED SAMPLES (TAL METALS, TOTAL U + ISOTOPIC U) AND FILTERED TAL METALS, TOTAL U + ISOTOPIC U)

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1141	12.50	0.2	8.8	17.75	6104	5.01	66.7	22.8
1145	15.18	0.5	9.08	14.32	6.255	2.60	74.8	26.3
1147	16.1	0.8	9.07	14.71	6.202	2.33	77.8	26.9
1148	16.75	1.0	9.06	14.73	6.159	2.28	79.6	24.4
1149	16.90	1.2	9.04	14.72	6.158	2.26	80.3	24.7
1150	17.52	1.4	9.02	14.71	6.157	2.28	81.2	25.2
			8-15-11					
			TR					

VOCs AND ANIONS/ GEN. CHEM COLLECTED 8/15/11 VIA GEOPUMP PRIOR TO BEING UNABLE TO LIFT WATER W/ GEOPUMP

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-712D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 22.02 (DRY)

(B) Total Depth: 22.02

Purge Method: (circle) Bailer Grundfos Peristaltic Other None - Dry Hole

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = NA **Equipment:**

Purge Start Date/Time: NA **Serial No:** 8-15-4 TR

Sample Date/Time: NA **Equipment:**

Weather: Cldy, 65°, 5 mph **Serial No:**

Sampling Parameters: (circle) ~~VOCs~~

Comments: Dry well.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
				8-15-4				
					TR			

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-712 DD **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 30.26' PID reading 0.4 ppm

(B) Total Depth: 41.76'

Purge Method: (circle) Bailer (Grundfos) Peristaltic Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.8 **Equipment:** YSI 650

Purge Start Date/Time: 8-18 / 0917 **Serial No:** 85281

Sample Date/Time: 8-18 / 0935 **Equipment:** Grundfos (Pink Eq)

Weather: Clear, 70°, 5mph, 60% Hum **Serial No:** 11511

Sampling Parameters: (circle) (VOCs), mtb, U, + gen chem

Comments: Water very cloudy (gray)

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0919	31.4	.2	~~13.32~~ 7.19	13.32	2.612	6.53	23.9	329.6
0923	31.05 ~~31.57~~	.6	7.16	12.40	2.520	1.72	63.3	305.9
0925	30.28	.8	7.15	12.82	2.518	1.60	66.0	330.1
0928	30.32	1.1	7.12	~~14.48~~	2.520	1.23	65.0	252.8
0930	30.32	1.3	7.12	14.02	~~2.584~~	1.20	64.0	104.4
0931	30.33	1.4	7.11	13.93	2.540	1.12	64.8	83.0
0932	30.32	1.5	7.11	13.99	2.539	1.11	65.1	82.1
			8-18-11					
			7h					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-713 D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 12.23' PID reading = 2.4

(B) Total Depth: 21.99'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.56 **Equipment:** Peristaltic

Purge Start Date/Time: 8/4/11 **Serial No:** LVE 002920

Sample Date/Time: 8-4-11 **Equipment:** Peristaltic

Weather: 80°, Partly Cldy, Calm, 80% hum **Serial No:** LVE 002920

Sampling Parameters: (circle) (VOCs), Uranium, Gen Chem, & TAL mtls

Comments:

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1135	12.71	0.2	7.37	14.88	~~1.595~~ 1.548	3.02	-149.2	1356.9
1137	12.70	0.4	7.27	13.52	1.554	2.04	-158.7	14.2
1140	12.70	0.75	7.24	13.58	1.549	0.94	-164.9	5.1
1142	12.71	1.0	7.23	13.42	1.546	0.78	-168.9	16.9
1144	12.70	1.2	7.23	13.50	1.536	0.72	-172.9	16.8
1146	12.71	1.5	7.24	13.47	1.534	0.71	-175.6	16.7
1147	12.70	1.7	7.24	13.46	1.533	0.72	-175.7	16.9
1149	12.71	1.9	7.24	13.47	1.534	0.72	-175.6	16.8

APPENDIX G

Analytical Data
(Provided on Same CD as Appendix A)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guteryl Steel

Lot #: F1H020470

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 25, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H020470

This report contains the analytical results for the four samples received under chain of custody by TestAmerica in St. Louis on August 2, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

There were no nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H020470

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Isotopic Thorium by Alpha Spectroscopy	EML A-01-R MOD	
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL"
HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

SAMPLE SUMMARY

F1H020470

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLCN1	001	CITY OF LOCKPORT SEWER LOCATION #1 US-0001	07/27/11	13:55
MLCN2	002	CITY OF LOCKPORT SEWER LOCATION #1 UW-0001	07/27/11	13:45
MLCN3	003	CITY OF LOCKPORT SEWER LOCATION #2 US-0002	07/27/11	14:35
MLCN4	004	CITY OF LOCKPORT SEWER LOCATION #2 UW-0002	07/27/11	14:25

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: CITY OF LOCKPORT SEWER LOCATION #1 US-0001

Radiochemistry

Lab Sample ID: F1H020470-001
Work Order: MLCN1
Matrix: SOLID

Date Collected: 07/27/11 1355
Date Received: 08/02/11 0940

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1223198		Yld % 82
Thorium 228	0.270		0.073	0.100	0.031	08/11/11	08/17/11
Thorium 230	0.448		0.096	0.100	0.020	08/11/11	08/17/11
Thorium 232	0.224		0.065	0.100	0.021	08/11/11	08/17/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1223199		Yld % 79
Uranium 234	3.55		0.39	0.10	0.03	08/11/11	08/17/11
Uranium 235/236	0.201		0.067	0.100	0.014	08/11/11	08/17/11
Uranium 238	3.72		0.40	0.10	0.01	08/11/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: CITY OF LOCKPORT SEWER LOCATION #1 US-0001 DUP

Radiochemistry

Lab Sample ID: F1H020470-001X
Work Order: MLCN1
Matrix: SOLID

Date Collected: 07/27/11 1355
Date Received: 08/02/11 0940

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1223198		Yld % 80
Thorium 228	0.220		0.066	0.100	0.033	08/11/11	08/17/11
Thorium 230	0.271		0.073	0.100	0.034	08/11/11	08/17/11
Thorium 232	0.220		0.065	0.100	0.031	08/11/11	08/17/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1223199		Yld % 79
Uranium 234	3.15		0.35	0.10	0.02	08/11/11	08/17/11
Uranium 235/236	0.195		0.067	0.100	0.025	08/11/11	08/17/11
Uranium 238	3.33		0.37	0.10	0.02	08/11/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: CITY OF LOCKPORT SEWER LOCATION #1 UW-0001

Radiochemistry

Lab Sample ID: F1H020470-002
Work Order: MLCN2
Matrix: WATER

Date Collected: 07/27/11 1345
Date Received: 08/02/11 0940

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1227018		Yld % 83
Thorium 228	-0.002	U	0.020	0.100	0.058	08/15/11	08/16/11
Thorium 230	0.026		0.030	0.100	0.023	08/15/11	08/16/11
Thorium 232	0.009	U	0.017	0.100	0.023	08/15/11	08/16/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1227019		Yld % 80
Uranium 234	10.9		1.1	0.1	0.04	08/15/11	08/16/11
Uranium 235/236	0.61		0.17	0.10	0.05	08/15/11	08/16/11
Uranium 238	10.4		1.1	0.1	0.04	08/15/11	08/16/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: CITY OF LOCKPORT SEWER LOCATION #1 UW-0001 DUP

Radiochemistry

Lab Sample ID: F1H020470-002X
Work Order: MLCN2
Matrix: WATER

Date Collected: 07/27/11 1345
Date Received: 08/02/11 0940

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1227018**	**Yld % 76**
Thorium 228	0.007	U	0.028	0.100	0.062	08/15/11	08/16/11
Thorium 230	0.018	U	0.026	0.100	0.025	08/15/11	08/16/11
Thorium 232	0.009	U	0.018	0.100	0.025	08/15/11	08/16/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1227019**	**Yld % 78**
Uranium 234	10.9		1.1	0.1	0.02	08/15/11	08/16/11
Uranium 235/236	0.49		0.15	0.10	0.03	08/15/11	08/16/11
Uranium 238	11.2		1.1	0.1	0.02	08/15/11	08/16/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: CITY OF LOCKPORT SEWER LOCATION #2 US-0002

Radiochemistry

Lab Sample ID: F1H020470-003
Work Order: MLCN3
Matrix: SOLID

Date Collected: 07/27/11 1435
Date Received: 08/02/11 0940

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1223198		Yld % 51
Thorium 228	0.47		0.12	0.10	0.04	08/11/11	08/16/11
Thorium 230	0.325		0.0998	0.100	0.041	08/11/11	08/16/11
Thorium 232	0.44		0.12	0.10	0.02	08/11/11	08/16/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1223199		Yld % 84
Uranium 234	4.37		0.45	0.10	0.01	08/11/11	08/17/11
Uranium 235/236	0.219		0.069	0.100	0.013	08/11/11	08/17/11
Uranium 238	4.77		0.49	0.10	0.02	08/11/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: CITY OF LOCKPORT SEWER LOCATION #2 UW-0002

Radiochemistry

Lab Sample ID: F1H020470-004
Work Order: MLCN4
Matrix: WATER

Date Collected: 07/27/11 1425
Date Received: 08/02/11 0940

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1227018		Yld % 32
Thorium 228	0.053	U	0.075	0.100	0.11	08/15/11	08/16/11
Thorium 230	-0.005	U	0.011	0.100	0.096	08/15/11	08/16/11
Thorium 232	-0.005	U	0.011	0.100	0.096	08/15/11	08/16/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1227019		Yld % 62
Uranium 234	0.43		0.14	0.10	0.03	08/15/11	08/16/11
Uranium 235/236	0.038		0.044	0.100	0.034	08/15/11	08/16/11
Uranium 238	0.44		0.14	0.10	0.03	08/15/11	08/16/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H020470
Matrix: SOLID

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g	Batch # 1223198		Yld % 94		F1H110000-198B
Thorium 228	-0.0009	U	0.0018	0.100	0.017		08/11/11	08/16/11
Thorium 230	**0.022**		**0.018**	0.100	**0.01**		**08/11/11**	**08/16/11**
Thorium 232	0.007	U	0.010	0.100	0.01		08/11/11	08/16/11
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/g	Batch # 1223199		Yld % 82		F1H110000-199B
Uranium 234	0.011	U	0.015	0.100	0.022		08/11/11	08/16/11
Uranium 235/236	0.005	U	0.011	0.100	0.014		08/11/11	08/16/11
Uranium 238	0.0042	U	0.0084	0.100	0.011		08/11/11	08/16/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H020470
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID / Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1227018		Y1d % 91	F1H150000-018B
Thorium 228	0.0	U	0.0075	0.100	0.020	08/15/11	08/16/11
Thorium 230	0.022		0.026	0.100	0.020	08/15/11	08/16/11
Thorium 232	0.0	U	0.0074	0.100	0.020	08/15/11	08/16/11
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1227019		Y1d % 86	F1H150000-019B
Uranium 234	0.013	U	0.022	0.100	0.034	08/15/11	08/16/11
Uranium 235/236	-0.0024	U	0.0047	0.100	0.043	08/15/11	08/16/11
Uranium 238	0.0	U	0.0076	0.100	0.020	08/15/11	08/16/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H020470
Matrix: SOLID

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso THORIUM (LONG CT) DOE A-01-R MOD		pCi/g		A-01-R MOD			F1H110000-198C
Thorium 230	24.5	23.8	2.3	0.04	90	97	(77 - 122)
	Batch #:	1223198		Analysis Date:	08/16/11		
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/g		A-01-R MOD			F1H110000-199C
Uranium 234	1.63	1.63	0.21	0.02	85	100	(74 - 139)
Uranium 238	1.70	1.62	0.21	0.02	85	95	(75 - 140)
	Batch #:	1223199		Analysis Date:	08/16/11		

NOTE(S)

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H020470
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso THORIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H150000-018C**
Thorium 230	2.37	2.30	0.33	0.04	87	97	(77 - 118)
	Batch #:	1227018		Analysis Date:	08/16/11		
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H150000-019C**
Uranium 234	3.26	3.03	0.40	0.03	94	93	(76 - 136)
Uranium 238	3.39	3.12	0.40	0.04	94	92	(76 - 134)
	Batch #:	1227019		Analysis Date:	08/16/11		

NOTE(S):

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1H020470
Matrix: SOLID

Date Sampled: 07/27/11
Date Received: 08/02/11

Parameter	SAMPLE Result	Total Uncert. (2σ +/-)	% Yld	DUPLICATE Result	Total Uncert. (2 σ +/-)	% Yld	QC Sample ID Precision	
Iso THORIUM (LONG CT) DOE A-01-R MOD		pCi/g		A-01-R MOD			F1H020470-001	
Thorium 228	0.270	0.073	82	0.220	0.066	80	20	%RPD
Thorium 230	0.448	0.096	82	0.271	0.073	80	49	%RPD
Thorium 232	0.224	0.065	82	0.220	0.065	80	1	%RPD
	Batch #:	1223198	(Sample)	1223198	(Duplicate)			
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/g		A-01-R MOD			F1H020470-001	
Uranium 234	3.55	0.39	79	3.15	0.35	79	12	%RPD
Uranium 235/236	0.201	0.067	79	0.195	0.067	79	3	%RPD
Uranium 238	3.72	0.40	79	3.33	0.37	79	11	%RPD
	Batch #:	1223199	(Sample)	1223199	(Duplicate)			

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

U Result is less than the sample detection limit.

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1H020470
Matrix: WATER

Date Sampled: 07/27/11
Date Received: 08/02/11

Parameter	SAMPLE Result		Total Uncert. (2σ +/-)	% Yld	DUPLICATE Result		Total Uncert. (2 σ +/-)	% Yld	QC Sample ID Precision	
Iso THORIUM (LONG CT) DOE A-01-R MOD			**pCi/L**		**A-01-R MOD**				**F1H020470-002**	
Thorium 228	-0.002	U	0.020	83	0.007	U	0.028	76	382	%RPD
Thorium 230	0.026		0.030	83	0.018	U	0.026	76	37	%RPD
Thorium 232	0.009	U	0.017	83	0.009	U	0.018	76	6	%RPD
	Batch #:		1227018 (Sample)		1227018 (Duplicate)					
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**		**A-01-R MOD**				**F1H020470-002**	
Uranium 234	10.9		1.1	80	10.9		1.1	78	0.2	%RPD
Uranium 235/236	0.61		0.17	80	0.49		0.15	78	21	%RPD
Uranium 238	10.4		1.1	80	11.2		1.1	78	7	%RPD
	Batch #:		1227019 (Sample)		1227019 (Duplicate)					

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

U Result is less than the sample detection limit.

F1H020470

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: RAD

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706 Shaw Environmental & Infrastructure Inc

Quote #: 89251 SDG:
Guteryl Steel
Report to: Kevin Cronin

#SMPS in LOT: 0

Date Received: 2011-08-02
Analytical Due Date: 2011-08-15
Report Due Date: 2011-08-16
Report Type: B Standard Report
EDD Code: 00

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
1	CITY OF LOCKPORT SEWER LO			2011-07-27 / 1355	MLCN1	SOLID

SAMPLE COMMENTS:

XX ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2M	EML	A-01-R MOD	SOLID, A-01-R MDD, Iso URANIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2O	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso THORIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	CITY OF LOCKPORT SEWER LO			2011-07-27 / 1345	MLCN2	WATER

SAMPLE COMMENTS:

XX ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso URANIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2O	EML	A-01-R MOD	WATER, A-01-R MOD, Iso THORIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
3	CITY OF LOCKPORT SEWER LO			2011-07-27 / 1435	MLCN3	SOLID

SAMPLE COMMENTS:

XX ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso URANIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2O	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso THORIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	CITY OF LOCKPORT SEWER LO			2011-07-27 / 1425	MLCN4	WATER

SAMPLE COMMENTS:

XX ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso URANIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2O	EML	A-01-R MOD	WATER, A-01-R MOD, Iso THORIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

stAmerica St. Louis
15 Rider Trail North
h City, MO 63045
ne 314.298.8566 fax 314.298.8757

CUR 388

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 072711	COC No: 001
w Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
0 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
cinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below ____			SDG No.
3) 782-4807 FAX	X 2 weeks STANDARD			
ject Name: Former Guterl Specialty Steel Corporation FUSRA	1 week			
: Lockport, NY	2 days			
#	1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
City of Lockport Sewer Location #1 US-0001	7/27/2011	1355	Grab	Sludge	1		X	X											1x500G
City of Lockport Sewer Location #1 UW-0001	7/27/2011	1345	Grab	Aqueous	3		X	X											3xLP
City of Lockport Sewer Location #2 US-0001 KC 0002	7/27/2011	1435	Grab	Sludge	1		X	X											1x500G
City of Lockport Sewer Location #2 UW-0001 KC 0002	7/27/2011	1425	Grab	Aqueous	3		X	X											3xLP

servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 4

sible Hazard Identification
] Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

cial Instructions/QC Requirements & Comments:
sible Radioactive Hazard SEWER LOCATION #2 US-0001 may CONTAIN HYDROCARBONS.

nquished by:	Company: Shaw E & I. Inc.	Date/Time: 8/1/11 1340	Received by:	Company: BFLO	Date/Time: 08-01-11 13:40
nquished by:	Company: BFLO	Date/Time: 08-01-11 14:00	Received by:	Company: BFLO	Date/Time: 8.1.11 1400
nquished by:	Company: BFLO	Date/Time: 8.1.11 1420	Received by:	Company: TA STL	Date/Time: 8/2/11 0940

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): FIH020470 TestAmerica St. Louis

CUR Form #: 388

CONDITION UPON RECEIPT FORM

Client: SHAW ENVIRO

Quote No: 89251

COC/RFA No: 001

Initiated By: NVO Date: 8/2/11 Time: 0940

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: Y (N)

Shipping # (s):*

1. 4485 0258 1694
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Sample Temperature (s):**

1. AMBIENT
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

Client Contact Name: _____ Informed by: _____

Sample(s) processed "as is"

Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 8/5/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

REVISED

PROJECT NO. 140415

Guteryl Steel

Lot #: F1H090481

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

October 14, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H090481
Revised

This report contains the analytical results for the eight samples received under chain of custody by TestAmerica in St. Louis on August 5, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

This report is revised to correct sample idenification numbers for sample-002 and 006 to A04AMW230001 and A04AMW230001 Dissolved.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1229246
The CCV %D for Dichlorodifluoromethane is outside the established QC limits. This analyte is not part of the analysis request and thus this excursion does not affect the data.

The MS/MSD recoveries for 1,1-Dichloroethene, 1,1-Dichloroethane, 1,2-Dichloroethene (total), 1,1,1-Trichloroethane, Benzene, Trichloroethene, and Bromodichloromethane are outside the established QC limits. The RPD is within method acceptance criteria except for 1,4-Dioxane indicating a possible matrix interference. Method performance is demonstrated by acceptable LCS recovery.

The sample required a dilution due to high concentrations of target analytes. There was insufficient sample to perform the dilution and reanalysis.

The Method Blank surrogate recovery for Toluene-d8 is outside acceptance limits. The samples associated with this method blank demonstrated acceptable surrogate recoveries indicating the surrogate excursion is isolated to the method blank and not indicative of the batch.

During screening F1H090481did not appear to have hits above the calibration range. Screening is not as accurate as the full analytical test. The sample was selected to be used for the MS/MSD in the batch. Therefore, all three vials were consumed in the first run. "E" flagged concentration values should be considered estimates.

Affected Samples:
F1H090481 (1): A04DMW240001

Batch: 1230013
There was insufficient sample volume to perform MS/MSD analysis. An LCS/LCSD was performed to demonstrate accuracy and replicate precision.

Affected Samples:
F1H090481 (2): A04DMW230001
F1H090481 (3): A04DMW713D0001

The samples were analyzed at a dilution due to high concentrations of target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090481 (2): A04DMW230001

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1222063
The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

Affected Samples:
F1H090481 (1): A04DMW240001
F1H090481 (2): A04DMW230001
F1H090481 (3): A04DMW713D0001

F1H090481 (4): A04BMW190001
F1H090481 (5): A04DMW240001 DISSOLVED
F1H090481 (6): A04DMW230001 DISSOLVED
F1H090481 (7): A04DMW713D0001 DISSOLVED
F1H090481 (8): A04BMW190001 DISSOLVED

Chloride (MCAWW 300.0A)

Batch: 1224118
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090481 (1): A04DMW240001
F1H090481 (2): A04DMW230001
F1H090481 (3): A04DMW713D0001
F1H090481 (4): A04BMW190001

Sulfate (MCAWW 300.0A)

Batch: 1224123
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090481 (1): A04DMW240001
F1H090481 (2): A04DMW230001
F1H090481 (3): A04DMW713D0001
F1H090481 (4): A04BMW190001

Nitrite as N (MCAWW 300.0A)

Batch: 1224121
The following samples were reported ND at dilution for Nitrite, due to interference with Chloride in the undiluted runs. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090481 (1): A04DMW240001
F1H090481 (3): A04DMW713D0001
F1H090481 (4): A04BMW190001

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H090481 (1): A04DMW240001
F1H090481 (2): A04DMW230001
F1H090481 (3): A04DMW713D0001

F1H090481 (4): A04BMW190001

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1224122
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H090481 (1): A04DMW240001
F1H090481 (2): A04DMW230001
F1H090481 (3): A04DMW713D0001
F1H090481 (4): A04BMW190001

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H090481

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H090481

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLHG0	001	A04DMW240001	08/04/11	09:25
MLHH0	002	A04AMW230001	08/04/11	10:40
MLHH1	003	A04DMW713D0001	08/04/11	12:00
MLHH2	004	A04BMW190001	08/04/11	13:30
MLHH8	005	A04DMW240001 DISSOLVED	08/04/11	09:25
MLHJ6	006	A04AMW230001 DISSOLVED	08/04/11	10:40
MLHJ7	007	A04DMW713D0001 DISSOLVED	08/04/11	12:00
MLHKE	008	A04BMW190001 DISSOLVED	08/04/11	13:30

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001

GC/MS Volatiles

Lot-Sample #...: F1H090481-001 Work Order #...: MLHG01AC Matrix.....: WATER
Date Sampled...: 08/04/11 09:25 Date Received..: 08/05/11
Prep Date.....: 08/16/11 Analysis Date..: 08/17/11
Prep Batch #...: 1229246 Analysis Time..: 01:31
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	**0.41 J**	**1.0**	**ug/L**
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**15**	**2.0**	**ug/L**
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**52 E**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**21**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**24**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**41 E**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**17**	**1.0**	**ug/L**
Vinyl chloride	**6.1**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001

GC/MS Volatiles

Lot-Sample #...: F1H090481-001 Work Order #...: MLHG01AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	115	(85 - 120)
Dibromofluoromethane	97	(85 - 115)
1,2-Dichloroethane-d4	98	(70 - 120)
4-Bromofluorobenzene	105	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

E Estimated result. Result concentration exceeds the calibration range.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001

TOTAL Metals

Lot-Sample #...: F1H090481-001 Matrix.....: WATER
Date Sampled...: 08/04/11 09:25 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	39.8 E	1	ug/L	SW846 6020A	08/10-08/11/11	MLHG01A4
		Dilution Factor: 1		Analysis Time..: 20:48		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AE
		Dilution Factor: 1		Analysis Time..: 15:22		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AF
		Dilution Factor: 1		Analysis Time..: 15:22		
Arsenic	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AD
		Dilution Factor: 1		Analysis Time..: 15:22		
Barium	67.9	50	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AG
		Dilution Factor: 1		Analysis Time..: 15:22		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AH
		Dilution Factor: 1		Analysis Time..: 15:22		
Calcium	104000 E	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHG01AJ
		Dilution Factor: 5		Analysis Time..: 11:42		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AK
		Dilution Factor: 1		Analysis Time..: 15:22		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AL
		Dilution Factor: 1		Analysis Time..: 15:22		
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AM
		Dilution Factor: 1		Analysis Time..: 15:22		
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AN
		Dilution Factor: 1		Analysis Time..: 15:22		
Iron	767	100	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AP
		Dilution Factor: 1		Analysis Time..: 15:22		
Magnesium	31700	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AQ
		Dilution Factor: 1		Analysis Time..: 09:50		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001

TOTAL Metals

Lot-Sample #...: F1H090481-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**110**	**15**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHG01AR**
		Dilution Factor: 1		Analysis Time..: 15:22		
Sodium	**77600**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHG01AT**
		Dilution Factor: 1		Analysis Time..: 09:50		
Nickel	**15.8 J**	**40**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHG01AU**
		Dilution Factor: 1		Analysis Time..: 15:22		
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLHG01AV
		Dilution Factor: 1		Analysis Time..: 17:34		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AW
		Dilution Factor: 1		Analysis Time..: 15:22		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHG01AX
		Dilution Factor: 1		Analysis Time..: 17:34		
Strontium	**495 E**	**25**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHG01A0**
		Dilution Factor: 5		Analysis Time..: 11:42		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHG01A1
		Dilution Factor: 1		Analysis Time..: 15:22		
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHG01A2
		Dilution Factor: 1		Analysis Time..: 15:22		
Zinc	**13.9 J**	**20**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHG01A3**
		Dilution Factor: 1		Analysis Time..: 15:22		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001

General Chemistry

Lot-Sample #...: F1H090481-001 Work Order #...: MLHG0 Matrix.....: WATER
Date Sampled...: 08/04/11 09:25 Date Received..: 08/05/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	116	20.0	mg/L	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 100		Analysis Time..: 03:43		
Fluoride	0.89	0.10	mg/L	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1		Analysis Time..: 03:14		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1		Analysis Time..: 03:14		
Nitrite	ND	0.040	mg/L	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 2		Analysis Time..: 05:23		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1		Analysis Time..: 03:14		
Sulfate	99.1	5.0	mg/L	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 10		Analysis Time..: 03:28		
Total Alkalinity	248	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	633	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001

GC/MS Volatiles

Lot-Sample #...: F1H090481-002 Work Order #...: MLHH01AN Matrix.....: WATER
Date Sampled...: 08/04/11 10:40 Date Received..: 08/05/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 17:00
Dilution Factor: 5
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	10	ug/L
Carbon tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	10	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chloroethane	**82 D**	**10**	**ug/L**
Chloroform	**1.4 J,D**	**5.0**	**ug/L**
1,2-Dichlorobenzene	ND	5.0	ug/L
1,3-Dichlorobenzene	ND	5.0	ug/L
1,4-Dichlorobenzene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	**50 D**	**5.0**	**ug/L**
1,2-Dichloroethene (total)	**160 D**	**10**	**ug/L**
1,2-Dichloropropane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	5.0	ug/L
2-Hexanone	ND	25	ug/L
Methylene chloride	**3.2 J,B,D**	**5.0**	**ug/L**
4-Methyl-2-pentanone	ND	25	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	**8.5 D**	**5.0**	**ug/L**
Toluene	**0.53 J,D**	**5.0**	**ug/L**
1,1,2-Trichloroethane	**1.9 J,D**	**5.0**	**ug/L**
Trichloroethene	**190 D**	**5.0**	**ug/L**
Vinyl chloride	**17 D**	**10**	**ug/L**
Xylenes (total)	ND	25	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	111	(85 - 120)
Dibromofluoromethane	114	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	109	(75 - 120)

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001

GC/MS Volatiles

Lot-Sample #...: F1H090481-002 Work Order #...: MLHH01AN Matrix.....: WATER

NOTE(S):

D Result was obtained from the analysis of a dilution.

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001

GC/MS Volatiles

Lot-Sample #...: F1H090481-002 Work Order #...: MLHH02AN Matrix.....: WATER
Date Sampled...: 08/04/11 10:40 Date Received..: 08/05/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 16:34
Dilution Factor: 25
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethane	650 D	25	ug/L
1,1,1-Trichloroethane	1100 D	25	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
1,2-Dichloroethane-d4	102	(70 - 120)
4-Bromofluorobenzene	105	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001

TOTAL Metals

Lot-Sample #...: F1H090481-002 Matrix.....: WATER
Date Sampled...: 08/04/11 10:40 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	6.7 E	1	ug/L	SW846 6020A	08/10-08/11/11	MLHH01AF
		Dilution Factor: 1		Analysis Time..: 20:54		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AQ
		Dilution Factor: 1		Analysis Time..: 15:35		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AR
		Dilution Factor: 1		Analysis Time..: 15:35		
Arsenic	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AP
		Dilution Factor: 1		Analysis Time..: 15:35		
Barium	58.8	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AT
		Dilution Factor: 1		Analysis Time..: 15:35		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AU
		Dilution Factor: 1		Analysis Time..: 15:35		
Calcium	88200 E	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHH01AV
		Dilution Factor: 5		Analysis Time..: 11:55		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AW
		Dilution Factor: 1		Analysis Time..: 15:35		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AX
		Dilution Factor: 1		Analysis Time..: 15:35		
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH01A0
		Dilution Factor: 1		Analysis Time..: 15:35		
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLHH01A1
		Dilution Factor: 1		Analysis Time..: 15:35		
Iron	928	100	ug/L	SW846 6010C	08/10-08/12/11	MLHH01A2
		Dilution Factor: 1		Analysis Time..: 15:35		
Magnesium	22400	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHH01A3
		Dilution Factor: 1		Analysis Time..: 10:03		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001

TOTAL Metals

Lot-Sample #...: F1H090481-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**804**	**15**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH01A4**
		Dilution Factor: 1		Analysis Time..: 15:35		
Sodium	**19300**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH01A5**
		Dilution Factor: 1		Analysis Time..: 10:03		
Nickel	**20.6 J**	**40**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH01A6**
		Dilution Factor: 1		Analysis Time..: 15:35		
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLHH01A7
		Dilution Factor: 1		Analysis Time..: 17:47		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH01A8
		Dilution Factor: 1		Analysis Time..: 15:35		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHH01A9
		Dilution Factor: 1		Analysis Time..: 17:47		
Strontium	**341 E**	**25**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHH01AA**
		Dilution Factor: 5		Analysis Time..: 11:55		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AC
		Dilution Factor: 1		Analysis Time..: 15:35		
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AD
		Dilution Factor: 1		Analysis Time..: 15:35		
Zinc	**117**	**20**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH01AE**
		Dilution Factor: 1		Analysis Time..: 15:35		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001

General Chemistry

Lot-Sample #...: F1H090481-002 Work Order #...: MLHH0 Matrix.....: WATER
Date Sampled...: 08/04/11 10:40 Date Received..: 08/05/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	23.1	2.0	mg/L	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 10		Analysis Time..: 12:35		
Fluoride	0.92	0.10	mg/L	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1		Analysis Time..: 12:21		
Nitrate	0.082	0.020	mg/L	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1		Analysis Time..: 12:21		
Nitrite	ND	0.020	mg/L	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 1		Analysis Time..: 12:21		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1		Analysis Time..: 12:21		
Sulfate	52.4	5.0	mg/L	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 10		Analysis Time..: 12:35		
Total Alkalinity	252	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	411	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001

GC/MS Volatiles

Lot-Sample #...: F1H090481-003 Work Order #...: MLHH11AN Matrix.....: WATER
Date Sampled...: 08/04/11 12:00 Date Received..: 08/05/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 16:07
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**4.2**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**1.0 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**0.23 J**	**2.0**	**ug/L**
Chloroform	**2.5**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**0.71 J**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**2.2**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**3.4**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	**0.10 J**	**1.0**	**ug/L**
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.92 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.18 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	**1.0 J**	**5.0**	**ug/L**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001

GC/MS Volatiles

Lot-Sample #...: F1H090481-003 Work Order #...: MLHH11AN Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	100	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
4-Bromofluorobenzene	110	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001

TOTAL Metals

Lot-Sample #...: F1H090481-003 Matrix.....: WATER
Date Sampled...: 08/04/11 12:00 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	**5.1 E**	**1**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHH11AF**
		Dilution Factor: 1		Analysis Time..: 21:01		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH11AQ
		Dilution Factor: 1		Analysis Time..: 15:42		
Aluminum	**280**	**200**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH11AR**
		Dilution Factor: 1		Analysis Time..: 15:42		
Arsenic	**14.2**	**10**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH11AP**
		Dilution Factor: 1		Analysis Time..: 15:42		
Barium	**217**	**50**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH11AT**
		Dilution Factor: 1		Analysis Time..: 15:42		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH11AU
		Dilution Factor: 1		Analysis Time..: 15:42		
Calcium	**146000 E**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHH11AV**
		Dilution Factor: 5		Analysis Time..: 12:01		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH11AW
		Dilution Factor: 1		Analysis Time..: 15:42		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH11AX
		Dilution Factor: 1		Analysis Time..: 15:42		
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH11A0
		Dilution Factor: 1		Analysis Time..: 15:42		
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLHH11A1
		Dilution Factor: 1		Analysis Time..: 15:42		
Iron	**583**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH11A2**
		Dilution Factor: 1		Analysis Time..: 15:42		
Magnesium	**60900**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHH11A3**
		Dilution Factor: 5		Analysis Time..: 12:01		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001

TOTAL Metals

Lot-Sample #...: F1H090481-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**134**	**15**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH11A4**
		Dilution Factor: 1		Analysis Time..: 15:42		
Sodium	**74700**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH11A5**
		Dilution Factor: 1		Analysis Time..: 10:09		
Nickel	ND	40	ug/L	SW846 6010C	08/10-08/12/11	MLHH11A6
		Dilution Factor: 1		Analysis Time..: 15:42		
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLHH11A7
		Dilution Factor: 1		Analysis Time..: 17:53		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH11A8
		Dilution Factor: 1		Analysis Time..: 15:42		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHH11A9
		Dilution Factor: 1		Analysis Time..: 17:53		
Strontium	**1300 E**	**25**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHH11AA**
		Dilution Factor: 5		Analysis Time..: 12:01		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHH11AC
		Dilution Factor: 1		Analysis Time..: 15:42		
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH11AD
		Dilution Factor: 1		Analysis Time..: 15:42		
Zinc	**8.8 J**	**20**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH11AE**
		Dilution Factor: 1		Analysis Time..: 15:42		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001

General Chemistry

Lot-Sample #...: F1H090481-003 Work Order #...: MLHH1 Matrix.....: WATER
Date Sampled...: 08/04/11 12:00 Date Received..: 08/05/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	173	20.0	mg/L	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 100		Analysis Time..: 04:26		
Fluoride	0.23	0.10	mg/L	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1		Analysis Time..: 03:57		
Nitrate	0.075	0.020	mg/L	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1		Analysis Time..: 03:57		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 10		Analysis Time..: 04:11		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1		Analysis Time..: 03:57		
Sulfate	76.2	5.0	mg/L	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 10		Analysis Time..: 04:11		
Total Alkalinity	419	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	904	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW190001

TOTAL Metals

Lot-Sample #...: F1H090481-004 Matrix.....: WATER
Date Sampled...: 08/04/11 13:30 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	16.4 E	1	ug/L	SW846 6020A	08/10-08/11/11	MLHH21AF
		Dilution Factor: 1		Analysis Time..: 21:08		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AQ
		Dilution Factor: 1		Analysis Time..: 15:48		
Aluminum	3150	200	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AR
		Dilution Factor: 1		Analysis Time..: 15:48		
Arsenic	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AP
		Dilution Factor: 1		Analysis Time..: 15:48		
Barium	59.6	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AT
		Dilution Factor: 1		Analysis Time..: 15:48		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AU
		Dilution Factor: 1		Analysis Time..: 15:48		
Calcium	152000 E	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHH21AV
		Dilution Factor: 5		Analysis Time..: 12:07		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AW
		Dilution Factor: 1		Analysis Time..: 15:48		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AX
		Dilution Factor: 1		Analysis Time..: 15:48		
Chromium	8.0 J	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH21A0
		Dilution Factor: 1		Analysis Time..: 15:48		
Copper	12.2 J	25	ug/L	SW846 6010C	08/10-08/12/11	MLHH21A1
		Dilution Factor: 1		Analysis Time..: 15:48		
Iron	3800	100	ug/L	SW846 6010C	08/10-08/12/11	MLHH21A2
		Dilution Factor: 1		Analysis Time..: 15:48		
Magnesium	64700	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHH21A3
		Dilution Factor: 5		Analysis Time..: 12:07		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW190001

TOTAL Metals

Lot-Sample #...: F1H090481-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	351	15	ug/L	SW846 6010C	08/10-08/12/11	MLHH21A4
		Dilution Factor: 1		Analysis Time..: 15:48		
Sodium	63400	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHH21A5
		Dilution Factor: 1		Analysis Time..: 10:15		
Nickel	19.6 J	40	ug/L	SW846 6010C	08/10-08/12/11	MLHH21A6
		Dilution Factor: 1		Analysis Time..: 15:48		
Lead	8.7 J	10	ug/L	SW846 6010C	08/10-08/16/11	MLHH21A7
		Dilution Factor: 1		Analysis Time..: 18:00		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH21A8
		Dilution Factor: 1		Analysis Time..: 15:48		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHH21A9
		Dilution Factor: 1		Analysis Time..: 18:00		
Strontium	409 E	25	ug/L	SW846 6010C	08/10-08/16/11	MLHH21AA
		Dilution Factor: 5		Analysis Time..: 12:07		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AC
		Dilution Factor: 1		Analysis Time..: 15:48		
Vanadium	4.7 J	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AD
		Dilution Factor: 1		Analysis Time..: 15:48		
Zinc	70.9	20	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AE
		Dilution Factor: 1		Analysis Time..: 15:48		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW190001

General Chemistry

Lot-Sample #...: F1H090481-004 Work Order #...: MLHH2 Matrix.....: WATER
Date Sampled...: 08/04/11 13:30 Date Received..: 08/05/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	72.5	20.0	mg/L	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 100		Analysis Time..: 02:59		
Fluoride	1.4	0.10	mg/L	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1		Analysis Time..: 02:30		
Nitrate	0.89	0.020	mg/L	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1		Analysis Time..: 02:30		
Nitrite	0.034 B	0.10	mg/L	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 5		Analysis Time..: 04:40		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1		Analysis Time..: 02:30		
Sulfate	95.0	5.0	mg/L	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 10		Analysis Time..: 02:45		
Total Alkalinity	400	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	500	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-005 Matrix.....: WATER
Date Sampled...: 08/04/11 09:25 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	**42.7 E**	**1**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHH81A2**
		Dilution Factor: 1		Analysis Time..: 21:14		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AC
		Dilution Factor: 1		Analysis Time..: 15:54		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AD
		Dilution Factor: 1		Analysis Time..: 15:54		
Arsenic	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AA
		Dilution Factor: 1		Analysis Time..: 15:54		
Barium	**67.3**	**50**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH81AE**
		Dilution Factor: 1		Analysis Time..: 15:54		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AF
		Dilution Factor: 1		Analysis Time..: 15:54		
Calcium	**110000 E**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHH81AG**
		Dilution Factor: 5		Analysis Time..: 12:13		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AH
		Dilution Factor: 1		Analysis Time..: 15:54		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AJ
		Dilution Factor: 1		Analysis Time..: 15:54		
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AK
		Dilution Factor: 1		Analysis Time..: 15:54		
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AL
		Dilution Factor: 1		Analysis Time..: 15:54		
Iron	**612**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH81AM**
		Dilution Factor: 1		Analysis Time..: 15:54		
Magnesium	**32500**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH81AN**
		Dilution Factor: 1		Analysis Time..: 10:21		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**104**	**15**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH81AP**
		Dilution Factor: 1		Analysis Time..: 15:54		
Sodium	**71300**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH81AQ**
		Dilution Factor: 1		Analysis Time..: 10:21		
Nickel	**14.6 J**	**40**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH81AR**
		Dilution Factor: 1		Analysis Time..: 15:54		
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLHH81AT
		Dilution Factor: 1		Analysis Time..: 18:06		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AU
		Dilution Factor: 1		Analysis Time..: 15:54		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHH81AV
		Dilution Factor: 1		Analysis Time..: 18:06		
Strontium	**522 E**	**25**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHH81AW**
		Dilution Factor: 5		Analysis Time..: 12:13		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AX
		Dilution Factor: 1		Analysis Time..: 15:54		
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH81A0
		Dilution Factor: 1		Analysis Time..: 15:54		
Zinc	**11.3 J**	**20**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH81A1**
		Dilution Factor: 1		Analysis Time..: 15:54		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-006 Matrix.....: WATER
Date Sampled...: 08/04/11 10:40 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	**6.3 E**	**1**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHJ61AD**
		Dilution Factor: 1		Analysis Time..: 21:21		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AG
		Dilution Factor: 1		Analysis Time..: 16:01		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AH
		Dilution Factor: 1		Analysis Time..: 16:01		
Arsenic	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AF
		Dilution Factor: 1		Analysis Time..: 16:01		
Barium	**54.5**	**50**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ61AJ**
		Dilution Factor: 1		Analysis Time..: 16:01		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AK
		Dilution Factor: 1		Analysis Time..: 16:01		
Calcium	**92800 E**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHJ61AL**
		Dilution Factor: 5		Analysis Time..: 12:20		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AM
		Dilution Factor: 1		Analysis Time..: 16:01		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AN
		Dilution Factor: 1		Analysis Time..: 16:01		
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AP
		Dilution Factor: 1		Analysis Time..: 16:01		
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AQ
		Dilution Factor: 1		Analysis Time..: 16:01		
Iron	**679**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ61AR**
		Dilution Factor: 1		Analysis Time..: 16:01		
Magnesium	**21800**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ61AT**
		Dilution Factor: 1		Analysis Time..: 10:28		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**728**	**15**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ61AU**
		Dilution Factor: 1		Analysis Time..: 16:01		
Sodium	**18100**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ61AV**
		Dilution Factor: 1		Analysis Time..: 10:28		
Nickel	**22.1 J**	**40**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ61AW**
		Dilution Factor: 1		Analysis Time..: 16:01		
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLHJ61AX
		Dilution Factor: 1		Analysis Time..: 18:12		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61A0
		Dilution Factor: 1		Analysis Time..: 16:01		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHJ61A1
		Dilution Factor: 1		Analysis Time..: 18:12		
Strontium	**364 E**	**25**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHJ61A2**
		Dilution Factor: 5		Analysis Time..: 12:20		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61A3
		Dilution Factor: 1		Analysis Time..: 16:01		
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AA
		Dilution Factor: 1		Analysis Time..: 16:01		
Zinc	**104**	**20**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ61AC**
		Dilution Factor: 1		Analysis Time..: 16:01		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-007 Matrix.....: WATER
Date Sampled...: 08/04/11 12:00 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	**4.7 E**	**1**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHJ71AH**
		Dilution Factor: 1		Analysis Time..: 21:28		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AL
		Dilution Factor: 1		Analysis Time..: 16:07		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AM
		Dilution Factor: 1		Analysis Time..: 16:07		
Arsenic	**9.3 J**	**10**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ71AK**
		Dilution Factor: 1		Analysis Time..: 16:07		
Barium	**221**	**50**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ71AN**
		Dilution Factor: 1		Analysis Time..: 16:07		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AP
		Dilution Factor: 1		Analysis Time..: 16:07		
Calcium	**141000 E**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHJ71AQ**
		Dilution Factor: 5		Analysis Time..: 12:26		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AR
		Dilution Factor: 1		Analysis Time..: 16:07		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AT
		Dilution Factor: 1		Analysis Time..: 16:07		
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AU
		Dilution Factor: 1		Analysis Time..: 16:07		
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AV
		Dilution Factor: 1		Analysis Time..: 16:07		
Iron	**259**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ71AW**
		Dilution Factor: 1		Analysis Time..: 16:07		
Magnesium	**59200**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHJ71AX**
		Dilution Factor: 5		Analysis Time..: 12:26		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**113**	15	ug/L	**SW846 6010C**	**08/10-08/12/11**	**MLHJ71A0**
		Dilution Factor: 1		Analysis Time..: 16:07		
Sodium	**73000**	1000	ug/L	**SW846 6010C**	**08/10-08/12/11**	**MLHJ71A1**
		Dilution Factor: 1		Analysis Time..: 10:34		
Nickel	ND	40	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71A2
		Dilution Factor: 1		Analysis Time..: 16:07		
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLHJ71A3
		Dilution Factor: 1		Analysis Time..: 18:19		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AA
		Dilution Factor: 1		Analysis Time..: 16:07		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHJ71AC
		Dilution Factor: 1		Analysis Time..: 18:19		
Strontium	**1270 E**	25	ug/L	**SW846 6010C**	**08/10-08/16/11**	**MLHJ71AD**
		Dilution Factor: 5		Analysis Time..: 12:26		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AE
		Dilution Factor: 1		Analysis Time..: 16:07		
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AF
		Dilution Factor: 1		Analysis Time..: 16:07		
Zinc	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AG
		Dilution Factor: 1		Analysis Time..: 16:07		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW190001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-008 Matrix.....: WATER
Date Sampled...: 08/04/11 13:30 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	**12.9 E**	1	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHKE1AM**
		Dilution Factor: 1		Analysis Time..: 21:34		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AQ
		Dilution Factor: 1		Analysis Time..: 16:27		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AR
		Dilution Factor: 1		Analysis Time..: 16:27		
Arsenic	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AP
		Dilution Factor: 1		Analysis Time..: 16:27		
Barium	**43.8 J**	**50**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHKE1AT**
		Dilution Factor: 1		Analysis Time..: 16:27		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AU
		Dilution Factor: 1		Analysis Time..: 16:27		
Calcium	**65300 E**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHKE1AV**
		Dilution Factor: 5		Analysis Time..: 12:45		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AW
		Dilution Factor: 1		Analysis Time..: 16:27		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AX
		Dilution Factor: 1		Analysis Time..: 16:27		
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1A0
		Dilution Factor: 1		Analysis Time..: 16:27		
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1A1
		Dilution Factor: 1		Analysis Time..: 16:27		
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1A2
		Dilution Factor: 1		Analysis Time..: 16:27		
Magnesium	**29300**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHKE1A3**
		Dilution Factor: 1		Analysis Time..: 10:53		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW190001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	ND	15	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AA
		Dilution Factor: 1		Analysis Time..: 16:27		
Sodium	**62000**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHKE1AC**
		Dilution Factor: 1		Analysis Time..: 10:53		
Nickel	ND	40	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AD
		Dilution Factor: 1		Analysis Time..: 16:27		
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLHKE1AE
		Dilution Factor: 1		Analysis Time..: 18:38		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AF
		Dilution Factor: 1		Analysis Time..: 16:27		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHKE1AG
		Dilution Factor: 1		Analysis Time..: 18:38		
Strontium	**326 E**	**25**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHKE1AH**
		Dilution Factor: 5		Analysis Time..: 12:45		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AJ
		Dilution Factor: 1		Analysis Time..: 16:27		
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AK
		Dilution Factor: 1		Analysis Time..: 16:27		
Zinc	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AL
		Dilution Factor: 1		Analysis Time..: 16:27		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRJ01AA Matrix.....: WATER
MB Lot-Sample #: F1H170000-246

Prep Date.....: 08/16/11 Analysis Time..: 00:59
Analysis Date..: 08/17/11 Prep Batch #...: 1229246
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	122 *	(85 - 120)
Dibromofluoromethane	92	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRJ01AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	101	(70 - 120)		
4-Bromofluorobenzene	109	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

* Surrogate recovery is outside stated control limits.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRLL1AA Matrix.....: WATER
MB Lot-Sample #: F1H180000-013

Prep Date.....: 08/17/11 Analysis Time..: 10:16
Analysis Date..: 08/17/11 Prep Batch #...: 1230013
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	**0.28 J**	**1.0**	**ug/L**	**SW846 8260B**
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	103	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRLL1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	102	(70 - 120)		
4-Bromofluorobenzene	101	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090481 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H100000-061 **Prep Batch #...:** 1222061						
Uranium	ND	1	ug/L	SW846 6020A	08/10-08/11/11	MLH641AA
		Dilution Factor: 1				
		Analysis Time..: 20:34				
MB Lot-Sample #: F1H100000-063 **Prep Batch #...:** 1222063						
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLH681AD
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLH681AU
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Arsenic	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLH681AA
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Barium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLH681AE
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLH681AF
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLH681AH
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Calcium	ND	1000	ug/L	SW846 6010C	08/10-08/16/11	MLH681AG
		Dilution Factor: 1				
		Analysis Time..: 11:29				
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLH681AK
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLH681AJ
		Dilution Factor: 1				
		Analysis Time..: 15:09				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090481 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLH681AL
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLH681AM
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLH681AT
		Dilution Factor: 1				
		Analysis Time..: 17:21				
Magnesium	ND	1000	ug/L	SW846 6010C	08/10-08/12/11	MLH681AN
		Dilution Factor: 1				
		Analysis Time..: 09:37				
Manganese	ND	15	ug/L	SW846 6010C	08/10-08/12/11	MLH681AP
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Nickel	ND	40	ug/L	SW846 6010C	08/10-08/12/11	MLH681AR
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLH681AV
		Dilution Factor: 1				
		Analysis Time..: 17:21				
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLH681AC
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Sodium	ND	1000	ug/L	SW846 6010C	08/10-08/12/11	MLH681AQ
		Dilution Factor: 1				
		Analysis Time..: 09:37				
Strontium	ND	5	ug/L	SW846 6010C	08/10-08/16/11	MLH681AW
		Dilution Factor: 1				
		Analysis Time..: 11:29				
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLH681AX
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLH681A0
		Dilution Factor: 1				
		Analysis Time..: 15:09				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090481 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLH681A1

Dilution Factor: 1
Analysis Time..: 15:09

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H090481 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLNQN1AA		MB Lot-Sample #: F1H120000-118		
	ND	0.20	mg/L	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Fluoride		Work Order #: MLNQQ1AA		MB Lot-Sample #: F1H120000-119		
	ND	0.10	mg/L	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Nitrate		Work Order #: MLNQR1AA		MB Lot-Sample #: F1H120000-120		
	ND	0.020	mg/L	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Nitrite		Work Order #: MLNQV1AA		MB Lot-Sample #: F1H120000-121		
	ND	0.020	mg/L	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Phosphate as P, Ortho		Work Order #: MLNQW1AA		MB Lot-Sample #: F1H120000-122		
	ND	0.50	mg/L	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Sulfate		Work Order #: MLNQX1AA		MB Lot-Sample #: F1H120000-123		
	ND	0.50	mg/L	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Total Alkalinity		Work Order #: MLRFM1AA		MB Lot-Sample #: F1H170000-090		
	ND	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLRAM1AA		MB Lot-Sample #: F1H120000-098		
	ND	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRJ01AC Matrix.....: WATER
LCS Lot-Sample#: F1H170000-246
Prep Date.....: 08/16/11 Analysis Date..: 08/16/11
Prep Batch #...: 1229246 Analysis Time..: 23:59
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
cis-1,3-Dichloropropene	118	(70 - 130)	SW846 8260B
Dibromochloromethane	106	(60 - 135)	SW846 8260B
Vinyl chloride	97	(50 - 145)	SW846 8260B
Bromomethane	99	(30 - 145)	SW846 8260B
Chloroethane	89	(60 - 135)	SW846 8260B
Acetone	82	(40 - 140)	SW846 8260B
1,1-Dichloroethene	109	(70 - 130)	SW846 8260B
Methylene chloride	90	(55 - 140)	SW846 8260B
Carbon disulfide	103	(35 - 160)	SW846 8260B
1,1-Dichloroethane	90	(70 - 135)	SW846 8260B
2-Butanone	89	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	103	(85 - 115)	SW846 8260B
Chloroform	112	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	93	(65 - 130)	SW846 8260B
Carbon tetrachloride	93	(65 - 140)	SW846 8260B
1,2-Dichloroethane	113	(70 - 130)	SW846 8260B
Benzene	93	(80 - 120)	SW846 8260B
Trichloroethene	86	(70 - 125)	SW846 8260B
1,2-Dichloropropane	111	(75 - 125)	SW846 8260B
Bromodichloromethane	95	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	105	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	117	(55 - 140)	SW846 8260B
Toluene	116	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	110	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	105	(75 - 125)	SW846 8260B
2-Hexanone	96	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	105	(60 - 135)	SW846 8260B
Chlorobenzene	110	(80 - 120)	SW846 8260B
Bromoform	102	(70 - 130)	SW846 8260B
Ethylbenzene	106	(75 - 125)	SW846 8260B
Styrene	96	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	105	(65 - 130)	SW846 8260B
Tetrachloroethene	108	(45 - 150)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRJ01AC Matrix.....: WATER
LCS Lot-Sample#: F1H170000-246

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichlorobenzene	**107**	**(70 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	105	(85 - 115)
1,2-Dichloroethane-d4	100	(70 - 120)
4-Bromofluorobenzene	106	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRLL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: F1H180000-013 MLRLL1AD-LCSD
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 09:23
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	103	(70 - 130)			SW846 8260B
	104	(70 - 130)	0.58	(0-20)	SW846 8260B
Dibromochloromethane	102	(60 - 135)			SW846 8260B
	102	(60 - 135)	0.88	(0-20)	SW846 8260B
Vinyl chloride	94	(50 - 145)			SW846 8260B
	88	(50 - 145)	5.7	(0-20)	SW846 8260B
Bromomethane	106	(30 - 145)			SW846 8260B
	103	(30 - 145)	2.5	(0-20)	SW846 8260B
Chloroethane	94	(60 - 135)			SW846 8260B
	92	(60 - 135)	2.1	(0-20)	SW846 8260B
Acetone	92	(40 - 140)			SW846 8260B
	98	(40 - 140)	6.2	(0-20)	SW846 8260B
1,1-Dichloroethene	104	(70 - 130)			SW846 8260B
	104	(70 - 130)	0.19	(0-20)	SW846 8260B
Methylene chloride	91	(55 - 140)			SW846 8260B
	95	(55 - 140)	4.8	(0-20)	SW846 8260B
Carbon disulfide	98	(35 - 160)			SW846 8260B
	95	(35 - 160)	3.2	(0-20)	SW846 8260B
1,1-Dichloroethane	96	(70 - 135)			SW846 8260B
	95	(70 - 135)	0.38	(0-20)	SW846 8260B
2-Butanone	89	(30 - 150)			SW846 8260B
	94	(30 - 150)	5.9	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	98	(85 - 115)			SW846 8260B
	98	(85 - 115)	0.15	(0-20)	SW846 8260B
Chloroform	93	(65 - 135)			SW846 8260B
	96	(65 - 135)	3.2	(0-20)	SW846 8260B
1,1,1-Trichloroethane	101	(65 - 130)			SW846 8260B
	104	(65 - 130)	3.1	(0-20)	SW846 8260B
Carbon tetrachloride	103	(65 - 140)			SW846 8260B
	103	(65 - 140)	0.090	(0-20)	SW846 8260B
1,2-Dichloroethane	94	(70 - 130)			SW846 8260B
	97	(70 - 130)	2.9	(0-20)	SW846 8260B
Benzene	99	(80 - 120)			SW846 8260B
	99	(80 - 120)	0.14	(0-20)	SW846 8260B
Trichloroethene	93	(70 - 125)			SW846 8260B
	94	(70 - 125)	1.1	(0-20)	SW846 8260B
1,2-Dichloropropane	95	(75 - 125)			SW846 8260B
	95	(75 - 125)	0.37	(0-20)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRLL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: F1H180000-013 MLRLL1AD-LCSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	98	(75 - 120)			SW846 8260B
	98	(75 - 120)	0.070	(0-20)	SW846 8260B
1,1,2-Trichloroethane	95	(75 - 125)			SW846 8260B
	100	(75 - 125)	5.0	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	105	(55 - 140)			SW846 8260B
	104	(55 - 140)	1.2	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	106	(75 - 120)	0.28	(0-20)	SW846 8260B
1,3-Dichlorobenzene	101	(75 - 125)			SW846 8260B
	102	(75 - 125)	0.78	(0-20)	SW846 8260B
1,4-Dichlorobenzene	96	(75 - 125)			SW846 8260B
	97	(75 - 125)	0.88	(0-20)	SW846 8260B
2-Hexanone	89	(55 - 130)			SW846 8260B
	88	(55 - 130)	1.3	(0-20)	SW846 8260B
4-Methyl-2-pentanone	96	(60 - 135)			SW846 8260B
	100	(60 - 135)	3.9	(0-20)	SW846 8260B
Chlorobenzene	98	(80 - 120)			SW846 8260B
	98	(80 - 120)	0.37	(0-20)	SW846 8260B
Bromoform	104	(70 - 130)			SW846 8260B
	108	(70 - 130)	3.6	(0-20)	SW846 8260B
Ethylbenzene	105	(75 - 125)			SW846 8260B
	105	(75 - 125)	0.47	(0-20)	SW846 8260B
Styrene	111	(65 - 135)			SW846 8260B
	111	(65 - 135)	0.090	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	92	(65 - 130)			SW846 8260B
	96	(65 - 130)	4.1	(0-20)	SW846 8260B
Tetrachloroethene	105	(45 - 150)			SW846 8260B
	102	(45 - 150)	3.2	(0-20)	SW846 8260B
1,2-Dichlorobenzene	98	(70 - 120)			SW846 8260B
	102	(70 - 120)	3.8	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
	111	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
	107	(85 - 115)
1,2-Dichloroethane-d4	97	(70 - 120)
	102	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)
	101	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090481 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H100000-061 **Prep Batch #...:** 1222061					
Uranium	104	(80 - 120)	SW846 6020A	08/10-08/11/11	MLH641AC
		Dilution Factor: 1		Analysis Time..: 20:41	
LCS Lot-Sample#: F1H100000-063 **Prep Batch #...:** 1222063					
Arsenic	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A2
		Dilution Factor: 1		Analysis Time..: 15:16	
Silver	96	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A3
		Dilution Factor: 1		Analysis Time..: 15:16	
Aluminum	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A4
		Dilution Factor: 1		Analysis Time..: 15:16	
Barium	110	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A5
		Dilution Factor: 1		Analysis Time..: 15:16	
Beryllium	116	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A6
		Dilution Factor: 1		Analysis Time..: 15:16	
Calcium	105	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681A7
		Dilution Factor: 1		Analysis Time..: 11:36	
Cadmium	110	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A8
		Dilution Factor: 1		Analysis Time..: 15:16	
Cobalt	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A9
		Dilution Factor: 1		Analysis Time..: 15:16	
Chromium	107	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CA
		Dilution Factor: 1		Analysis Time..: 15:16	
Copper	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CC
		Dilution Factor: 1		Analysis Time..: 15:16	
Iron	110	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CD
		Dilution Factor: 1		Analysis Time..: 15:16	
Magnesium	103	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CE
		Dilution Factor: 1		Analysis Time..: 09:44	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090481 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	109	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CF
		Dilution Factor: 1	Analysis Time..: 15:16		
Sodium	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CG
		Dilution Factor: 1	Analysis Time..: 09:44		
Nickel	107	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CH
		Dilution Factor: 1	Analysis Time..: 15:16		
Lead	102	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681CJ
		Dilution Factor: 1	Analysis Time..: 17:27		
Antimony	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CK
		Dilution Factor: 1	Analysis Time..: 15:16		
Selenium	104	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681CL
		Dilution Factor: 1	Analysis Time..: 17:27		
Strontium	102	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681CM
		Dilution Factor: 1	Analysis Time..: 11:36		
Thallium	104	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CN
		Dilution Factor: 1	Analysis Time..: 15:16		
Vanadium	107	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CP
		Dilution Factor: 1	Analysis Time..: 15:16		
Zinc	115	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CQ
		Dilution Factor: 1	Analysis Time..: 15:16		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090481 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLNQN1AC	LCS Lot-Sample#: F1H120000-118		
	97	(90 - 110)	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 1	Analysis Time..: 11:52		
Fluoride		Work Order #: MLNQQ1AC	LCS Lot-Sample#: F1H120000-119		
	96	(90 - 110)	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1	Analysis Time..: 11:52		
Nitrate		Work Order #: MLNQR1AC	LCS Lot-Sample#: F1H120000-120		
	96	(90 - 110)	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1	Analysis Time..: 11:52		
Nitrite		Work Order #: MLNQV1AC	LCS Lot-Sample#: F1H120000-121		
	93	(90 - 110)	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 1	Analysis Time..: 11:52		
Phosphate as P, Ortho		Work Order #: MLNQW1AC	LCS Lot-Sample#: F1H120000-122		
	93	(90 - 110)	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1	Analysis Time..: 11:52		
Sulfate		Work Order #: MLNQX1AC	LCS Lot-Sample#: F1H120000-123		
	94	(90 - 110)	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 1	Analysis Time..: 11:52		
Total Alkalinity		Work Order #: MLRFM1AC	LCS Lot-Sample#: F1H170000-090		
	92	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLRFM1AD	LCS Lot-Sample#: F1H170000-090		
	93	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLRAM1AC	LCS Lot-Sample#: F1H120000-098		
	100	(90 - 113)	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLHG01CG-MS Matrix.....: WATER
MS Lot-Sample #: F1H090481-001 MLHG01CH-MSD
Date Sampled...: 08/04/11 09:25 Date Received..: 08/05/11
Prep Date.....: 08/16/11 Analysis Date..: 08/17/11
Prep Batch #...: 1229246 Analysis Time..: 02:01
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	95	(70 - 130)			SW846 8260B
	85	(70 - 130)	10	(0-20)	SW846 8260B
Dibromochloromethane	86	(60 - 135)			SW846 8260B
	78	(60 - 135)	9.5	(0-20)	SW846 8260B
Vinyl chloride	107	(50 - 145)			SW846 8260B
	97	(50 - 145)	6.5	(0-20)	SW846 8260B
Bromomethane	85	(30 - 145)			SW846 8260B
	78	(30 - 145)	8.3	(0-20)	SW846 8260B
Chloroethane	120	(60 - 135)			SW846 8260B
	120	(60 - 135)	0.07	(0-20)	SW846 8260B
Acetone	81	(40 - 140)			SW846 8260B
	86	(40 - 140)	7.0	(0-20)	SW846 8260B
1,1-Dichloroethene	171 a	(70 - 130)			SW846 8260B
	202 a	(70 - 130)	7.9	(0-20)	SW846 8260B
Methylene chloride	75	(55 - 140)			SW846 8260B
	70	(55 - 140)	7.1	(0-20)	SW846 8260B
Carbon disulfide	86	(35 - 160)			SW846 8260B
	83	(35 - 160)	3.8	(0-20)	SW846 8260B
1,1-Dichloroethane	201 a	(70 - 135)			SW846 8260B
	253 a	(70 - 135)	7.0	(0-20)	SW846 8260B
2-Butanone	84	(30 - 150)			SW846 8260B
	78	(30 - 150)	7.5	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	121 a	(85 - 115)			SW846 8260B
	129 a	(85 - 115)	3.0	(0-20)	SW846 8260B
Chloroform	96	(65 - 135)			SW846 8260B
	87	(65 - 135)	10	(0-20)	SW846 8260B
1,1,1-Trichloroethane	259 a	(65 - 130)			SW846 8260B
	337 a	(65 - 130)	11	(0-20)	SW846 8260B
Carbon tetrachloride	76	(65 - 140)			SW846 8260B
	71	(65 - 140)	7.1	(0-20)	SW846 8260B
1,2-Dichloroethane	96	(70 - 130)			SW846 8260B
	91	(70 - 130)	5.3	(0-20)	SW846 8260B
Benzene	75 a	(80 - 120)			SW846 8260B
	68 a	(80 - 120)	9.6	(0-20)	SW846 8260B
Trichloroethene	162 a	(70 - 125)			SW846 8260B
	186 a	(70 - 125)	7.0	(0-20)	SW846 8260B
1,2-Dichloropropane	93	(75 - 125)			SW846 8260B
	86	(75 - 125)	7.8	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLHG01CG-MS Matrix.....: WATER
MS Lot-Sample #: F1H090481-001 MLHG01CH-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	81	(75 - 120)			SW846 8260B
	74 a	(75 - 120)	9.4	(0-20)	SW846 8260B
1,1,2-Trichloroethane	89	(75 - 125)			SW846 8260B
	80	(75 - 125)	11	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	93	(55 - 140)			SW846 8260B
	85	(55 - 140)	8.5	(0-20)	SW846 8260B
Toluene	94	(75 - 120)			SW846 8260B
	87	(75 - 120)	8.3	(0-20)	SW846 8260B
1,3-Dichlorobenzene	91	(75 - 125)			SW846 8260B
	85	(75 - 125)	7.0	(0-20)	SW846 8260B
1,4-Dichlorobenzene	88	(75 - 125)			SW846 8260B
	80	(75 - 125)	9.9	(0-20)	SW846 8260B
2-Hexanone	86	(55 - 130)			SW846 8260B
	72	(55 - 130)	17	(0-20)	SW846 8260B
4-Methyl-2-pentanone	93	(60 - 135)			SW846 8260B
	82	(60 - 135)	13	(0-20)	SW846 8260B
Chlorobenzene	92	(80 - 120)			SW846 8260B
	83	(80 - 120)	11	(0-20)	SW846 8260B
Bromoform	82	(70 - 130)			SW846 8260B
	75	(70 - 130)	8.9	(0-20)	SW846 8260B
Ethylbenzene	87	(75 - 125)			SW846 8260B
	79	(75 - 125)	9.6	(0-20)	SW846 8260B
Styrene	80	(65 - 135)			SW846 8260B
	73	(65 - 135)	9.5	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	86	(65 - 130)			SW846 8260B
	80	(65 - 130)	7.6	(0-20)	SW846 8260B
Tetrachloroethene	87	(45 - 150)			SW846 8260B
	80	(45 - 150)	9.0	(0-20)	SW846 8260B
1,2-Dichlorobenzene	90	(70 - 120)			SW846 8260B
	81	(70 - 120)	11	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
	109	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
	106	(85 - 115)
1,2-Dichloroethane-d4	105	(70 - 120)
	105	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)
	103	(75 - 120)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 **Work Order #...:** MLHG01CG-MS **Matrix.....:** WATER
MS Lot-Sample #: F1H090481-001 MLHG01CH-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090481 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H090496-002 **Prep Batch #...:** 1222061							
Uranium	105	(80 - 120)			SW846 6020A	08/10-08/11/11	MLHLC1DG
	108	(80 - 120)	2.6	(0-20)	SW846 6020A	08/10-08/11/11	MLHLC1DH
		Dilution Factor: 1					
		Analysis Time..: 22:14					
MS Lot-Sample #: F1H090496-002 **Prep Batch #...:** 1222063							
Aluminum	104	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DW
	105	(80 - 120)	1.0	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DX
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Antimony	105	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1C3
	105	(80 - 120)	0.51	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1C4
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Arsenic	104	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DR
	105	(80 - 120)	0.50	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DT
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Barium	107	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1D0
	108	(80 - 120)	0.87	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1D1
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Beryllium	111	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1D2
	111	(80 - 120)	0.61	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1D3
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Cadmium	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1D6
	102	(80 - 120)	0.81	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1D7
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Calcium	117	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1D4
	100	(80 - 120)	2.1	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1D5
		Dilution Factor: 5					
		Analysis Time..: 13:04					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090481 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CJ
	101	(80 - 120)	0.85	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CK
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Cobalt	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CG
	99	(80 - 120)	0.69	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CH
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Copper	101	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CL
	102	(80 - 120)	0.89	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CM
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Iron	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CN
	104	(80 - 120)	0.78	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CP
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Lead	99	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1C1
	100	(80 - 120)	0.47	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1C2
		Dilution Factor: 1					
		Analysis Time..: 18:58					
Magnesium	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CQ
	99	(80 - 120)	0.25	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CR
		Dilution Factor: 1					
		Analysis Time..: 11:12					
Manganese	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CT
	103	(80 - 120)	0.71	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CU
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Nickel	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CX
	99	(80 - 120)	0.95	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1C0
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Selenium	103	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1C5
	105	(80 - 120)	1.2	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1C6
		Dilution Factor: 1					
		Analysis Time..: 18:58					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090481 Matrix.....: WATER
Date Sampled...: 08/05/11 09:30 Date Received..: 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	93	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DU
	94	(80 - 120)	1.2	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DV
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Sodium	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CV
	102	(80 - 120)	0.41	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CW
		Dilution Factor: 1					
		Analysis Time..: 11:12					
Strontium	105	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1C7
	103	(80 - 120)	1.3	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1C8
		Dilution Factor: 5					
		Analysis Time..: 13:04					
Thallium	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1C9
	99	(80 - 120)	0.97	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DA
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Vanadium	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DC
	103	(80 - 120)	0.76	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DD
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Zinc	108	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DE
	110	(80 - 120)	1.4	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DF
		Dilution Factor: 1					
		Analysis Time..: 16:46					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090481 **Matrix.....:** WATER
Date Sampled...: 08/04/11 10:40 **Date Received..:** 08/05/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLHH01CG		MS Lot-Sample #: F1H090481-002	
	105	(90 - 110)	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 10	Analysis Time..: 12:35		
Fluoride		Work Order #...: MLHH01CJ		MS Lot-Sample #: F1H090481-002	
	99	(90 - 110)	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1	Analysis Time..: 12:21		
Nitrate		Work Order #...: MLHH01CL		MS Lot-Sample #: F1H090481-002	
	100	(90 - 110)	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1	Analysis Time..: 12:21		
Nitrite		Work Order #...: MLHH01CN		MS Lot-Sample #: F1H090481-002	
	72 N	(90 - 110)	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 1	Analysis Time..: 12:21		
Phosphate as P, Ortho		Work Order #...: MLHH01CQ		MS Lot-Sample #: F1H090481-002	
	63 N	(90 - 110)	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1	Analysis Time..: 12:21		
Sulfate		Work Order #...: MLHH01CT		MS Lot-Sample #: F1H090481-002	
	96	(90 - 110)	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 10	Analysis Time..: 12:35		
Total Alkalinity		Work Order #...: MLHLC1EA		MS Lot-Sample #: F1H090496-002	
	98	(80 - 120)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090481 **Work Order #...:** MLHLC-SMP MLHLC-DUP **Matrix.....:** WATER

Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H090496-002		
	387	383	mg/L	1.0	(0-15)	MCAWW 160.1	08/11-08/12/11	1224098
			Dilution Factor: 1			Analysis Time..: 00:00		
Total Alkalinity						SD Lot-Sample #: F1H090496-002		
	252	252	mg/L	0.0	(0-20)	MCAWW 310.1	08/17/11	1229090
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090481 **Work Order #...:** MLHH0-SMP MLHH0-DUP **Matrix.....:** WATER

Date Sampled...: 08/04/11 10:40 **Date Received..:** 08/05/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H090481-002		
	23.1	23.4	mg/L	1.3	(0-20)	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 10				Analysis Time..: 12:35		
Fluoride						SD Lot-Sample #: F1H090481-002		
	0.92	0.99	mg/L	6.7	(0-20)	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1				Analysis Time..: 12:21		
Nitrate						SD Lot-Sample #: F1H090481-002		
	0.082	0.077	mg/L	6.3	(0-20)	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1				Analysis Time..: 12:21		
Nitrite						SD Lot-Sample #: F1H090481-002		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 1				Analysis Time..: 12:21		
Phosphate as P, Ortho						SD Lot-Sample #: F1H090481-002		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1				Analysis Time..: 12:21		
Sulfate						SD Lot-Sample #: F1H090481-002		
	52.4	52.7	mg/L	0.70	(0-20)	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 10				Analysis Time..: 12:35		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001

Radiochemistry

Lab Sample ID: F1H090481-001
Work Order: MLHG0
Matrix: WATER

Date Collected: 08/04/11 0925
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 67
Uranium 234	13.1		1.3	0.1	0.05	08/16/11	08/17/11
Uranium 235/236	0.43		0.15	0.10	0.03	08/16/11	08/17/11
Uranium 238	12.6		1.3	0.1	0.03	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001

Radiochemistry

Lab Sample ID: F1H090481-002
Work Order: MLNH0
Matrix: WATER

Date Collected: 08/04/11 1040
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 81
Uranium 234	1.79		0.29	0.10	0.06	08/16/11	08/17/11
Uranium 235/236	0.114		0.073	0.100	0.066	08/16/11	08/17/11
Uranium 238	1.73		0.28	0.10	0.07	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001

Radiochemistry

Lab Sample ID: F1H090481-003
Work Order: MLHH1
Matrix: WATER

Date Collected: 08/04/11 1200
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 80
Uranium 234	2.62		0.37	0.10	0.05	08/16/11	08/17/11
Uranium 235/236	0.061		0.053	0.100	0.048	08/16/11	08/17/11
Uranium 238	1.26		0.23	0.10	0.05	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW190001

Radiochemistry

Lab Sample ID: F1H090481-004
Work Order: MLHH2
Matrix: WATER

Date Collected: 08/04/11 1330
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 74
Uranium 234	4.52		0.56	0.10	0.07	08/16/11	08/17/11
Uranium 235/236	0.27		0.12	0.10	0.03	08/16/11	08/17/11
Uranium 238	4.77		0.59	0.10	0.04	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090481-005
Work Order: MLHH8
Matrix: WATER

Date Collected: 08/04/11 0925
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 72
Uranium 234	12.5		1.3	0.1	0.03	08/16/11	08/17/11
Uranium 235/236	0.51		0.16	0.10	0.03	08/16/11	08/17/11
Uranium 238	11.6		1.2	0.1	0.04	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090481-006
Work Order: MLHJ6
Matrix: WATER

Date Collected: 08/04/11 1040
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 76
Uranium 234	1.74		0.29	0.10	0.04	08/16/11	08/17/11
Uranium 235/236	0.136		0.079	0.100	0.031	08/16/11	08/17/11
Uranium 238	1.64		0.28	0.10	0.02	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090481-007
Work Order: MLHJ7
Matrix: WATER

Date Collected: 08/04/11 1200
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 77
Uranium 234	2.67		0.38	0.10	0.02	08/16/11	08/17/11
Uranium 235/236	0.076		0.058	0.100	0.029	08/16/11	08/17/11
Uranium 238	1.40		0.25	0.10	0.02	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW190001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090481-008
Work Order: MLHKE
Matrix: WATER

Date Collected: 08/04/11 1330
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 73
Uranium 234	4.34		0.55	0.10	0.05	08/16/11	08/18/11
Uranium 235/236	0.192		0.097	0.100	0.033	08/16/11	08/18/11
Uranium 238	4.27		0.54	0.10	0.03	08/16/11	08/18/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H090481
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1228169		Yld % 93	F1H160000-169B
Uranium 234	0.013	U	0.022	0.100	0.035	08/16/11	08/17/11
Uranium 235/236	-0.0024	U	0.0047	0.100	0.043	08/16/11	08/17/11
Uranium 238	-0.0038	U	0.0054	0.100	0.040	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H090481
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/L		A-01-R MOD			F1H160000-169C
Uranium 234	3.27	3.26	0.42	0.04	85	100	(76 - 136)
Uranium 238	3.39	3.37	0.43	0.04	85	99	(76 - 134)
	Batch #:	1228169		Analysis Date:	08/17/11		

NOTE(S):

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1H090481
Matrix: WATER

Date Sampled: 08/05/11
Date Received: 08/06/11

Parameter	SAMPLE Result	Total Uncert. (2σ+/-)	% Yld	DUPLICATE Result	Total Uncert. (2 σ+/-)	% Yld	QC Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H090496-002**	
Uranium 234	24.3	2.3	54	24.3	2.3	59	0.2	%RPD
Uranium 235/236	1.03	0.27	54	1.27	0.29	59	21	%RPD
Uranium 238	24.8	2.4	54	23.2	2.2	59	7	%RPD
	Batch #:	1228169 (Sample)		1228169 (Duplicate)				

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

TestAmerica St. Louis

F1H090481

CLIENT ANALYSIS SUMMARY

Storage Loc: 2-9,R248/249,ME

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 8

Date Received: 2011-08-05

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A04DMW240001	140415		2011-08-04 / 925	MLHG0	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H090481

CLIENT ANALYSIS SUMMARY

Storage Loc: 2-9,R248/249,ME

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 8

Date Received: 2011-08-05

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

D	XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
S	XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A04AMW230001	140415		2011-08-04 / 1040	MLHH0	WATER

SAMPLE COMMENTS:

NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

F1H090481

CLIENT ANALYSIS SUMMARY

Storage Loc: 2-9,R248/249,ME

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-05

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

#SMPS in LOT: 8 | EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

	XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
	XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
	XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
S	XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
S	XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
S	XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
S	XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
S	XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
S	XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
X	XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
X	XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
X	XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
X	XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
X	XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
X	XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A04DMW713D0001	140415		2011-08-04 / 1200	MLHH1	WATER

SAMPLE COMMENTS:

	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H090481

CLIENT ANALYSIS SUMMARY

Storage Loc: 2-9,R248/249,ME

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 8

Date Received: 2011-08-05

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	A04BMW190001	140415		2011-08-04 / 1330	MLHH2	WATER

SAMPLE COMMENTS:

CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H090481

CLIENT ANALYSIS SUMMARY

Storage Loc: 2-9,R248/249,ME

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 8

Date Received: 2011-08-05

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium listead of 200.8

CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	A04DMW240001 DISSOLVED	140415		2011-08-04 / 925	MLHH8	WATER

SAMPLE COMMENTS:

TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	A04AMW230001 DISSOLVED	140415		2011-08-04 / 1040	MLHJ6	WATER

SAMPLE COMMENTS:

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	A04DMW713D0001 DISSOLVED	140415		2011-08-04 / 1200	MLHJ7	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H090481

CLIENT ANALYSIS SUMMARY

Storage Loc: R248/249,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 8

Date Received: 2011-08-05

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	A04BMW190001 DISSOLVED	140415		2011-08-04 / 1330	MLHKE	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

TestAmerica St. Louis

F1H090481

CLIENT ANALYSIS SUMMARY

Storage Loc: R248/249,METS

Project Manager: LMF Quote #: 89251 SDG:

Project: 140415 Guteryl Steel

PO#: 697886 Report to: Karl VanKeuren

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 8

Date Received: 2011-08-05

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
phone 314.298.8566 fax 314.298.8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/04/2011	COC No: 002
Shaw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
5050 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
Cincinnati, Ohio 45212	Calendar (C) or Work Days (W)			
(513) 782-4700 Phone	TAT if different from Below			SDG No.
(513) 782-4807 FAX	[X] 2 weeks STD			
Project Name: Former Guteri Specialty Steel Corporation FUSRA	[ ] 1 week			
Site: Lockport, NY	[ ] 2 days			
PO#	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions 500P	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
A04DMW240001 Total: 250P, 2XLP, 3X40 Diss: 250P 2XLP	8/4/2011	0925	Grab	GW	10	X		X	X	X	X	X	X	X					
A04AMW230001	8/4/2011	1040	Grab	GW	10	X		X	X	X	X	X	X	X	3X40				
A04DMW713D0001	8/4/2011	1200	Grab	GW	10	X		X	X	X	X	X	X	X	VOC				
A04BMW190001 250P, 2XLP	8/4/2011	1330	Grab	GW	7	X		X	X	X	X	X	X	X					No VOC ANALYSIS

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [X] Disposal By Lab [ ] Archive For _____ Months

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Kevin Cronin	Shaw E & I. Inc.	8/4/11 1630		BFLO	08-04-11 16:30
	BFLO	08-04-11 17:40		TAL	8/4/11 1740
	TAL	8/4/11 1750		TASL	8.5.11 0950

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F1H090481 TestAmerica St. Louis

CUR Form #: 0 5 2

CONDITION UPON RECEIPT FORM

Client: TA Buffalo - Shaw

Quote No: 89251

COC/RFA No: 002

Initiated By: SW Date: 8.5.11 Time: 0900

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*				Sample Temperature (s):**			
1.	4485 0258 2587	6.		1.	3	6.	
2.	2598	7.		2.	2	7.	
3.		8.		3.		8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Received bottles for Filtered metals, Iso4, & Total U - not on COC - log per LF AB 8-9-11

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/11/2011

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guteryl Steel

Lot #: F1H090496

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 24, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H090496

This report contains the analytical results for the six samples received under chain of custody by TestAmerica in St. Louis on August 6, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1222063
The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

Affected Samples:
F1H090496 (1): A04AMW603D0001
F1H090496 (2): A04AMW220001
F1H090496 (3): A04BMW180001
F1H090496 (4): A04AMW603D0001 DISSOLVED

Batch: 1222064
The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

The MSD recovery for Calcium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

Strontium was observed in the CCB above 3X the MDL. Associated samples which are either non-detect for the contaminant or exhibit concentrations greater than ten (10) times the concentrations observed in the CCB and does not require re-analysis.

Affected Samples:
F1H090496 (5): A04AMW22001 DISSOLVED
F1H090496 (6): A04BMW180001 DISSOLVED

Chloride (MCAWW 300.0A)

Batch: 1224124
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090496 (1): A04AMW603D0001
F1H090496 (2): A04AMW220001
F1H090496 (3): A04BMW180001

Sulfate (MCAWW 300.0A)

Batch: 1224129
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090496 (1): A04AMW603D0001
F1H090496 (2): A04AMW220001
F1H090496 (3): A04BMW180001

Fluoride (MCAWW 300.0A)

Batch: 1224125
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090496 (3): A04BMW180001

Nitrite as N (MCAWW 300.0A)

Batch: 1224127
The following samples were reported ND at dilution for Nitrite, due to interference with Chloride in the undiluted runs. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H090496 (1): A04AMW603D0001
F1H090496 (2): A04AMW220001
F1H090496 (3): A04BMW180001

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1224128
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H090496 (1): A04AMW603D0001
F1H090496 (2): A04AMW220001
F1H090496 (3): A04BMW180001

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H090496

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H090496

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLHLA	001	A04AMW603D0001	08/05/11	08:40
MLHLC	002	A04AMW220001	08/05/11	09:30
MLHLD	003	A04BMW180001	08/05/11	12:45
MLHLP	004	A04AMW603D0001 DISSOLVED	08/05/11	08:40
MLHLR	005	A04AMW22001 DISSOLVED	08/05/11	09:30
MLHL1	006	A04BMW180001 DISSOLVED	08/05/11	12:45

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001

GC/MS Volatiles

Lot-Sample #...: F1H090496-001 Work Order #...: MLHLA1AC Matrix.....: WATER
Date Sampled...: 08/05/11 08:40 Date Received..: 08/06/11
Prep Date.....: 08/11/11 Analysis Date..: 08/13/11
Prep Batch #...: 1224172 Analysis Time..: 00:12
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**0.95 J**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	**0.18 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.34 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**0.82 J,B**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001

GC/MS Volatiles

Lot-Sample #...: F1H090496-001 Work Order #...: MLHLA1AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	110	(85 - 115)
1,2-Dichloroethane-d4	109	(70 - 120)
4-Bromofluorobenzene	110	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001

TOTAL Metals

Lot-Sample #...: F1H090496-001 Matrix.....: WATER
Date Sampled...: 08/05/11 08:40 Date Received..: 08/06/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	11.1	1.0	ug/L	SW846 6020A	08/10-08/11/11	MLHLA1A5
		Dilution Factor: 1		Analysis Time..: 21:54		
Prep Batch #...: 1222063						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AF
		Dilution Factor: 1		Analysis Time..: 16:33		
Aluminum	200	200	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AG
		Dilution Factor: 1		Analysis Time..: 16:33		
Arsenic	12.9	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AE
		Dilution Factor: 1		Analysis Time..: 16:33		
Barium	73.6	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AH
		Dilution Factor: 1		Analysis Time..: 16:33		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AJ
		Dilution Factor: 1		Analysis Time..: 16:33		
Calcium	125000	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHLA1AK
		Dilution Factor: 5		Analysis Time..: 12:51		
Cadmium	3.8 J	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AL
		Dilution Factor: 1		Analysis Time..: 16:33		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AM
		Dilution Factor: 1		Analysis Time..: 16:33		
Chromium	11.3	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AN
		Dilution Factor: 1		Analysis Time..: 16:33		
Copper	5.2 J	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AP
		Dilution Factor: 1		Analysis Time..: 16:33		
Iron	50700	100	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AQ
		Dilution Factor: 1		Analysis Time..: 16:33		
Magnesium	47900	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AR
		Dilution Factor: 1		Analysis Time..: 10:59		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001

TOTAL Metals

Lot-Sample #...: F1H090496-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**207**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLA1AT**
		Dilution Factor: 1		Analysis Time..: 16:33		
Sodium	**30600**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLA1AU**
		Dilution Factor: 1		Analysis Time..: 10:59		
Nickel	**108**	**40.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLA1AV**
		Dilution Factor: 1		Analysis Time..: 16:33		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLA1AW
		Dilution Factor: 1		Analysis Time..: 18:45		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AX
		Dilution Factor: 1		Analysis Time..: 16:33		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLA1A0
		Dilution Factor: 1		Analysis Time..: 18:45		
Strontium	**478**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLA1A1**
		Dilution Factor: 5		Analysis Time..: 12:51		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1A2
		Dilution Factor: 1		Analysis Time..: 16:33		
Vanadium	**9.8 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLA1A3**
		Dilution Factor: 1		Analysis Time..: 16:33		
Zinc	**996**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLA1A4**
		Dilution Factor: 1		Analysis Time..: 16:33		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001

General Chemistry

Lot-Sample #...: F1H090496-001 Work Order #...: MLHLA Matrix.....: WATER
Date Sampled...: 08/05/11 08:40 Date Received..: 08/06/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	53.8	20.0	mg/L	MCAWW 300.0A	08/06/11	1224124
		Dilution Factor: 100		Analysis Time..: 08:05		
Fluoride	1.9	0.10	mg/L	MCAWW 300.0A	08/06/11	1224125
		Dilution Factor: 1		Analysis Time..: 07:36		
Nitrate	0.097	0.020	mg/L	MCAWW 300.0A	08/06/11	1224126
		Dilution Factor: 1		Analysis Time..: 07:36		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/06/11	1224127
		Dilution Factor: 5		Analysis Time..: 09:46		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/06/11	1224128
		Dilution Factor: 1		Analysis Time..: 07:36		
Sulfate	125	5.0	mg/L	MCAWW 300.0A	08/06/11	1224129
		Dilution Factor: 10		Analysis Time..: 07:50		
Total Alkalinity	350	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	692	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW220001

GC/MS Volatiles

Lot-Sample #...: F1H090496-002 Work Order #...: MLHLC1AN Matrix.....: WATER
Date Sampled...: 08/05/11 09:30 Date Received..: 08/06/11
Prep Date.....: 08/11/11 Analysis Date..: 08/12/11
Prep Batch #...: 1224172 Analysis Time..: 15:50
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**1.0 J**	**2.0**	**ug/L**
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**17**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**5.0**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**1.4 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.51 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**3.0 B**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**29**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**2.2**	**1.0**	**ug/L**
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW220001

GC/MS Volatiles

Lot-Sample #...: F1H090496-002 Work Order #...: MLHLC1AN Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	113	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
4-Bromofluorobenzene	111	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW220001

TOTAL Metals

Lot-Sample #...: F1H090496-002 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	**73.6**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHLC1AG**
		Dilution Factor: 1		Analysis Time..: 22:01		
Prep Batch #...: 1222063						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1AR
		Dilution Factor: 1		Analysis Time..: 16:40		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1AT
		Dilution Factor: 1		Analysis Time..: 16:40		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1AQ
		Dilution Factor: 1		Analysis Time..: 16:40		
Barium	**26.2 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLC1AU**
		Dilution Factor: 1		Analysis Time..: 16:40		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1AV
		Dilution Factor: 1		Analysis Time..: 16:40		
Calcium	**69700**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLC1AW**
		Dilution Factor: 5		Analysis Time..: 12:58		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1AX
		Dilution Factor: 1		Analysis Time..: 16:40		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1A0
		Dilution Factor: 1		Analysis Time..: 16:40		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1A1
		Dilution Factor: 1		Analysis Time..: 16:40		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1A2
		Dilution Factor: 1		Analysis Time..: 16:40		
Iron	**556**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLC1A3**
		Dilution Factor: 1		Analysis Time..: 16:40		
Magnesium	**24800**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLC1A4**
		Dilution Factor: 1		Analysis Time..: 11:06		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW220001

TOTAL Metals

Lot-Sample #...: F1H090496-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**90.9**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLC1A5**
		Dilution Factor: 1		Analysis Time..: 16:40		
Sodium	**39900**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLC1A6**
		Dilution Factor: 1		Analysis Time..: 11:06		
Nickel	**190**	**40.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLC1A7**
		Dilution Factor: 1		Analysis Time..: 16:40		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLC1A8
		Dilution Factor: 1		Analysis Time..: 18:51		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1A9
		Dilution Factor: 1		Analysis Time..: 16:40		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLC1AA
		Dilution Factor: 1		Analysis Time..: 18:51		
Strontium	**350**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLC1AC**
		Dilution Factor: 5		Analysis Time..: 12:58		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1AD
		Dilution Factor: 1		Analysis Time..: 16:40		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1AE
		Dilution Factor: 1		Analysis Time..: 16:40		
Zinc	**10.7 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLC1AF**
		Dilution Factor: 1		Analysis Time..: 16:40		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW220001

General Chemistry

Lot-Sample #...: F1H090496-002 Work Order #...: MLHLC Matrix.....: WATER
Date Sampled...: 08/05/11 09:30 Date Received..: 08/06/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	34.4	2.0	mg/L	MCAWW 300.0A	08/06/11	1224124
		Dilution Factor: 10		Analysis Time..: 02:33		
Fluoride	1.5	0.10	mg/L	MCAWW 300.0A	08/06/11	1224125
		Dilution Factor: 1		Analysis Time..: 02:19		
Nitrate	0.099	0.020	mg/L	MCAWW 300.0A	08/06/11	1224126
		Dilution Factor: 1		Analysis Time..: 02:19		
Nitrite	ND	0.020	mg/L	MCAWW 300.0A	08/06/11	1224127
		Dilution Factor: 1		Analysis Time..: 02:19		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/06/11	1224128
		Dilution Factor: 1		Analysis Time..: 02:19		
Sulfate	40.7	5.0	mg/L	MCAWW 300.0A	08/06/11	1224129
		Dilution Factor: 10		Analysis Time..: 02:33		
Total Alkalinity	252	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	387	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW180001

TOTAL Metals

Lot-Sample #...: F1H090496-003 Matrix.....: WATER
Date Sampled...: 08/05/11 12:45 Date Received..: 08/06/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	**123**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHLD1AG**
		Dilution Factor: 1		Analysis Time..: 22:28		
Prep Batch #...: 1222063						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1AR
		Dilution Factor: 1		Analysis Time..: 17:05		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1AT
		Dilution Factor: 1		Analysis Time..: 17:05		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1AQ
		Dilution Factor: 1		Analysis Time..: 17:05		
Barium	**68.3**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLD1AU**
		Dilution Factor: 1		Analysis Time..: 17:05		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1AV
		Dilution Factor: 1		Analysis Time..: 17:05		
Calcium	**64200**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLD1AW**
		Dilution Factor: 5		Analysis Time..: 13:23		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1AX
		Dilution Factor: 1		Analysis Time..: 17:05		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1A0
		Dilution Factor: 1		Analysis Time..: 17:05		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1A1
		Dilution Factor: 1		Analysis Time..: 17:05		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1A2
		Dilution Factor: 1		Analysis Time..: 17:05		
Iron	**37.4 J**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLD1A3**
		Dilution Factor: 1		Analysis Time..: 17:05		
Magnesium	**37200**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLD1A4**
		Dilution Factor: 1		Analysis Time..: 11:31		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW180001

TOTAL Metals

Lot-Sample #...: F1H090496-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**396**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLD1A5**
		Dilution Factor: 1		Analysis Time..: 17:05		
Sodium	**122000**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLD1A6**
		Dilution Factor: 5		Analysis Time..: 13:23		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1A7
		Dilution Factor: 1		Analysis Time..: 17:05		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLD1A8
		Dilution Factor: 1		Analysis Time..: 19:17		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1A9
		Dilution Factor: 1		Analysis Time..: 17:05		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLD1AA
		Dilution Factor: 1		Analysis Time..: 19:17		
Strontium	**187**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLD1AC**
		Dilution Factor: 5		Analysis Time..: 13:23		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1AD
		Dilution Factor: 1		Analysis Time..: 17:05		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1AE
		Dilution Factor: 1		Analysis Time..: 17:05		
Zinc	**177**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLD1AF**
		Dilution Factor: 1		Analysis Time..: 17:05		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW180001

General Chemistry

Lot-Sample #...: F1H090496-003 Work Order #...: MLHLD Matrix.....: WATER
Date Sampled...: 08/05/11 12:45 Date Received..: 08/06/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	89.9	20.0	mg/L	MCAWW 300.0A	08/06/11	1224124
		Dilution Factor: 100		Analysis Time..: 06:53		
Fluoride	2.6	1.0	mg/L	MCAWW 300.0A	08/06/11	1224125
		Dilution Factor: 10		Analysis Time..: 06:38		
Nitrate	0.0076 B	0.020	mg/L	MCAWW 300.0A	08/06/11	1224126
		Dilution Factor: 1		Analysis Time..: 06:24		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/06/11	1224127
		Dilution Factor: 5		Analysis Time..: 09:31		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/06/11	1224128
		Dilution Factor: 1		Analysis Time..: 06:24		
Sulfate	47.8	5.0	mg/L	MCAWW 300.0A	08/06/11	1224129
		Dilution Factor: 10		Analysis Time..: 06:38		
Total Alkalinity	381	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	619	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090496-004 Matrix.....: WATER
Date Sampled...: 08/05/11 08:40 Date Received..: 08/06/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	**8.2**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHLP1A2**
		Dilution Factor: 1		Analysis Time..: 22:34		
Prep Batch #...: 1222063						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AC
		Dilution Factor: 1		Analysis Time..: 17:12		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AD
		Dilution Factor: 1		Analysis Time..: 17:12		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AA
		Dilution Factor: 1		Analysis Time..: 17:12		
Barium	**30.7 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLP1AE**
		Dilution Factor: 1		Analysis Time..: 17:12		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AF
		Dilution Factor: 1		Analysis Time..: 17:12		
Calcium	**129000**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLP1AG**
		Dilution Factor: 5		Analysis Time..: 13:29		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AH
		Dilution Factor: 1		Analysis Time..: 17:12		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AJ
		Dilution Factor: 1		Analysis Time..: 17:12		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AK
		Dilution Factor: 1		Analysis Time..: 17:12		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AL
		Dilution Factor: 1		Analysis Time..: 17:12		
Iron	**932**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLP1AM**
		Dilution Factor: 1		Analysis Time..: 17:12		
Magnesium	**46500**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLP1AN**
		Dilution Factor: 1		Analysis Time..: 11:37		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090496-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	125	15.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AP
		Dilution Factor: 1		Analysis Time..: 17:12		
Sodium	30900	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AQ
		Dilution Factor: 1		Analysis Time..: 11:37		
Nickel	70.8	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AR
		Dilution Factor: 1		Analysis Time..: 17:12		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLP1AT
		Dilution Factor: 1		Analysis Time..: 19:23		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AU
		Dilution Factor: 1		Analysis Time..: 17:12		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLP1AV
		Dilution Factor: 1		Analysis Time..: 19:23		
Strontium	478	25.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLP1AW
		Dilution Factor: 5		Analysis Time..: 13:29		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AX
		Dilution Factor: 1		Analysis Time..: 17:12		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1A0
		Dilution Factor: 1		Analysis Time..: 17:12		
Zinc	134	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1A1
		Dilution Factor: 1		Analysis Time..: 17:12		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW22001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090496-005 Matrix.....: WATER
Date Sampled...: 08/05/11 09:30 Date Received..: 08/06/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	**65.1**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHLR1AD**
		Dilution Factor: 1		Analysis Time..: 22:54		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AG
		Dilution Factor: 1		Analysis Time..: 17:44		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AH
		Dilution Factor: 1		Analysis Time..: 17:44		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AF
		Dilution Factor: 1		Analysis Time..: 17:44		
Barium	**36.4 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLR1AJ**
		Dilution Factor: 1		Analysis Time..: 17:44		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AK
		Dilution Factor: 1		Analysis Time..: 17:44		
Calcium	**74200**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLR1AL**
		Dilution Factor: 5		Analysis Time..: 14:00		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AM
		Dilution Factor: 1		Analysis Time..: 17:44		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AN
		Dilution Factor: 1		Analysis Time..: 17:44		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AP
		Dilution Factor: 1		Analysis Time..: 17:44		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AQ
		Dilution Factor: 1		Analysis Time..: 17:44		
Iron	**962**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLR1AR**
		Dilution Factor: 1		Analysis Time..: 17:44		
Magnesium	**24800**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLR1AT**
		Dilution Factor: 1		Analysis Time..: 12:09		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW22001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090496-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	117	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLR1AU**
		Dilution Factor: 1		Analysis Time..: 17:44		
Sodium	**36000 B**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLR1AV**
		Dilution Factor: 1		Analysis Time..: 12:09		
Nickel	132	**40.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLR1AW**
		Dilution Factor: 1		Analysis Time..: 17:44		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLR1AX
		Dilution Factor: 1		Analysis Time..: 19:55		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1A0
		Dilution Factor: 1		Analysis Time..: 17:44		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLR1A1
		Dilution Factor: 1		Analysis Time..: 19:55		
Strontium	384	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLR1A2**
		Dilution Factor: 5		Analysis Time..: 14:00		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1A3
		Dilution Factor: 1		Analysis Time..: 17:44		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AA
		Dilution Factor: 1		Analysis Time..: 17:44		
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AC
		Dilution Factor: 1		Analysis Time..: 17:44		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW180001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090496-006 **Matrix.....:** WATER
Date Sampled...: 08/05/11 12:45 **Date Received..:** 08/06/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	**125**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHL11AD**
		Dilution Factor: 1		Analysis Time..: 23:34		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AG
		Dilution Factor: 1		Analysis Time..: 18:10		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AH
		Dilution Factor: 1		Analysis Time..: 18:10		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AF
		Dilution Factor: 1		Analysis Time..: 18:10		
Barium	**67.6**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHL11AJ**
		Dilution Factor: 1		Analysis Time..: 18:10		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AK
		Dilution Factor: 1		Analysis Time..: 18:10		
Calcium	**63800**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHL11AL**
		Dilution Factor: 5		Analysis Time..: 14:26		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AM
		Dilution Factor: 1		Analysis Time..: 18:10		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AN
		Dilution Factor: 1		Analysis Time..: 18:10		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AP
		Dilution Factor: 1		Analysis Time..: 18:10		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AQ
		Dilution Factor: 1		Analysis Time..: 18:10		
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AR
		Dilution Factor: 1		Analysis Time..: 18:10		
Magnesium	**37400**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHL11AT**
		Dilution Factor: 1		Analysis Time..: 12:34		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW180001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090496-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**393**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHL11AU**
		Dilution Factor: 1		Analysis Time..: 18:10		
Sodium	**124000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHL11AV**
		Dilution Factor: 5		Analysis Time..: 14:26		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AW
		Dilution Factor: 1		Analysis Time..: 18:10		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHL11AX
		Dilution Factor: 1		Analysis Time..: 20:21		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11A0
		Dilution Factor: 1		Analysis Time..: 18:10		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHL11A1
		Dilution Factor: 1		Analysis Time..: 20:21		
Strontium	**193**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHL11A2**
		Dilution Factor: 5		Analysis Time..: 14:26		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11A3
		Dilution Factor: 1		Analysis Time..: 18:10		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AA
		Dilution Factor: 1		Analysis Time..: 18:10		
Zinc	**180**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHL11AC**
		Dilution Factor: 1		Analysis Time..: 18:10		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090496 **Work Order #...:** MLL8H1AA **Matrix.....:** WATER
MB Lot-Sample #: F1H120000-172

Prep Date.....: 08/11/11 **Analysis Time..:** 15:24
Analysis Date..: 08/12/11 **Prep Batch #...:** 1224172
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	**0.54 J**	**1.0**	**ug/L**	**SW846 8260B**
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	**0.33 J**	**1.0**	**ug/L**	**SW846 8260B**
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	105	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090496 Work Order #...: MLL8H1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	103	(70 - 120)		
4-Bromofluorobenzene	108	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H100000-061 **Prep Batch #...:** 1222061						
Uranium	ND	1.0	ug/L	SW846 6020A	08/10-08/11/11	MLH641AA
		Dilution Factor: 1				
		Analysis Time..: 20:34				
MB Lot-Sample #: F1H100000-062 **Prep Batch #...:** 1222062						
Uranium	ND	1.0	ug/L	SW846 6020A	08/10-08/11/11	MLH661AA
		Dilution Factor: 1				
		Analysis Time..: 22:41				
MB Lot-Sample #: F1H100000-063 **Prep Batch #...:** 1222063						
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLH681AD
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AU
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AA
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Barium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AE
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AF
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AH
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Calcium	ND	1000	ug/L	SW846 6010C	08/10-08/16/11	MLH681AG
		Dilution Factor: 1				
		Analysis Time..: 11:29				
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AK
		Dilution Factor: 1				
		Analysis Time..: 15:09				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AJ
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AL
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLH681AM
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLH681AT
		Dilution Factor: 1				
		Analysis Time..: 17:21				
Magnesium	ND	1000	ug/L	SW846 6010C	08/10-08/12/11	MLH681AN
		Dilution Factor: 1				
		Analysis Time..: 09:37				
Manganese	ND	15.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AP
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AR
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLH681AV
		Dilution Factor: 1				
		Analysis Time..: 17:21				
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AC
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Sodium	ND	1000	ug/L	SW846 6010C	08/10-08/12/11	MLH681AQ
		Dilution Factor: 1				
		Analysis Time..: 09:37				
Strontium	ND	5.0	ug/L	SW846 6010C	08/10-08/16/11	MLH681AW
		Dilution Factor: 1				
		Analysis Time..: 11:29				
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AX
		Dilution Factor: 1				
		Analysis Time..: 15:09				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681A0
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681A1
		Dilution Factor: 1				
		Analysis Time..: 15:09				

MB Lot-Sample #: F1H100000-064 **Prep Batch #...:** 1222064

Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AF
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AW
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AD
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Barium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AG
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AH
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AK
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Calcium	ND	1000	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1AJ
		Dilution Factor: 1				
		Analysis Time..: 13:48				
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AM
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AL
		Dilution Factor: 1				
		Analysis Time..: 17:31				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AN
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AP
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1AV
		Dilution Factor: 1				
		Analysis Time..: 19:43				
Magnesium	ND	1000	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AQ
		Dilution Factor: 1				
		Analysis Time..: 11:56				
Manganese	ND	15.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AR
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AU
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1AX
		Dilution Factor: 1				
		Analysis Time..: 19:43				
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AE
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Sodium	**458 J**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLH7A1AT**
		Dilution Factor: 1				
		Analysis Time..: 11:56				
Strontium	ND	5.0	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1A0
		Dilution Factor: 1				
		Analysis Time..: 13:48				
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1A1
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AA
		Dilution Factor: 1				
		Analysis Time..: 17:31				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090496 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AC

Dilution Factor: 1
Analysis Time..: 17:31

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H090496 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLPHM1AA		MB Lot-Sample #:	F1H120000-124	
	ND	0.20	mg/L	MCAWW 300.0A	08/06/11	1224124
		Dilution Factor: 1				
		Analysis Time..: 12:09				
Fluoride		Work Order #: MLPHQ1AA		MB Lot-Sample #:	F1H120000-125	
	ND	0.10	mg/L	MCAWW 300.0A	08/06/11	1224125
		Dilution Factor: 1				
		Analysis Time..: 12:09				
Nitrate		Work Order #: MLPHR1AA		MB Lot-Sample #:	F1H120000-126	
	ND	0.020	mg/L	MCAWW 300.0A	08/06/11	1224126
		Dilution Factor: 1				
		Analysis Time..: 12:09				
Nitrite		Work Order #: MLPHW1AA		MB Lot-Sample #:	F1H120000-127	
	ND	0.020	mg/L	MCAWW 300.0A	08/06/11	1224127
		Dilution Factor: 1				
		Analysis Time..: 12:09				
Phosphate as P, Ortho		Work Order #: MLPHX1AA		MB Lot-Sample #:	F1H120000-128	
	ND	0.50	mg/L	MCAWW 300.0A	08/06/11	1224128
		Dilution Factor: 1				
		Analysis Time..: 12:09				
Sulfate		Work Order #: MLPH01AA		MB Lot-Sample #:	F1H120000-129	
	ND	0.50	mg/L	MCAWW 300.0A	08/06/11	1224129
		Dilution Factor: 1				
		Analysis Time..: 12:09				
Total Alkalinity		Work Order #: MLRFM1AA		MB Lot-Sample #:	F1H170000-090	
	ND	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLRAM1AA		MB Lot-Sample #:	F1H120000-098	
	ND	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090496 Work Order #...: MLL8H1AC Matrix.....: WATER
LCS Lot-Sample#: F1H120000-172
Prep Date.....: 08/11/11 Analysis Date..: 08/12/11
Prep Batch #...: 1224172 Analysis Time..: 14:31
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
cis-1,3-Dichloropropene	104	(70 - 130)	SW846 8260B
Dibromochloromethane	103	(60 - 135)	SW846 8260B
Vinyl chloride	87	(50 - 145)	SW846 8260B
Bromomethane	90	(30 - 145)	SW846 8260B
Chloroethane	87	(60 - 135)	SW846 8260B
Acetone	104	(40 - 140)	SW846 8260B
1,1-Dichloroethene	85	(70 - 130)	SW846 8260B
Methylene chloride	93	(55 - 140)	SW846 8260B
Carbon disulfide	80	(35 - 160)	SW846 8260B
1,1-Dichloroethane	95	(70 - 135)	SW846 8260B
2-Butanone	99	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	99	(85 - 115)	SW846 8260B
Chloroform	94	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	96	(65 - 130)	SW846 8260B
Carbon tetrachloride	98	(65 - 140)	SW846 8260B
1,2-Dichloroethane	95	(70 - 130)	SW846 8260B
Benzene	98	(80 - 120)	SW846 8260B
Trichloroethene	93	(70 - 125)	SW846 8260B
1,2-Dichloropropane	96	(75 - 125)	SW846 8260B
Bromodichloromethane	98	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	98	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	102	(55 - 140)	SW846 8260B
Toluene	102	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	104	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	98	(75 - 125)	SW846 8260B
2-Hexanone	101	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	108	(60 - 135)	SW846 8260B
Chlorobenzene	98	(80 - 120)	SW846 8260B
Bromoform	108	(70 - 130)	SW846 8260B
Ethylbenzene	101	(75 - 125)	SW846 8260B
Styrene	108	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	99	(65 - 130)	SW846 8260B
Tetrachloroethene	105	(45 - 150)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090496 **Work Order #...:** MLL8H1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H120000-172

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichlorobenzene	**100**	**(70 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
1,2-Dichloroethane-d4	101	(70 - 120)
4-Bromofluorobenzene	105	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H100000-061 **Prep Batch #...:** 1222061					
Uranium	104	(80 - 120)	SW846 6020A	08/10-08/11/11	MLH641AC
		Dilution Factor: 1	Analysis Time..: 20:41		
LCS Lot-Sample#: F1H100000-062 **Prep Batch #...:** 1222062					
Uranium	105	(80 - 120)	SW846 6020A	08/10-08/11/11	MLH661AC
		Dilution Factor: 1	Analysis Time..: 22:47		
LCS Lot-Sample#: F1H100000-063 **Prep Batch #...:** 1222063					
Arsenic	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A2
		Dilution Factor: 1	Analysis Time..: 15:16		
Silver	96	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A3
		Dilution Factor: 1	Analysis Time..: 15:16		
Aluminum	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A4
		Dilution Factor: 1	Analysis Time..: 15:16		
Barium	110	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A5
		Dilution Factor: 1	Analysis Time..: 15:16		
Beryllium	117	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A6
		Dilution Factor: 1	Analysis Time..: 15:16		
Calcium	105	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681A7
		Dilution Factor: 1	Analysis Time..: 11:36		
Cadmium	110	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A8
		Dilution Factor: 1	Analysis Time..: 15:16		
Cobalt	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A9
		Dilution Factor: 1	Analysis Time..: 15:16		
Chromium	107	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CA
		Dilution Factor: 1	Analysis Time..: 15:16		
Copper	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CC
		Dilution Factor: 1	Analysis Time..: 15:16		

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	110	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CD
		Dilution Factor: 1	Analysis Time..: 15:16		
Magnesium	103	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CE
		Dilution Factor: 1	Analysis Time..: 09:44		
Manganese	109	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CF
		Dilution Factor: 1	Analysis Time..: 15:16		
Sodium	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CG
		Dilution Factor: 1	Analysis Time..: 09:44		
Nickel	107	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CH
		Dilution Factor: 1	Analysis Time..: 15:16		
Lead	101	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681CJ
		Dilution Factor: 1	Analysis Time..: 17:27		
Antimony	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CK
		Dilution Factor: 1	Analysis Time..: 15:16		
Selenium	104	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681CL
		Dilution Factor: 1	Analysis Time..: 17:27		
Strontium	102	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681CM
		Dilution Factor: 1	Analysis Time..: 11:36		
Thallium	104	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CN
		Dilution Factor: 1	Analysis Time..: 15:16		
Vanadium	107	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CP
		Dilution Factor: 1	Analysis Time..: 15:16		
Zinc	115	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CQ
		Dilution Factor: 1	Analysis Time..: 15:16		
LCS Lot-Sample#: F1H100000-064 **Prep Batch #...:** 1222064					
Vanadium	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A2
		Dilution Factor: 1	Analysis Time..: 17:38		
Zinc	114	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A3
		Dilution Factor: 1	Analysis Time..: 17:38		

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Arsenic	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A4
		Dilution Factor: 1	Analysis Time..: 17:38		
Silver	95	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A5
		Dilution Factor: 1	Analysis Time..: 17:38		
Aluminum	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A6
		Dilution Factor: 1	Analysis Time..: 17:38		
Barium	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A7
		Dilution Factor: 1	Analysis Time..: 17:38		
Beryllium	113	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A8
		Dilution Factor: 1	Analysis Time..: 17:38		
Calcium	108	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1A9
		Dilution Factor: 1	Analysis Time..: 13:54		
Cadmium	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CA
		Dilution Factor: 1	Analysis Time..: 17:38		
Cobalt	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CC
		Dilution Factor: 1	Analysis Time..: 17:38		
Chromium	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CD
		Dilution Factor: 1	Analysis Time..: 17:38		
Copper	103	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CE
		Dilution Factor: 1	Analysis Time..: 17:38		
Iron	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CF
		Dilution Factor: 1	Analysis Time..: 17:38		
Magnesium	101	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CG
		Dilution Factor: 1	Analysis Time..: 12:02		
Manganese	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CH
		Dilution Factor: 1	Analysis Time..: 17:38		
Sodium	109	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CJ
		Dilution Factor: 1	Analysis Time..: 12:02		
Nickel	104	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CK
		Dilution Factor: 1	Analysis Time..: 17:38		

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Lead	101	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1CL
		Dilution Factor: 1	Analysis Time..: 19:49		
Antimony	102	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CM
		Dilution Factor: 1	Analysis Time..: 17:38		
Selenium	102	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1CN
		Dilution Factor: 1	Analysis Time..: 19:49		
Strontium	105	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1CP
		Dilution Factor: 1	Analysis Time..: 13:54		
Thallium	103	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CQ
		Dilution Factor: 1	Analysis Time..: 17:38		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLPHM1AC	LCS Lot-Sample#: F1H120000-124		
	92	(90 - 110)	MCAWW 300.0A	08/06/11	1224124
		Dilution Factor: 1	Analysis Time..: 11:54		
Fluoride		Work Order #: MLPHQ1AC	LCS Lot-Sample#: F1H120000-125		
	95	(90 - 110)	MCAWW 300.0A	08/06/11	1224125
		Dilution Factor: 1	Analysis Time..: 11:54		
Nitrate		Work Order #: MLPHR1AC	LCS Lot-Sample#: F1H120000-126		
	99	(90 - 110)	MCAWW 300.0A	08/06/11	1224126
		Dilution Factor: 1	Analysis Time..: 11:54		
Nitrite		Work Order #: MLPHW1AC	LCS Lot-Sample#: F1H120000-127		
	99	(90 - 110)	MCAWW 300.0A	08/06/11	1224127
		Dilution Factor: 1	Analysis Time..: 11:54		
Phosphate as P, Ortho		Work Order #: MLPHX1AC	LCS Lot-Sample#: F1H120000-128		
	96	(90 - 110)	MCAWW 300.0A	08/06/11	1224128
		Dilution Factor: 1	Analysis Time..: 11:54		
Sulfate		Work Order #: MLPH01AC	LCS Lot-Sample#: F1H120000-129		
	96	(90 - 110)	MCAWW 300.0A	08/06/11	1224129
		Dilution Factor: 1	Analysis Time..: 11:54		
Total Alkalinity		Work Order #: MLRFM1AC	LCS Lot-Sample#: F1H170000-090		
	92	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLRFM1AD	LCS Lot-Sample#: F1H170000-090		
	93	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLRAM1AC	LCS Lot-Sample#: F1H120000-098		
	100	(90 - 113)	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090496 Work Order #...: MLHLC1DN-MS Matrix.....: WATER
MS Lot-Sample #: F1H090496-002 MLHLC1DP-MSD
Date Sampled...: 08/05/11 09:30 Date Received..: 08/06/11
Prep Date.....: 08/11/11 Analysis Date..: 08/12/11
Prep Batch #...: 1224172 Analysis Time..: 16:17
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	103	(70 - 130)			SW846 8260B
	102	(70 - 130)	0.97	(0-20)	SW846 8260B
Dibromochloromethane	104	(60 - 135)			SW846 8260B
	101	(60 - 135)	2.6	(0-20)	SW846 8260B
Vinyl chloride	88	(50 - 145)			SW846 8260B
	91	(50 - 145)	2.8	(0-20)	SW846 8260B
Bromomethane	76	(30 - 145)			SW846 8260B
	81	(30 - 145)	5.8	(0-20)	SW846 8260B
Chloroethane	88	(60 - 135)			SW846 8260B
	88	(60 - 135)	0.18	(0-20)	SW846 8260B
Acetone	110	(40 - 140)			SW846 8260B
	99	(40 - 140)	10	(0-20)	SW846 8260B
1,1-Dichloroethene	87	(70 - 130)			SW846 8260B
	91	(70 - 130)	2.6	(0-20)	SW846 8260B
Methylene chloride	90	(55 - 140)			SW846 8260B
	85	(55 - 140)	6.0	(0-20)	SW846 8260B
Carbon disulfide	81	(35 - 160)			SW846 8260B
	80	(35 - 160)	0.67	(0-20)	SW846 8260B
1,1-Dichloroethane	104	(70 - 135)			SW846 8260B
	94	(70 - 135)	3.6	(0-20)	SW846 8260B
2-Butanone	112	(30 - 150)			SW846 8260B
	98	(30 - 150)	14	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	100	(85 - 115)			SW846 8260B
	97	(85 - 115)	2.7	(0-20)	SW846 8260B
Chloroform	96	(65 - 135)			SW846 8260B
	93	(65 - 135)	3.8	(0-20)	SW846 8260B
1,1,1-Trichloroethane	114	(65 - 130)			SW846 8260B
	106	(65 - 130)	2.2	(0-20)	SW846 8260B
Carbon tetrachloride	97	(65 - 140)			SW846 8260B
	96	(65 - 140)	1.1	(0-20)	SW846 8260B
1,2-Dichloroethane	102	(70 - 130)			SW846 8260B
	95	(70 - 130)	7.1	(0-20)	SW846 8260B
Benzene	99	(80 - 120)			SW846 8260B
	98	(80 - 120)	1.2	(0-20)	SW846 8260B
Trichloroethene	94	(70 - 125)			SW846 8260B
	92	(70 - 125)	1.9	(0-20)	SW846 8260B
1,2-Dichloropropane	97	(75 - 125)			SW846 8260B
	99	(75 - 125)	1.2	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090496 Work Order #...: MLHLC1DN-MS Matrix.....: WATER
MS Lot-Sample #: F1H090496-002 MLHLC1DP-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	101	(75 - 120)			SW846 8260B
	97	(75 - 120)	3.7	(0-20)	SW846 8260B
1,1,2-Trichloroethane	102	(75 - 125)			SW846 8260B
	98	(75 - 125)	3.7	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	106	(55 - 140)			SW846 8260B
	104	(55 - 140)	2.5	(0-20)	SW846 8260B
Toluene	103	(75 - 120)			SW846 8260B
	103	(75 - 120)	0.48	(0-20)	SW846 8260B
1,3-Dichlorobenzene	102	(75 - 125)			SW846 8260B
	101	(75 - 125)	0.78	(0-20)	SW846 8260B
1,4-Dichlorobenzene	97	(75 - 125)			SW846 8260B
	95	(75 - 125)	2.4	(0-20)	SW846 8260B
2-Hexanone	111	(55 - 130)			SW846 8260B
	101	(55 - 130)	10	(0-20)	SW846 8260B
4-Methyl-2-pentanone	114	(60 - 135)			SW846 8260B
	104	(60 - 135)	8.8	(0-20)	SW846 8260B
Chlorobenzene	98	(80 - 120)			SW846 8260B
	96	(80 - 120)	2.0	(0-20)	SW846 8260B
Bromoform	111	(70 - 130)			SW846 8260B
	104	(70 - 130)	7.4	(0-20)	SW846 8260B
Ethylbenzene	101	(75 - 125)			SW846 8260B
	103	(75 - 125)	1.8	(0-20)	SW846 8260B
Styrene	112	(65 - 135)			SW846 8260B
	111	(65 - 135)	0.89	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	101	(65 - 130)			SW846 8260B
	91	(65 - 130)	10	(0-20)	SW846 8260B
Tetrachloroethene	99	(45 - 150)			SW846 8260B
	98	(45 - 150)	0.93	(0-20)	SW846 8260B
1,2-Dichlorobenzene	100	(70 - 120)			SW846 8260B
	97	(70 - 120)	3.0	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
	108	(85 - 120)
Dibromofluoromethane	110	(85 - 115)
	104	(85 - 115)
1,2-Dichloroethane-d4	105	(70 - 120)
	99	(70 - 120)
4-Bromofluorobenzene	104	(75 - 120)
	100	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H090496-002 **Prep Batch #...:** 1222061							
Uranium	105	(80 - 120)			SW846 6020A	08/10-08/11/11	MLHLC1DG
	108	(80 - 120)	2.6	(0-20)	SW846 6020A	08/10-08/11/11	MLHLC1DH
		Dilution Factor: 1					
		Analysis Time..: 22:14					
MS Lot-Sample #: F1H090496-002 **Prep Batch #...:** 1222063							
Aluminum	104	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DW
	105	(80 - 120)	1.0	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DX
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Antimony	105	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1C3
	105	(80 - 120)	0.51	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1C4
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Arsenic	105	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DR
	105	(80 - 120)	0.50	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DT
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Barium	107	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1D0
	108	(80 - 120)	0.87	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1D1
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Beryllium	111	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1D2
	111	(80 - 120)	0.61	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1D3
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Cadmium	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1D6
	103	(80 - 120)	0.81	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1D7
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Calcium	117	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1D4
	100	(80 - 120)	2.1	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1D5
		Dilution Factor: 5					
		Analysis Time..: 13:04					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CJ
	101	(80 - 120)	0.85	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CK
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Cobalt	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CG
	99	(80 - 120)	0.69	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CH
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Copper	101	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CL
	102	(80 - 120)	0.89	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CM
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Iron	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CN
	104	(80 - 120)	0.78	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CP
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Lead	99	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1C1
	100	(80 - 120)	0.47	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1C2
		Dilution Factor: 1					
		Analysis Time..: 18:58					
Magnesium	99	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CQ
	99	(80 - 120)	0.25	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CR
		Dilution Factor: 1					
		Analysis Time..: 11:12					
Manganese	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CT
	103	(80 - 120)	0.71	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CU
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Nickel	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CX
	99	(80 - 120)	0.95	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1C0
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Selenium	103	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1C5
	105	(80 - 120)	1.2	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1C6
		Dilution Factor: 1					
		Analysis Time..: 18:58					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	93	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DU
	94	(80 - 120)	1.2	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DV
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Sodium	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CV
	102	(80 - 120)	0.41	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CW
		Dilution Factor: 1					
		Analysis Time..: 11:12					
Strontium	105	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1C7
	103	(80 - 120)	1.3	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1C8
		Dilution Factor: 5					
		Analysis Time..: 13:04					
Thallium	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1C9
	99	(80 - 120)	0.97	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DA
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Vanadium	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DC
	103	(80 - 120)	0.76	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DD
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Zinc	108	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DE
	110	(80 - 120)	1.4	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DF
		Dilution Factor: 1					
		Analysis Time..: 16:46					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H090496-005 **Prep Batch #...:** 1222062							
Uranium	106	(80 - 120)			SW846 6020A	08/10-08/11/11	MLHLR1CH
	106	(80 - 120)	0.30	(0-20)	SW846 6020A	08/10-08/11/11	MLHLR1CJ
		Dilution Factor: 1					
		Analysis Time..: 23:21					
MS Lot-Sample #: F1H090496-005 **Prep Batch #...:** 1222064							
Aluminum	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CQ
	103	(80 - 120)	0.16	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CR
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Antimony	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1A4
	108	(80 - 120)	4.8	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1A5
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Arsenic	105	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CL
	105	(80 - 120)	0.04	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CM
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Barium	104	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CT
	105	(80 - 120)	0.57	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CU
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Beryllium	108	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CV
	109	(80 - 120)	0.74	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CW
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Cadmium	104	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C1
	103	(80 - 120)	0.65	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C2
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Calcium	96	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1CX
	122 N	(80 - 120)	3.1	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1C0
		Dilution Factor: 5					
		Analysis Time..: 14:07					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C5
	100	(80 - 120)	0.11	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C6
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Cobalt	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C3
	99	(80 - 120)	0.16	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C4
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Copper	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C7
	100	(80 - 120)	0.65	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C8
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Iron	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C9
	103	(80 - 120)	0.24	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DA
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Lead	99	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1DL
	100	(80 - 120)	0.14	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1DM
		Dilution Factor: 1					
		Analysis Time..: 20:02					
Magnesium	99	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DC
	98	(80 - 120)	0.17	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DD
		Dilution Factor: 1					
		Analysis Time..: 12:15					
Manganese	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DE
	103	(80 - 120)	0.17	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DF
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Nickel	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DJ
	99	(80 - 120)	0.56	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DK
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Selenium	104	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1A6
	104	(80 - 120)	0.18	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1A7
		Dilution Factor: 1					
		Analysis Time..: 20:02					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	91	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CN
	92	(80 - 120)	1.3	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CP
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Sodium	101	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DG
	99	(80 - 120)	0.59	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DH
		Dilution Factor: 1					
		Analysis Time..: 12:15					
Strontium	109	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1A8
	115	(80 - 120)	3.5	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1A9
		Dilution Factor: 5					
		Analysis Time..: 14:07					
Thallium	99	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CA
	99	(80 - 120)	0.02	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CC
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Vanadium	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CD
	102	(80 - 120)	0.0	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CE
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Zinc	112	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CF
	111	(80 - 120)	0.85	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CG
		Dilution Factor: 1					
		Analysis Time..: 17:50					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090496 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLHLC1DJ		MS Lot-Sample #:	F1H090496-002
	107	(90 - 110)	MCAWW 300.0A	08/06/11	1224124
		Dilution Factor: 10	Analysis Time..: 02:33		
Fluoride		Work Order #...: MLHLC1DK		MS Lot-Sample #:	F1H090496-002
	102	(90 - 110)	MCAWW 300.0A	08/06/11	1224125
		Dilution Factor: 1	Analysis Time..: 02:19		
Nitrate		Work Order #...: MLHLC1DL		MS Lot-Sample #:	F1H090496-002
	99	(90 - 110)	MCAWW 300.0A	08/06/11	1224126
		Dilution Factor: 1	Analysis Time..: 02:19		
Nitrite		Work Order #...: MLHLC1DM		MS Lot-Sample #:	F1H090496-002
	80 N	(90 - 110)	MCAWW 300.0A	08/06/11	1224127
		Dilution Factor: 1	Analysis Time..: 02:19		
Phosphate as P, Ortho		Work Order #...: MLHLC1D8		MS Lot-Sample #:	F1H090496-002
	61 N	(90 - 110)	MCAWW 300.0A	08/06/11	1224128
		Dilution Factor: 1	Analysis Time..: 02:19		
Sulfate		Work Order #...: MLHLC1D9		MS Lot-Sample #:	F1H090496-002
	100	(90 - 110)	MCAWW 300.0A	08/06/11	1224129
		Dilution Factor: 10	Analysis Time..: 02:33		
Total Alkalinity		Work Order #...: MLHLC1EA		MS Lot-Sample #:	F1H090496-002
	98	(80 - 120)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090496 **Work Order #...:** MLHLC-SMP MLHLC-DUP **Matrix.....:** WATER

Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H090496-002		
	387	383	mg/L	1.0	(0-15)	MCAWW 160.1	08/11-08/12/11	1224098
			Dilution Factor: 1			Analysis Time..: 00:00		
Chloride						SD Lot-Sample #: F1H090496-002		
	34.4	34.8	mg/L	0.98	(0-20)	MCAWW 300.0A	08/06/11	1224124
			Dilution Factor: 10			Analysis Time..: 02:33		
Fluoride						SD Lot-Sample #: F1H090496-002		
	1.5	1.5	mg/L	3.1	(0-20)	MCAWW 300.0A	08/06/11	1224125
			Dilution Factor: 1			Analysis Time..: 02:19		
Nitrate						SD Lot-Sample #: F1H090496-002		
	0.099	0.096	mg/L	3.2	(0-20)	MCAWW 300.0A	08/06/11	1224126
			Dilution Factor: 1			Analysis Time..: 02:19		
Nitrite						SD Lot-Sample #: F1H090496-002		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/06/11	1224127
			Dilution Factor: 1			Analysis Time..: 02:19		
Phosphate as P, Ortho						SD Lot-Sample #: F1H090496-002		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/06/11	1224128
			Dilution Factor: 1			Analysis Time..: 02:19		
Sulfate						SD Lot-Sample #: F1H090496-002		
	40.7	41.0	mg/L	0.69	(0-20)	MCAWW 300.0A	08/06/11	1224129
			Dilution Factor: 10			Analysis Time..: 02:33		
Total Alkalinity						SD Lot-Sample #: F1H090496-002		
	252	252	mg/L	0.0	(0-20)	MCAWW 310.1	08/17/11	1229090
			Dilution Factor: 1			Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001

Radiochemistry

Lab Sample ID: F1H090496-001
Work Order: MLHLA
Matrix: WATER

Date Collected: 08/05/11 0840
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1228169		Yld % 69
Uranium 234	2.86		0.41	0.10	0.06	08/16/11	08/18/11
Uranium 235/236	0.107		0.072	0.100	0.032	08/16/11	08/18/11
Uranium 238	2.76		0.40	0.10	0.03	08/16/11	08/18/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW220001

Radiochemistry

Lab Sample ID: F1H090496-002
Work Order: MLHLC
Matrix: WATER

Date Collected: 08/05/11 0930
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1228169		Yld % 54
Uranium 234	24.3		2.3	0.1	0.03	08/16/11	08/18/11
Uranium 235/236	1.03		0.27	0.10	0.04	08/16/11	08/18/11
Uranium 238	24.8		2.4	0.1	0.03	08/16/11	08/18/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW220001

Radiochemistry

Lab Sample ID: F1H090496-002X
Work Order: MLHLC
Matrix: WATER

Date Collected: 08/05/11 0930
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 59
Uranium 234	24.3		2.3	0.1	0.06	08/16/11	08/18/11
Uranium 235/236	1.27		0.29	0.10	0.04	08/16/11	08/18/11
Uranium 238	23.2		2.2	0.1	0.03	08/16/11	08/18/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW180001

Radiochemistry

Lab Sample ID: F1H090496-003
Work Order: MLHLD
Matrix: WATER

Date Collected: 08/05/11 1245
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 46
Uranium 234	38.8		3.6	0.1	0.09	08/16/11	08/18/11
Uranium 235/236	1.72		0.39	0.10	0.10	08/16/11	08/18/11
Uranium 238	39.6		3.7	0.1	0.08	08/16/11	08/18/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090496-004
Work Order: MLHLP
Matrix: WATER

Date Collected: 08/05/11 0840
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 72
Uranium 234	3.01		0.43	0.10	0.04	08/16/11	08/18/11
Uranium 235/236	0.196		0.099	0.100	0.033	08/16/11	08/18/11
Uranium 238	2.97		0.42	0.10	0.08	08/16/11	08/18/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW22001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090496-005
Work Order: MLHLR
Matrix: WATER

Date Collected: 08/05/11 0930
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 64
Uranium 234	21.6		2.1	0.1	0.09	08/17/11	08/17/11
Uranium 235/236	1.05		0.26	0.10	0.04	08/17/11	08/17/11
Uranium 238	21.2		2.0	0.1	0.03	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW22001 DISSOLVED DUP

Radiochemistry

Lab Sample ID: F1H090496-005X
Work Order: MLHLR
Matrix: WATER

Date Collected: 08/05/11 0930
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 62
Uranium 234	23.1		2.2	0.1	0.06	08/17/11	08/17/11
Uranium 235/236	1.22		0.28	0.10	0.06	08/17/11	08/17/11
Uranium 238	22.7		2.2	0.1	0.07	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW180001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090496-006
Work Order: MLHL1
Matrix: WATER

Date Collected: 08/05/11 1245
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1229042		Yld % 49
Uranium 234	37.7		3.5	0.1	0.1	08/17/11	08/17/11
Uranium 235/236	1.79		0.38	0.10	0.08	08/17/11	08/17/11
Uranium 238	36.6		3.4	0.1	0.1	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H090496
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1228169		Yld % 93		F1H160000-169B
Uranium 234	0.013	U	0.022	0.100	0.035	08/16/11	08/17/11	
Uranium 235/236	-0.0024	U	0.0047	0.100	0.043	08/16/11	08/17/11	
Uranium 238	-0.0038	U	0.0054	0.100	0.040	08/16/11	08/17/11	
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1229042		Yld % 83		F1H170000-042B
Uranium 234	-0.0060	U	0.0070	0.100	0.047	08/17/11	08/17/11	
Uranium 235/236	-0.0025	U	0.0050	0.100	0.046	08/17/11	08/17/11	
Uranium 238	0.020	U	0.028	0.100	0.043	08/17/11	08/17/11	

NOTE(S)

Data are incomplete without the oase narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H090496
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H160000-169C**
Uranium 234	3.27	3.26	0.42	0.04	85	100	(76 - 136)
Uranium 238	3.39	3.37	0.43	0.04	85	99	(76 - 134)
	Batch #:	1228169		Analysis Date:	08/17/11		
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H170000-042C**
Uranium 234	3.27	3.26	0.42	0.04	82	100	(76 - 136)
Uranium 238	3.39	3.50	0.44	0.02	82	103	(76 - 134)
	Batch #:	1229042		Analysis Date:	08/17/11		

NOTE(S):

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1H090496
Matrix: WATER

Date Sampled: 08/05/11
Date Received: 08/06/11

Parameter	SAMPLE Result	Total Uncert. (2σ +/-)	% Yld	DUPLICATE Result	Total Uncert. (2 σ +/-)	% Yld	QC Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H090496-002**	
Uranium 234	24.3	2.3	54	24.3	2.3	59	0.2	%RPD
Uranium 235/236	1.03	0.27	54	1.27	0.29	59	21	%RPD
Uranium 238	24.8	2.4	54	23.2	2.2	59	7	%RPD
	Batch #:	1228169 (Sample)		1228169 (Duplicate)				
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H090496-005**	
Uranium 234	21.6	2.1	64	23.1	2.2	62	7	%RPD
Uranium 235/236	1.05	0.26	64	1.22	0.28	62	15	%RPD
Uranium 238	21.2	2.0	64	22.7	2.2	62	7	%RPD
	Batch #:	1229042 (Sample)		1229042 (Duplicate)				

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis Storage Loc: R250,2-9,METS,V

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 6

Date Received: 2011-08-06

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
1	A04AMW603D0001			2011-08-05 / 840	MLHLA	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06			
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis Storage Loc: R250,2-9,METS,V

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 6

Date Received: 2011-08-06

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: 8 Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A04AMW220001			2011-08-05 / 930	MLHLC	WATER

SAMPLE COMMENTS:

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R250,2-9,METS,V

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guteryl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 6

Date Received: 2011-08-06
Analytical Due Date: 2011-08-17
Report Due Date: 2011-08-19
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium lstead of 200.8

	XX	GO	MCAW 300.0A W	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
	XX	VC	MCAW 310.1 W	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
D	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	XX	QK	SW846 8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
S	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R250,2-9,METS,V

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 6

Date Received: 2011-08-06

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

S	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
S	XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
S	XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
S	XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
S	XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06		
S	XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
S	XX	DO	MCAW	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
S	XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
S	XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
X	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
X	XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
X	XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
X	XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
X	XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
X	XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06		
X	XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
X	XX	DO	MCAW	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
X	XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
X	XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A04BMW180001			2011-08-05 / 1245	MLHLD	WATER

SAMPLE COMMENTS:

CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R250,2-9,METS,V

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-06

Project: 140415
Guteryl Steel
Analytical Due Date: 2011-08-17

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-19

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 6
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	A04AMW603D0001 DISSOLVED			2011-08-05 / 840	MLHLP	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

Storage Loc: R250,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 6

Date Received: 2011-08-06

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
5	A04AMW22001 DISSOLVED			2011-08-05 / 930	MLHLR	WATER

SAMPLE COMMENTS:

ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R250,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 6

Date Received: 2011-08-06

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
D	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R250,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 6

Date Received: 2011-08-06

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

S	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
X	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (LCT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	A04BMW180001 DISSOLVED			2011-08-05 / 1245	MLHL1	WATER

SAMPLE COMMENTS:

MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R250,METS

Project Manager: LMF
Quote #: 89251 SDG:
Project: 140415 Guteryl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 6

Date Received: 2011-08-06
Analytical Due Date: 2011-08-17
Report Due Date: 2011-08-19
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

estAmerica St. Louis
715 Rider Trail North
rth City, MO 63045
one 314.298.8566 fax 314.298.8757

CUR 059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/05/2011	COC No: 003
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
ncinnati, Ohio 45212	Calendar (C) or Work Days (W)			
13) 782-4700 Phone	TAT if different from Below _____			
13) 782-4807 FAX	☐ 2 weeks			SDG No.
oject Name: Former Guteri Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
D #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
4AMW603D0001	8/5/2011	0840	Grab	GW	10	X		X	X	X	X	X	X	X				4xLP	1x500P 2x250P 3xVIAL
4AMW220001	8/5/2011	0930	Grab	GW	10	X		X	X	X	X	X	X	X				4xLP 2x250P	1x500P 3xVIAL
4AMW220001MS	8/5/2011	0930	Grab	GW	10	X		X	X	X	X	X	X	X				4xLP 2x250P	3xVIAL 1x500P
4AMW220001MSD	8/5/2011	0930	Grab	GW	10	X		X	X	X	X	X	X	X				4xLP	1x500P 3xVIAL 2x250
4BMW180001	8/5/2011	1245	Grab	GW	7	X		X	X	X	X	X	X						4xLP 2x250P 1x500P

eservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

ssible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

ecial Instructions/QC Requirements & Comments:

linquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Kevin Cronin	Shaw E & I. Inc.	08/05/11 1630	[signature]	TABUFFALO	08/05/11 1630
[signature]	TABUFFALO	08/05/11 1650	[signature]	TA STL	08/06/11 0820

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F11090496 TestAmerica St. Louis

CUR Form #: 0 5 9

CONDITION UPON RECEIPT FORM

Client: SHAW

Quote No: 89251

COC/RFA No: 003

Initiated By: NVO Date: 08/06/11 Time: 0820

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) ~~N~~ NV 8/9

Shipping # (s):*

1. 4485 0258 2944
2. 4485 0258 2955
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Sample Temperature (s):**

1. 3
2. AMBIENT
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Received bottles for Filter metals, Iso-U, + Tetra-U - not on COC - ok per LF - AB 8-9-11

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 8/10/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guteryl Steel

Lot #: F1H090504

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 24, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H090504

This report contains the analytical results for the 10 samples received under chain of custody by TestAmerica in St. Louis on August 9, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1230013
There was insufficient sample volume to perform MS/MSD analysis. An LCS/LCSD was performed to demonstrate accuracy and replicate precision.

Affected Samples:
F1H090504 (1): A02MW110001
F1H090504 (2): A02MW090001
F1H090504 (4): SEEP 01
F1H090504 (5): SEEP 02

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1222064
The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

The MSD recovery for calcium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

Strontium was observed in the CCB above 3X the MDL. Associated samples which are either non-detect for the contaminant or exhibit concentrations greater than ten (10) times the concentrations observed in the CCB and do not require re-analysis.

Affected Samples:
F1H090504 (1): A02MW110001
F1H090504 (2): A02MW090001
F1H090504 (3): A02MW080001
F1H090504 (4): SEEP 01
F1H090504 (5): SEEP 02
F1H090504 (6): A02MW110001 DISSOLVED
F1H090504 (7): A02MW090001 DISSOLVED
F1H090504 (8): A02MW080001 DISSOLVED
F1H090504 (9): SEEP 01
F1H090504 (10): SEEP 02

Chloride (MCAWW 300.0A)

Batch: 1224130
The sampls was analyzed at dilution, due to high concentrations of the target analytes.

Affected Samples:
F1H090504 (1): A02MW110001
F1H090504 (2): A02MW090001
F1H090504 (3): A02MW080001
F1H090504 (4): SEEP 01
F1H090504 (5): SEEP 02

Sulfate (MCAWW 300.0A)

Batch: 1224135
The sampls was analyzed at dilution, due to high concentrations of the target analytes.

Affected Samples:
F1H090504 (1): A02MW110001
F1H090504 (2): A02MW090001
F1H090504 (3): A02MW080001
F1H090504 (4): SEEP 01
F1H090504 (5): SEEP 02

Nitrite as N (MCAWW 300.0A)

Batch: 1224133
The following samples were reported ND at dilution for Nitrite, due to interference with Chloride in the undiluted runs. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090504 (1): A02MW110001
F1H090504 (3): A02MW080001
F1H090504 (4): SEEP 01
F1H090504 (5): SEEP 02

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H090504 (1): A02MW110001
F1H090504 (2): A02MW090001
F1H090504 (3): A02MW080001
F1H090504 (4): SEEP 01
F1H090504 (5): SEEP 02

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1224134
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H090504 (1): A02MW110001
F1H090504 (2): A02MW090001
F1H090504 (3): A02MW080001
F1H090504 (4): SEEP 01
F1H090504 (5): SEEP 02

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H090504

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H090504

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLHM6	001	A02MW110001	08/08/11	09:10
MLHM7	002	A02MW090001	08/08/11	10:40
MLHM9	003	A02MW080001	08/08/11	11:40
MLHNA	004	SEEP 01	08/08/11	10:35
MLHNC	005	SEEP 02	08/08/11	11:30
MLHNE	006	A02MW110001 DISSOLVED	08/08/11	09:10
MLHNF	007	A02MW090001 DISSOLVED	08/08/11	10:40
MLHNG	008	A02MW080001 DISSOLVED	08/08/11	11:40
MLHNH	009	SEEP 01	08/08/11	10:35
MLHNJ	010	SEEP 02	08/08/11	11:30

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001

GC/MS Volatiles

Lot-Sample #...: F1H090504-001 Work Order #...: MLHM61AC Matrix.....: WATER
Date Sampled...: 08/08/11 09:10 Date Received..: 08/09/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 13:21
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**3.2**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**12**	**2.0**	**ug/L**
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**5.9**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**8.7**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**19**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.97 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**0.25 J**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**0.23 J**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**0.59 J**	**1.0**	**ug/L**
Vinyl chloride	**1.3 J**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001

GC/MS Volatiles

Lot-Sample #...: F1H090504-001 Work Order #...: MLHM61AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	107	(70 - 120)
4-Bromofluorobenzene	106	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001

TOTAL Metals

Lot-Sample #...: F1H090504-001 Matrix.....: WATER
Date Sampled...: 08/08/11 09:10 Date Received..: 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	**17.7**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHM61A5**
		Dilution Factor: 1		Analysis Time..: 23:41		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AF
		Dilution Factor: 1		Analysis Time..: 18:23		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AG
		Dilution Factor: 1		Analysis Time..: 18:23		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AE
		Dilution Factor: 1		Analysis Time..: 18:23		
Barium	**65.2**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM61AH**
		Dilution Factor: 1		Analysis Time..: 18:23		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AJ
		Dilution Factor: 1		Analysis Time..: 18:23		
Calcium	**114000**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHM61AK**
		Dilution Factor: 5		Analysis Time..: 14:38		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AL
		Dilution Factor: 1		Analysis Time..: 18:23		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AM
		Dilution Factor: 1		Analysis Time..: 18:23		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AN
		Dilution Factor: 1		Analysis Time..: 18:23		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AP
		Dilution Factor: 1		Analysis Time..: 18:23		
Iron	**2120**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM61AQ**
		Dilution Factor: 1		Analysis Time..: 18:23		
Magnesium	**34000**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM61AR**
		Dilution Factor: 1		Analysis Time..: 12:46		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001

TOTAL Metals

Lot-Sample #...: F1H090504-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**119**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM61AT**
		Dilution Factor: 1		Analysis Time..: 18:23		
Sodium	**49900 B**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM61AU**
		Dilution Factor: 1		Analysis Time..: 12:46		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AV
		Dilution Factor: 1		Analysis Time..: 18:23		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHM61AW
		Dilution Factor: 1		Analysis Time..: 20:34		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AX
		Dilution Factor: 1		Analysis Time..: 18:23		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHM61A0
		Dilution Factor: 1		Analysis Time..: 20:34		
Strontium	**492**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHM61A1**
		Dilution Factor: 5		Analysis Time..: 14:38		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61A2
		Dilution Factor: 1		Analysis Time..: 18:23		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61A3
		Dilution Factor: 1		Analysis Time..: 18:23		
Zinc	**7.3 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM61A4**
		Dilution Factor: 1		Analysis Time..: 18:23		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001

General Chemistry

Lot-Sample #...: F1H090504-001 Work Order #...: MLHM6 Matrix.....: WATER
Date Sampled...: 08/08/11 09:10 Date Received..: 08/09/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	101	20.0	mg/L	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 100		Analysis Time..: 08:52		
Fluoride	0.69	0.10	mg/L	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1		Analysis Time..: 07:54		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1		Analysis Time..: 07:54		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 10		Analysis Time..: 08:08		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1		Analysis Time..: 07:54		
Sulfate	61.4	5.0	mg/L	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 10		Analysis Time..: 08:08		
Total Alkalinity	332	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	626	10.0	mg/L	MCAWW 160.1	08/15-08/16/11	1227174
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001

GC/MS Volatiles

Lot-Sample #...: F1H090504-002 Work Order #...: MLHM71AN Matrix.....: WATER
Date Sampled...: 08/08/11 10:40 Date Received..: 08/09/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 14:47
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**2.0**	**2.0**	**ug/L**
Benzene	**0.10 J**	**1.0**	**ug/L**
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**0.39 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**14**	**2.0**	**ug/L**
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**12**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**2.9**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**6.8**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.92 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**0.24 J**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**0.79 J**	**1.0**	**ug/L**
Vinyl chloride	**2.7**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001

GC/MS Volatiles

Lot-Sample #...: F1H090504-002 Work Order #...: MLHM71AN Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	114	(85 - 115)
1,2-Dichloroethane-d4	112	(70 - 120)
4-Bromofluorobenzene	106	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001

TOTAL Metals

Lot-Sample #...: F1H090504-002 Matrix.....: WATER
Date Sampled...: 08/08/11 10:40 Date Received..: 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	21.8	1.0	ug/L	SW846 6020A	08/10-08/11/11	MLHM71AG
		Dilution Factor: 1		Analysis Time..: 23:47		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AR
		Dilution Factor: 1		Analysis Time..: 18:29		
Aluminum	94.3 J	200	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AT
		Dilution Factor: 1		Analysis Time..: 18:29		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AQ
		Dilution Factor: 1		Analysis Time..: 18:29		
Barium	31.8 J	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AU
		Dilution Factor: 1		Analysis Time..: 18:29		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AV
		Dilution Factor: 1		Analysis Time..: 18:29		
Calcium	85900	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHM71AW
		Dilution Factor: 5		Analysis Time..: 14:45		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AX
		Dilution Factor: 1		Analysis Time..: 18:29		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71A0
		Dilution Factor: 1		Analysis Time..: 18:29		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71A1
		Dilution Factor: 1		Analysis Time..: 18:29		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71A2
		Dilution Factor: 1		Analysis Time..: 18:29		
Iron	1730	100	ug/L	SW846 6010C	08/10-08/12/11	MLHM71A3
		Dilution Factor: 1		Analysis Time..: 18:29		
Magnesium	23700	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHM71A4
		Dilution Factor: 1		Analysis Time..: 12:53		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001

TOTAL Metals

Lot-Sample #...: F1H090504-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**304**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM71A5**
		Dilution Factor: 1		Analysis Time..: 18:29		
Sodium	**19300 B**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM71A6**
		Dilution Factor: 1		Analysis Time..: 12:53		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71A7
		Dilution Factor: 1		Analysis Time..: 18:29		
Lead	**2.2 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHM71A8**
		Dilution Factor: 1		Analysis Time..: 20:41		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71A9
		Dilution Factor: 1		Analysis Time..: 18:29		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHM71AA
		Dilution Factor: 1		Analysis Time..: 20:41		
Strontium	**272**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHM71AC**
		Dilution Factor: 5		Analysis Time..: 14:45		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AD
		Dilution Factor: 1		Analysis Time..: 18:29		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AE
		Dilution Factor: 1		Analysis Time..: 18:29		
Zinc	**18.9 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM71AF**
		Dilution Factor: 1		Analysis Time..: 18:29		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001

General Chemistry

Lot-Sample #...: F1H090504-002 Work Order #...: MLHM7 Matrix.....: WATER
Date Sampled...: 08/08/11 10:40 Date Received..: 08/09/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	22.9	2.0	mg/L	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 10		Analysis Time..: 07:25		
Fluoride	1.9	0.10	mg/L	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1		Analysis Time..: 07:11		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1		Analysis Time..: 07:11		
Nitrite	ND	0.020	mg/L	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 1		Analysis Time..: 07:11		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1		Analysis Time..: 07:11		
Sulfate	54.7	5.0	mg/L	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 10		Analysis Time..: 07:25		
Total Alkalinity	247	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	398	10.0	mg/L	MCAWW 160.1	08/15-08/16/11	1227174
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW080001

TOTAL Metals

Lot-Sample #...: F1H090504-003 **Matrix.....:** WATER
Date Sampled...: 08/08/11 11:40 **Date Received..:** 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	1.1	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHM91AG**
		Dilution Factor: 1		Analysis Time..: 23:54		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AR
		Dilution Factor: 1		Analysis Time..: 18:48		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AT
		Dilution Factor: 1		Analysis Time..: 18:48		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AQ
		Dilution Factor: 1		Analysis Time..: 18:48		
Barium	**48.8 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM91AU**
		Dilution Factor: 1		Analysis Time..: 18:48		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AV
		Dilution Factor: 1		Analysis Time..: 18:48		
Calcium	**198000**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHM91AW**
		Dilution Factor: 5		Analysis Time..: 15:03		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AX
		Dilution Factor: 1		Analysis Time..: 18:48		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91A0
		Dilution Factor: 1		Analysis Time..: 18:48		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91A1
		Dilution Factor: 1		Analysis Time..: 18:48		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91A2
		Dilution Factor: 1		Analysis Time..: 18:48		
Iron	**207**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM91A3**
		Dilution Factor: 1		Analysis Time..: 18:48		
Magnesium	**48600**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM91A4**
		Dilution Factor: 1		Analysis Time..: 13:11		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW080001

TOTAL Metals

Lot-Sample #...: F1H090504-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**245**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM91A5**
		Dilution Factor: 1		Analysis Time..: 18:48		
Sodium	**185000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHM91A6**
		Dilution Factor: 5		Analysis Time..: 15:03		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91A7
		Dilution Factor: 1		Analysis Time..: 18:48		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHM91A8
		Dilution Factor: 1		Analysis Time..: 21:00		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91A9
		Dilution Factor: 1		Analysis Time..: 18:48		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHM91AA
		Dilution Factor: 1		Analysis Time..: 21:00		
Strontium	**892**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHM91AC**
		Dilution Factor: 5		Analysis Time..: 15:03		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AD
		Dilution Factor: 1		Analysis Time..: 18:48		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AE
		Dilution Factor: 1		Analysis Time..: 18:48		
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AF
		Dilution Factor: 1		Analysis Time..: 18:48		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW080001

General Chemistry

Lot-Sample #...: F1H090504-003 Work Order #...: MLHM9 Matrix.....: WATER
Date Sampled...: 08/08/11 11:40 Date Received..: 08/09/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	296	20.0	mg/L	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 100		Analysis Time..: 06:56		
Fluoride	0.75	0.10	mg/L	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1		Analysis Time..: 06:27		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1		Analysis Time..: 06:27		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 10		Analysis Time..: 06:42		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1		Analysis Time..: 06:27		
Sulfate	197	50.0	mg/L	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 100		Analysis Time..: 06:56		
Total Alkalinity	328	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1260	10.0	mg/L	MCAWW 160.1	08/15-08/16/11	1227174
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

GC/MS Volatiles

Lot-Sample #...: F1H090504-004 Work Order #...: MLHNA1AN Matrix.....: WATER
Date Sampled...: 08/08/11 10:35 Date Received..: 08/09/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 15:14
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**0.23 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**2.5**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**0.41 J**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**1.8 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.67 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**2.2**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**0.90 J**	**1.0**	**ug/L**
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

GC/MS Volatiles

Lot-Sample #...: F1H090504-004 Work Order #...: MLHNA1AN Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
Dibromofluoromethane	113	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

TOTAL Metals

Lot-Sample #...: F1H090504-004 Matrix.....: WATER
Date Sampled...: 08/08/11 10:35 Date Received..: 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	44.9	1.0	ug/L	SW846 6020A	08/10-08/12/11	MLHNA1AG
		Dilution Factor: 1		Analysis Time..: 00:01		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AR
		Dilution Factor: 1		Analysis Time..: 18:55		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AT
		Dilution Factor: 1		Analysis Time..: 18:55		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AQ
		Dilution Factor: 1		Analysis Time..: 18:55		
Barium	53.7	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AU
		Dilution Factor: 1		Analysis Time..: 18:55		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AV
		Dilution Factor: 1		Analysis Time..: 18:55		
Calcium	106000	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHNA1AW
		Dilution Factor: 5		Analysis Time..: 15:10		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AX
		Dilution Factor: 1		Analysis Time..: 18:55		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A0
		Dilution Factor: 1		Analysis Time..: 18:55		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A1
		Dilution Factor: 1		Analysis Time..: 18:55		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A2
		Dilution Factor: 1		Analysis Time..: 18:55		
Iron	109	100	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A3
		Dilution Factor: 1		Analysis Time..: 18:55		
Magnesium	29400	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A4
		Dilution Factor: 1		Analysis Time..: 13:18		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

TOTAL Metals

Lot-Sample #...: F1H090504-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	4.2 J	15.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A5
		Dilution Factor: 1		Analysis Time..: 18:55		
Sodium	195000 B	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHNA1A6
		Dilution Factor: 5		Analysis Time..: 15:10		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A7
		Dilution Factor: 1		Analysis Time..: 18:55		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNA1A8
		Dilution Factor: 1		Analysis Time..: 21:06		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A9
		Dilution Factor: 1		Analysis Time..: 18:55		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNA1AA
		Dilution Factor: 1		Analysis Time..: 21:06		
Strontium	372	25.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNA1AC
		Dilution Factor: 5		Analysis Time..: 15:10		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AD
		Dilution Factor: 1		Analysis Time..: 18:55		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AE
		Dilution Factor: 1		Analysis Time..: 18:55		
Zinc	73.4	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AF
		Dilution Factor: 1		Analysis Time..: 18:55		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

General Chemistry

Lot-Sample #...: F1H090504-004 Work Order #...: MLHNA Matrix.....: WATER
Date Sampled...: 08/08/11 10:35 Date Received..: 08/09/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	298	20.0	mg/L	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 100		Analysis Time..: 03:34		
Fluoride	0.83	0.10	mg/L	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1		Analysis Time..: 03:05		
Nitrate	0.044	0.020	mg/L	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1		Analysis Time..: 03:05		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 10		Analysis Time..: 03:20		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1		Analysis Time..: 03:05		
Sulfate	51.3	5.0	mg/L	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 10		Analysis Time..: 03:20		
Total Alkalinity	292	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	939	10.0	mg/L	MCAWW 160.1	08/15-08/16/11	1227174
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

GC/MS Volatiles

Lot-Sample #...: F1H090504-005 Work Order #...: MLHNC1AN Matrix.....: WATER
Date Sampled...: 08/08/11 11:30 Date Received..: 08/09/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 15:41
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**2.7**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.83 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

GC/MS Volatiles

Lot-Sample #...: F1H090504-005 Work Order #...: MLHNC1AN Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	106	(70 - 120)
4-Bromofluorobenzene	119	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

TOTAL Metals

Lot-Sample #...: F1H090504-005 Matrix.....: WATER
Date Sampled...: 08/08/11 11:30 Date Received..: 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	**6.3**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/12/11**	**MLHNC1AG**
		Dilution Factor: 1		Analysis Time..: 00:07		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1AR
		Dilution Factor: 1		Analysis Time..: 19:01		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1AT
		Dilution Factor: 1		Analysis Time..: 19:01		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1AQ
		Dilution Factor: 1		Analysis Time..: 19:01		
Barium	**68.1**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNC1AU**
		Dilution Factor: 1		Analysis Time..: 19:01		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1AV
		Dilution Factor: 1		Analysis Time..: 19:01		
Calcium	**113000**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNC1AW**
		Dilution Factor: 5		Analysis Time..: 15:16		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1AX
		Dilution Factor: 1		Analysis Time..: 19:01		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1A0
		Dilution Factor: 1		Analysis Time..: 19:01		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1A1
		Dilution Factor: 1		Analysis Time..: 19:01		
Copper	**226**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNC1A2**
		Dilution Factor: 1		Analysis Time..: 19:01		
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1A3
		Dilution Factor: 1		Analysis Time..: 19:01		
Magnesium	**30800**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNC1A4**
		Dilution Factor: 1		Analysis Time..: 13:24		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

TOTAL Metals

Lot-Sample #...: F1H090504-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**16.5**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNC1A5**
		Dilution Factor: 1		Analysis Time..: 19:01		
Sodium	**180000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNC1A6**
		Dilution Factor: 5		Analysis Time..: 15:16		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1A7
		Dilution Factor: 1		Analysis Time..: 19:01		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNC1A8
		Dilution Factor: 1		Analysis Time..: 21:13		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1A9
		Dilution Factor: 1		Analysis Time..: 19:01		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNC1AA
		Dilution Factor: 1		Analysis Time..: 21:13		
Strontium	**485**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNC1AC**
		Dilution Factor: 5		Analysis Time..: 15:16		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1AD
		Dilution Factor: 1		Analysis Time..: 19:01		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1AE
		Dilution Factor: 1		Analysis Time..: 19:01		
Zinc	**45.4**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNC1AF**
		Dilution Factor: 1		Analysis Time..: 19:01		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

General Chemistry

Lot-Sample #...: F1H090504-005 Work Order #...: MLHNC Matrix.....: WATER
Date Sampled...: 08/08/11 11:30 Date Received..: 08/09/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	248	20.0	mg/L	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 100		Analysis Time..: 06:13		
Fluoride	0.46	0.10	mg/L	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1		Analysis Time..: 05:15		
Nitrate	0.33	0.020	mg/L	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1		Analysis Time..: 05:15		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 10		Analysis Time..: 05:59		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1		Analysis Time..: 05:15		
Sulfate	75.9	5.0	mg/L	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 10		Analysis Time..: 05:59		
Total Alkalinity	314	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	867	10.0	mg/L	MCAWW 160.1	08/15-08/16/11	1227174
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090504-006 **Matrix.....:** WATER
Date Sampled...: 08/08/11 09:10 **Date Received..:** 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	**14.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/12/11**	**MLHNE1A2**
		Dilution Factor: 1		Analysis Time..: 00:14		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AC
		Dilution Factor: 1		Analysis Time..: 19:08		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AD
		Dilution Factor: 1		Analysis Time..: 19:08		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AA
		Dilution Factor: 1		Analysis Time..: 19:08		
Barium	**68.4**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNE1AE**
		Dilution Factor: 1		Analysis Time..: 19:08		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AF
		Dilution Factor: 1		Analysis Time..: 19:08		
Calcium	**112000**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNE1AG**
		Dilution Factor: 5		Analysis Time..: 15:22		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AH
		Dilution Factor: 1		Analysis Time..: 19:08		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AJ
		Dilution Factor: 1		Analysis Time..: 19:08		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AK
		Dilution Factor: 1		Analysis Time..: 19:08		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AL
		Dilution Factor: 1		Analysis Time..: 19:08		
Iron	**2250**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNE1AM**
		Dilution Factor: 1		Analysis Time..: 19:08		
Magnesium	**34100**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNE1AN**
		Dilution Factor: 1		Analysis Time..: 13:30		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090504-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**126**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNE1AP**
		Dilution Factor: 1		Analysis Time..: 19:08		
Sodium	**47500 B**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNE1AQ**
		Dilution Factor: 1		Analysis Time..: 13:30		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AR
		Dilution Factor: 1		Analysis Time..: 19:08		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNE1AT
		Dilution Factor: 1		Analysis Time..: 21:19		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AU
		Dilution Factor: 1		Analysis Time..: 19:08		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNE1AV
		Dilution Factor: 1		Analysis Time..: 21:19		
Strontium	**496**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNE1AW**
		Dilution Factor: 5		Analysis Time..: 15:22		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AX
		Dilution Factor: 1		Analysis Time..: 19:08		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1A0
		Dilution Factor: 1		Analysis Time..: 19:08		
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1A1
		Dilution Factor: 1		Analysis Time..: 19:08		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090504-007 Matrix.....: WATER
Date Sampled...: 08/08/11 10:40 Date Received..: 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	21.1	1.0	ug/L	SW846 6020A	08/10-08/12/11	MLHNF1AD
		Dilution Factor: 1		Analysis Time..: 00:34		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AG
		Dilution Factor: 1		Analysis Time..: 19:14		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AH
		Dilution Factor: 1		Analysis Time..: 19:14		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AF
		Dilution Factor: 1		Analysis Time..: 19:14		
Barium	31.4 J	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AJ
		Dilution Factor: 1		Analysis Time..: 19:14		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AK
		Dilution Factor: 1		Analysis Time..: 19:14		
Calcium	85400	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHNF1AL
		Dilution Factor: 5		Analysis Time..: 15:29		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AM
		Dilution Factor: 1		Analysis Time..: 19:14		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AN
		Dilution Factor: 1		Analysis Time..: 19:14		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AP
		Dilution Factor: 1		Analysis Time..: 19:14		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AQ
		Dilution Factor: 1		Analysis Time..: 19:14		
Iron	1600	100	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AR
		Dilution Factor: 1		Analysis Time..: 19:14		
Magnesium	23800	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AT
		Dilution Factor: 1		Analysis Time..: 13:37		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090504-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**303**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNF1AU**
		Dilution Factor: 1		Analysis Time..: 19:14		
Sodium	**19300 B**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNF1AV**
		Dilution Factor: 1		Analysis Time..: 13:37		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AW
		Dilution Factor: 1		Analysis Time..: 19:14		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNF1AX
		Dilution Factor: 1		Analysis Time..: 21:26		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1A0
		Dilution Factor: 1		Analysis Time..: 19:14		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNF1A1
		Dilution Factor: 1		Analysis Time..: 21:26		
Strontium	**268**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNF1A2**
		Dilution Factor: 5		Analysis Time..: 15:29		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1A3
		Dilution Factor: 1		Analysis Time..: 19:14		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AA
		Dilution Factor: 1		Analysis Time..: 19:14		
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AC
		Dilution Factor: 1		Analysis Time..: 19:14		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW080001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090504-008 Matrix.....: WATER
Date Sampled...: 08/08/11 11:40 Date Received..: 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	**1.1**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/12/11**	**MLHNG1AD**
		Dilution Factor: 1		Analysis Time..: 00:41		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AG
		Dilution Factor: 1		Analysis Time..: 19:21		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AH
		Dilution Factor: 1		Analysis Time..: 19:21		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AF
		Dilution Factor: 1		Analysis Time..: 19:21		
Barium	**47.0 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNG1AJ**
		Dilution Factor: 1		Analysis Time..: 19:21		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AK
		Dilution Factor: 1		Analysis Time..: 19:21		
Calcium	**191000**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNG1AL**
		Dilution Factor: 5		Analysis Time..: 15:35		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AM
		Dilution Factor: 1		Analysis Time..: 19:21		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AN
		Dilution Factor: 1		Analysis Time..: 19:21		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AP
		Dilution Factor: 1		Analysis Time..: 19:21		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AQ
		Dilution Factor: 1		Analysis Time..: 19:21		
Iron	**140**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNG1AR**
		Dilution Factor: 1		Analysis Time..: 19:21		
Magnesium	**47700**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNG1AT**
		Dilution Factor: 1		Analysis Time..: 13:43		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW080001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090504-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**236**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNG1AU**
		Dilution Factor: 1		Analysis Time..: 19:21		
Sodium	**178000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNG1AV**
		Dilution Factor: 5		Analysis Time..: 15:35		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AW
		Dilution Factor: 1		Analysis Time..: 19:21		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNG1AX
		Dilution Factor: 1		Analysis Time..: 21:32		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1A0
		Dilution Factor: 1		Analysis Time..: 19:21		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNG1A1
		Dilution Factor: 1		Analysis Time..: 21:32		
Strontium	**845**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNG1A2**
		Dilution Factor: 5		Analysis Time..: 15:35		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1A3
		Dilution Factor: 1		Analysis Time..: 19:21		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AA
		Dilution Factor: 1		Analysis Time..: 19:21		
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AC
		Dilution Factor: 1		Analysis Time..: 19:21		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

TOTAL Metals

Lot-Sample #...: F1H090504-009 **Matrix.....:** WATER
Date Sampled...: 08/08/11 10:35 **Date Received..:** 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	**44.3**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/12/11**	**MLHNH1AH**
		Dilution Factor: 1		Analysis Time..: 00:47		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AL
		Dilution Factor: 1		Analysis Time..: 19:27		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AM
		Dilution Factor: 1		Analysis Time..: 19:27		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AK
		Dilution Factor: 1		Analysis Time..: 19:27		
Barium	**53.0**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNH1AN**
		Dilution Factor: 1		Analysis Time..: 19:27		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AP
		Dilution Factor: 1		Analysis Time..: 19:27		
Calcium	**104000**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNH1AQ**
		Dilution Factor: 5		Analysis Time..: 15:41		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AR
		Dilution Factor: 1		Analysis Time..: 19:27		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AT
		Dilution Factor: 1		Analysis Time..: 19:27		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AU
		Dilution Factor: 1		Analysis Time..: 19:27		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AV
		Dilution Factor: 1		Analysis Time..: 19:27		
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AW
		Dilution Factor: 1		Analysis Time..: 19:27		
Magnesium	**29800**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNH1AX**
		Dilution Factor: 1		Analysis Time..: 13:49		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

TOTAL Metals

Lot-Sample #...: F1H090504-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	ND	15.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1A0
		Dilution Factor: 1		Analysis Time..: 19:27		
Sodium	**192000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNH1A1**
		Dilution Factor: 5		Analysis Time..: 15:41		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1A2
		Dilution Factor: 1		Analysis Time..: 19:27		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNH1A3
		Dilution Factor: 1		Analysis Time..: 21:39		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AA
		Dilution Factor: 1		Analysis Time..: 19:27		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNH1AC
		Dilution Factor: 1		Analysis Time..: 21:39		
Strontium	**370**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNH1AD**
		Dilution Factor: 5		Analysis Time..: 15:41		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AE
		Dilution Factor: 1		Analysis Time..: 19:27		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AF
		Dilution Factor: 1		Analysis Time..: 19:27		
Zinc	**65.5**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNH1AG**
		Dilution Factor: 1		Analysis Time..: 19:27		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

TOTAL Metals

Lot-Sample #...: F1H090504-010 Matrix.....: WATER
Date Sampled...: 08/08/11 11:30 Date Received..: 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	6.2	1.0	ug/L	SW846 6020A	08/10-08/12/11	MLHNJ1AM
		Dilution Factor: 1		Analysis Time..: 00:54		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AQ
		Dilution Factor: 1		Analysis Time..: 19:33		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AR
		Dilution Factor: 1		Analysis Time..: 19:33		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AP
		Dilution Factor: 1		Analysis Time..: 19:33		
Barium	67.4	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AT
		Dilution Factor: 1		Analysis Time..: 19:33		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AU
		Dilution Factor: 1		Analysis Time..: 19:33		
Calcium	124000	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHNJ1AV
		Dilution Factor: 5		Analysis Time..: 15:47		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AW
		Dilution Factor: 1		Analysis Time..: 19:33		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AX
		Dilution Factor: 1		Analysis Time..: 19:33		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1A0
		Dilution Factor: 1		Analysis Time..: 19:33		
Copper	220	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1A1
		Dilution Factor: 1		Analysis Time..: 19:33		
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1A2
		Dilution Factor: 1		Analysis Time..: 19:33		
Magnesium	30700	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1A3
		Dilution Factor: 1		Analysis Time..: 13:56		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

TOTAL Metals

Lot-Sample #...: F1H090504-010 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**13.7 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNJ1AA**
		Dilution Factor: 1		Analysis Time..: 19:33		
Sodium	**197000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNJ1AC**
		Dilution Factor: 5		Analysis Time..: 15:47		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AD
		Dilution Factor: 1		Analysis Time..: 19:33		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNJ1AE
		Dilution Factor: 1		Analysis Time..: 21:45		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AF
		Dilution Factor: 1		Analysis Time..: 19:33		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNJ1AG
		Dilution Factor: 1		Analysis Time..: 21:45		
Strontium	**542**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNJ1AH**
		Dilution Factor: 5		Analysis Time..: 15:47		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AJ
		Dilution Factor: 1		Analysis Time..: 19:33		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AK
		Dilution Factor: 1		Analysis Time..: 19:33		
Zinc	**38.9**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNJ1AL**
		Dilution Factor: 1		Analysis Time..: 19:33		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090504 Work Order #...: MLRLL1AA Matrix.....: WATER
MB Lot-Sample #: F1H180000-013

Prep Date.....: 08/17/11 Analysis Time..: 10:16
Analysis Date..: 08/17/11 Prep Batch #...: 1230013
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	**0.28 J**	**1.0**	**ug/L**	**SW846 8260B**
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	103	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090504 **Work Order #...:** MLRLL1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	102	(70 - 120)		
4-Bromofluorobenzene	101	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090504 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H100000-062 **Prep Batch #...:** 1222062						
Uranium	ND	1.0	ug/L	SW846 6020A	08/10-08/11/11	MLH661AA
		Dilution Factor: 1				
		Analysis Time..: 22:41				
MB Lot-Sample #: F1H100000-064 **Prep Batch #...:** 1222064						
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AF
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AW
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AD
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Barium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AG
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AH
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AK
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Calcium	ND	1000	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1AJ
		Dilution Factor: 1				
		Analysis Time..: 13:48				
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AM
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AL
		Dilution Factor: 1				
		Analysis Time..: 17:31				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090504 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AN
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AP
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1AV
		Dilution Factor: 1				
		Analysis Time..: 19:43				
Magnesium	ND	1000	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AQ
		Dilution Factor: 1				
		Analysis Time..: 11:56				
Manganese	ND	15.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AR
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AU
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1AX
		Dilution Factor: 1				
		Analysis Time..: 19:43				
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AE
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Sodium	**458 J**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLH7A1AT**
		Dilution Factor: 1				
		Analysis Time..: 11:56				
Strontium	ND	5.0	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1A0
		Dilution Factor: 1				
		Analysis Time..: 13:48				
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1A1
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AA
		Dilution Factor: 1				
		Analysis Time..: 17:31				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090504 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AC
		Dilution Factor: 1				
		Analysis Time..: 17:31				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H090504 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLRP81AA		MB Lot-Sample #:	F1H120000-130	
	ND	0.20	mg/L	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Fluoride		Work Order #: MLRQA1AA		MB Lot-Sample #:	F1H120000-131	
	ND	0.10	mg/L	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Nitrate		Work Order #: MLRQC1AA		MB Lot-Sample #:	F1H120000-132	
	ND	0.020	mg/L	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Nitrite		Work Order #: MLRQD1AA		MB Lot-Sample #:	F1H120000-133	
	ND	0.020	mg/L	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Phosphate as P, Ortho		Work Order #: MLRQE1AA		MB Lot-Sample #:	F1H120000-134	
	ND	0.50	mg/L	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Sulfate		Work Order #: MLRQF1AA		MB Lot-Sample #:	F1H120000-135	
	ND	0.50	mg/L	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Total Alkalinity		Work Order #: MLRFM1AA		MB Lot-Sample #:	F1H170000-090	
	ND	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLQ961AA		MB Lot-Sample #:	F1H150000-174	
	ND	10.0	mg/L	MCAWW 160.1	08/15-08/16/11	1227174
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090504 Work Order #...: MLRLL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: F1H180000-013 MLRLL1AD-LCSD
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 09:23
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	103	(70 - 130)			SW846 8260B
	104	(70 - 130)	0.58	(0-20)	SW846 8260B
Dibromochloromethane	102	(60 - 135)			SW846 8260B
	102	(60 - 135)	0.88	(0-20)	SW846 8260B
Vinyl chloride	94	(50 - 145)			SW846 8260B
	88	(50 - 145)	5.7	(0-20)	SW846 8260B
Bromomethane	106	(30 - 145)			SW846 8260B
	103	(30 - 145)	2.5	(0-20)	SW846 8260B
Chloroethane	94	(60 - 135)			SW846 8260B
	92	(60 - 135)	2.1	(0-20)	SW846 8260B
Acetone	92	(40 - 140)			SW846 8260B
	98	(40 - 140)	6.2	(0-20)	SW846 8260B
1,1-Dichloroethene	104	(70 - 130)			SW846 8260B
	104	(70 - 130)	0.19	(0-20)	SW846 8260B
Methylene chloride	91	(55 - 140)			SW846 8260B
	95	(55 - 140)	4.8	(0-20)	SW846 8260B
Carbon disulfide	98	(35 - 160)			SW846 8260B
	95	(35 - 160)	3.2	(0-20)	SW846 8260B
1,1-Dichloroethane	96	(70 - 135)			SW846 8260B
	95	(70 - 135)	0.38	(0-20)	SW846 8260B
2-Butanone	89	(30 - 150)			SW846 8260B
	94	(30 - 150)	5.9	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	98	(85 - 115)			SW846 8260B
	98	(85 - 115)	0.15	(0-20)	SW846 8260B
Chloroform	93	(65 - 135)			SW846 8260B
	96	(65 - 135)	3.2	(0-20)	SW846 8260B
1,1,1-Trichloroethane	101	(65 - 130)			SW846 8260B
	104	(65 - 130)	3.1	(0-20)	SW846 8260B
Carbon tetrachloride	103	(65 - 140)			SW846 8260B
	103	(65 - 140)	0.090	(0-20)	SW846 8260B
1,2-Dichloroethane	94	(70 - 130)			SW846 8260B
	97	(70 - 130)	2.9	(0-20)	SW846 8260B
Benzene	99	(80 - 120)			SW846 8260B
	99	(80 - 120)	0.14	(0-20)	SW846 8260B
Trichloroethene	93	(70 - 125)			SW846 8260B
	94	(70 - 125)	1.1	(0-20)	SW846 8260B
1,2-Dichloropropane	95	(75 - 125)			SW846 8260B
	95	(75 - 125)	0.37	(0-20)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090504 Work Order #...: MLRLL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: F1H180000-013 MLRLL1AD-LCSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	98	(75 - 120)			SW846 8260B
	98	(75 - 120)	0.070	(0-20)	SW846 8260B
1,1,2-Trichloroethane	95	(75 - 125)			SW846 8260B
	100	(75 - 125)	5.0	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	105	(55 - 140)			SW846 8260B
	104	(55 - 140)	1.2	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	106	(75 - 120)	0.28	(0-20)	SW846 8260B
1,3-Dichlorobenzene	101	(75 - 125)			SW846 8260B
	102	(75 - 125)	0.78	(0-20)	SW846 8260B
1,4-Dichlorobenzene	96	(75 - 125)			SW846 8260B
	97	(75 - 125)	0.88	(0-20)	SW846 8260B
2-Hexanone	89	(55 - 130)			SW846 8260B
	88	(55 - 130)	1.3	(0-20)	SW846 8260B
4-Methyl-2-pentanone	96	(60 - 135)			SW846 8260B
	100	(60 - 135)	3.9	(0-20)	SW846 8260B
Chlorobenzene	98	(80 - 120)			SW846 8260B
	98	(80 - 120)	0.37	(0-20)	SW846 8260B
Bromoform	104	(70 - 130)			SW846 8260B
	108	(70 - 130)	3.6	(0-20)	SW846 8260B
Ethylbenzene	105	(75 - 125)			SW846 8260B
	105	(75 - 125)	0.47	(0-20)	SW846 8260B
Styrene	111	(65 - 135)			SW846 8260B
	111	(65 - 135)	0.090	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	92	(65 - 130)			SW846 8260B
	96	(65 - 130)	4.1	(0-20)	SW846 8260B
Tetrachloroethene	105	(45 - 150)			SW846 8260B
	102	(45 - 150)	3.2	(0-20)	SW846 8260B
1,2-Dichlorobenzene	98	(70 - 120)			SW846 8260B
	102	(70 - 120)	3.8	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
	111	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
	107	(85 - 115)
1,2-Dichloroethane-d4	97	(70 - 120)
	102	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)
	101	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090504 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H100000-062 **Prep Batch #...:** 1222062					
Uranium	105	(80 - 120)	SW846 6020A	08/10-08/11/11	MLH661AC
		Dilution Factor: 1		Analysis Time..: 22:47	
LCS Lot-Sample#: F1H100000-064 **Prep Batch #...:** 1222064					
Vanadium	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A2
		Dilution Factor: 1		Analysis Time..: 17:38	
Zinc	114	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A3
		Dilution Factor: 1		Analysis Time..: 17:38	
Arsenic	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A4
		Dilution Factor: 1		Analysis Time..: 17:38	
Silver	95	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A5
		Dilution Factor: 1		Analysis Time..: 17:38	
Aluminum	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A6
		Dilution Factor: 1		Analysis Time..: 17:38	
Barium	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A7
		Dilution Factor: 1		Analysis Time..: 17:38	
Beryllium	113	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A8
		Dilution Factor: 1		Analysis Time..: 17:38	
Calcium	108	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1A9
		Dilution Factor: 1		Analysis Time..: 13:54	
Cadmium	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CA
		Dilution Factor: 1		Analysis Time..: 17:38	
Cobalt	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CC
		Dilution Factor: 1		Analysis Time..: 17:38	
Chromium	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CD
		Dilution Factor: 1		Analysis Time..: 17:38	
Copper	103	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CE
		Dilution Factor: 1		Analysis Time..: 17:38	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090504 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CF
		Dilution Factor: 1	Analysis Time..: 17:38		
Magnesium	101	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CG
		Dilution Factor: 1	Analysis Time..: 12:02		
Manganese	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CH
		Dilution Factor: 1	Analysis Time..: 17:38		
Sodium	109	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CJ
		Dilution Factor: 1	Analysis Time..: 12:02		
Nickel	104	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CK
		Dilution Factor: 1	Analysis Time..: 17:38		
Lead	101	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1CL
		Dilution Factor: 1	Analysis Time..: 19:49		
Antimony	102	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CM
		Dilution Factor: 1	Analysis Time..: 17:38		
Selenium	102	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1CN
		Dilution Factor: 1	Analysis Time..: 19:49		
Strontium	105	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1CP
		Dilution Factor: 1	Analysis Time..: 13:54		
Thallium	103	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CQ
		Dilution Factor: 1	Analysis Time..: 17:38		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090504 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLRP81AC	LCS Lot-Sample#: F1H120000-130		
	91	(90 - 110)	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 1	Analysis Time..: 02:37		
Fluoride		Work Order #: MLRQA1AC	LCS Lot-Sample#: F1H120000-131		
	99	(90 - 110)	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1	Analysis Time..: 02:37		
Nitrate		Work Order #: MLRQC1AC	LCS Lot-Sample#: F1H120000-132		
	97	(90 - 110)	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1	Analysis Time..: 02:37		
Nitrite		Work Order #: MLRQD1AC	LCS Lot-Sample#: F1H120000-133		
	99	(90 - 110)	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 1	Analysis Time..: 02:37		
Phosphate as P, Ortho		Work Order #: MLRQE1AC	LCS Lot-Sample#: F1H120000-134		
	97	(90 - 110)	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1	Analysis Time..: 02:37		
Sulfate		Work Order #: MLRQF1AC	LCS Lot-Sample#: F1H120000-135		
	94	(90 - 110)	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 1	Analysis Time..: 02:37		
Total Alkalinity		Work Order #: MLRFM1AC	LCS Lot-Sample#: F1H170000-090		
	92	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLRFM1AD	LCS Lot-Sample#: F1H170000-090		
	93	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLQ961AC	LCS Lot-Sample#: F1H150000-174		
	97	(90 - 113)	MCAWW 160.1	08/15-08/16/11	1227174
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090504 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H090496-005 **Prep Batch #...:** 1222062							
Uranium	106	(80 - 120)			SW846 6020A	08/10-08/11/11	MLHLR1CH
	106	(80 - 120)	0.30	(0-20)	SW846 6020A	08/10-08/11/11	MLHLR1CJ
		Dilution Factor: 1					
		Analysis Time..: 23:21					
MS Lot-Sample #: F1H090496-005 **Prep Batch #...:** 1222064							
Aluminum	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CQ
	103	(80 - 120)	0.16	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CR
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Antimony	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1A4
	108	(80 - 120)	4.8	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1A5
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Arsenic	105	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CL
	105	(80 - 120)	0.04	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CM
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Barium	104	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CT
	105	(80 - 120)	0.57	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CU
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Beryllium	108	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CV
	109	(80 - 120)	0.74	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CW
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Cadmium	104	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C1
	103	(80 - 120)	0.65	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C2
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Calcium	96	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1CX
	122 N	(80 - 120)	3.1	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1C0
		Dilution Factor: 5					
		Analysis Time..: 14:07					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090504 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C5
	100	(80 - 120)	0.11	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C6
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Cobalt	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C3
	99	(80 - 120)	0.16	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C4
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Copper	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C7
	100	(80 - 120)	0.65	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C8
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Iron	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C9
	103	(80 - 120)	0.24	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DA
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Lead	99	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1DL
	100	(80 - 120)	0.14	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1DM
		Dilution Factor: 1					
		Analysis Time..: 20:02					
Magnesium	99	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DC
	98	(80 - 120)	0.17	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DD
		Dilution Factor: 1					
		Analysis Time..: 12:15					
Manganese	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DE
	103	(80 - 120)	0.17	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DF
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Nickel	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DJ
	99	(80 - 120)	0.56	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DK
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Selenium	104	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1A6
	104	(80 - 120)	0.18	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1A7
		Dilution Factor: 1					
		Analysis Time..: 20:02					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090504 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	91	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CN
	92	(80 - 120)	1.3	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CP
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Sodium	101	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DG
	99	(80 - 120)	0.59	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DH
		Dilution Factor: 1					
		Analysis Time..: 12:15					
Strontium	109	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1A8
	115	(80 - 120)	3.5	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1A9
		Dilution Factor: 5					
		Analysis Time..: 14:07					
Thallium	99	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CA
	99	(80 - 120)	0.02	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CC
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Vanadium	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CD
	102	(80 - 120)	0.0	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CE
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Zinc	112	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CF
	111	(80 - 120)	0.85	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CG
		Dilution Factor: 1					
		Analysis Time..: 17:50					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090504 **Matrix.....:** WATER
Date Sampled...: 08/08/11 10:35 **Date Received..:** 08/09/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLHNA1CG		MS Lot-Sample #: F1H090504-004	
	100	(90 - 110)	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 100		Analysis Time..: 03:34	
Fluoride		Work Order #...: MLHNA1CJ		MS Lot-Sample #: F1H090504-004	
	100	(90 - 110)	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1		Analysis Time..: 03:05	
Nitrate		Work Order #...: MLHNA1CL		MS Lot-Sample #: F1H090504-004	
	98	(90 - 110)	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1		Analysis Time..: 03:05	
Nitrite		Work Order #...: MLHNA1CN		MS Lot-Sample #: F1H090504-004	
	68 N	(90 - 110)	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 10		Analysis Time..: 03:20	
Phosphate as P, Ortho		Work Order #...: MLHNA1CQ		MS Lot-Sample #: F1H090504-004	
	80 N	(90 - 110)	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1		Analysis Time..: 03:05	
Sulfate		Work Order #...: MLHNA1CT		MS Lot-Sample #: F1H090504-004	
	94	(90 - 110)	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 10		Analysis Time..: 03:20	
Total Alkalinity		Work Order #...: MLHLC1EA		MS Lot-Sample #: F1H090496-002	
	98	(80 - 120)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090504 **Work Order #...:** MLHNA-SMP MLHNA-DUP **Matrix.....:** WATER

Date Sampled...: 08/08/11 10:35 **Date Received..:** 08/09/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H090504-004		
	298	296	mg/L	0.75	(0-20)	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 100				Analysis Time..: 03:34		
Fluoride						SD Lot-Sample #: F1H090504-004		
	0.83	0.88	mg/L	6.1	(0-20)	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1				Analysis Time..: 03:05		
Nitrate						SD Lot-Sample #: F1H090504-004		
	0.044	0.043	mg/L	3.1	(0-20)	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1				Analysis Time..: 03:05		
Nitrite						SD Lot-Sample #: F1H090504-004		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 10				Analysis Time..: 03:20		
Phosphate as P, Ortho						SD Lot-Sample #: F1H090504-004		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1				Analysis Time..: 03:05		
Sulfate						SD Lot-Sample #: F1H090504-004		
	51.3	50.6	mg/L	1.3	(0-20)	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 10				Analysis Time..: 03:20		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090504 **Work Order #...:** MLHM6-SMP MLHM6-DUP **Matrix.....:** WATER

Date Sampled...: 08/08/11 09:10 **Date Received..:** 08/09/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H090504-001		
	626	625	mg/L	0.16	(0-0.0)	MCAWW 160.1	08/15-08/16/11	1227174
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090504 **Work Order #...:** MLHLC-SMP MLHLC-DUP **Matrix.....:** WATER

Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #: F1H090496-002		
	252	252	mg/L	0.0	(0-20)	MCAWW 310.1	08/17/11	1229090
			Dilution Factor: 1			Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001

Radiochemistry

Lab Sample ID: F1H090504-001
Work Order: MLHM6
Matrix: WATER

Date Collected: 08/08/11 0910
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 76
Uranium 234	4.13		0.51	0.10	0.06	08/17/11	08/17/11
Uranium 235/236	0.26		0.11	0.10	0.05	08/17/11	08/17/11
Uranium 238	4.56		0.55	0.10	0.02	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001

Radiochemistry

Lab Sample ID: F1H090504-002
Work Order: MLHM7
Matrix: WATER

Date Collected: 08/08/11 1040
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 76
Uranium 234	6.07		0.69	0.10	0.06	08/17/11	08/17/11
Uranium 235/236	0.32		0.12	0.10	0.05	08/17/11	08/17/11
Uranium 238	6.48		0.73	0.10	0.04	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW080001

Radiochemistry

Lab Sample ID: F1H090504-003
Work Order: MLHM9
Matrix: WATER

Date Collected: 08/08/11 1140
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 37
Uranium 234	0.37		0.17	0.10	0.10	08/17/11	08/17/11
Uranium 235/236	-0.006	U	0.012	0.100	0.11	08/17/11	08/17/11
Uranium 238	0.24		0.14	0.10	0.09	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

Radiochemistry

Lab Sample ID: F1H090504-004
Work Order: MLHNA
Matrix: WATER

Date Collected: 08/08/11 1035
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 73
Uranium 234	13.2		1.3	0.1	0.06	08/17/11	08/17/11
Uranium 235/236	0.72		0.20	0.10	0.03	08/17/11	08/17/11
Uranium 238	13.2		1.3	0.1	0.05	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

Radiochemistry

Lab Sample ID: F1H090504-005
Work Order: MLHNC
Matrix: WATER

Date Collected: 08/08/11 1130
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD	-		pCi/L		Batch # 1229042		Yld % 75
Uranium 234	2.09		0.33	0.10	0.06	08/17/11	08/17/11
Uranium 235/236	0.028	U	0.040	0.100	0.059	08/17/11	08/17/11
Uranium 238	1.59		0.27	0.10	0.05	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090504-006
Work Order: MLHNE
Matrix: WATER

Date Collected: 08/08/11 0910
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 69
Uranium 234	4.75		0.58	0.10	0.05	08/17/11	08/17/11
Uranium 235/236	0.22		0.11	0.10	0.05	08/17/11	08/17/11
Uranium 238	4.65		0.58	0.10	0.05	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090504-007
Work Order: MLHNF
Matrix: WATER

Date Collected: 08/08/11 1040
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 75
Uranium 234	6.26		0.72	0.10	0.06	08/17/11	08/17/11
Uranium 235/236	0.28		0.12	0.10	0.03	08/17/11	08/17/11
Uranium 238	6.70		0.76	0.10	0.03	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW080001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090504-008
Work Order: MLHNG
Matrix: WATER

Date Collected: 08/08/11 1140
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 71
Uranium 234	0.40		0.13	0.10	0.05	08/17/11	08/17/11
Uranium 235/236	0.022	U	0.035	0.100	0.056	08/17/11	08/17/11
Uranium 238	0.34		0.12	0.10	0.03	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

Radiochemistry

Lab Sample ID: F1H090504-009
Work Order: MLHNH
Matrix: WATER

Date Collected: 08/08/11 1035
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 55
Uranium 234	15.4		1.6	0.1	0.07	08/17/11	08/17/11
Uranium 235/236	0.67		0.21	0.10	0.07	08/17/11	08/17/11
Uranium 238	15.3		1.6	0.1	0.07	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

Radiochemistry

Lab Sample ID: F1H090504-010
Work Order: MLHNJ
Matrix: WATER

Date Collected: 08/08/11 1130
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1229042		Yld % 58
Uranium 234	1.89		0.34	0.10	0.05	08/17/11	08/17/11
Uranium 235/236	0.088		0.072	0.100	0.040	08/17/11	08/17/11
Uranium 238	2.13		0.36	0.10	0.05	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H090504
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1229042		Yld % 83	F1H170000-042B
Uranium 234	-0.0060	U	0.0070	0.100	0.047	08/17/11	08/17/11
Uranium 235/236	-0.0025	U	0.0050	0.100	0.046	08/17/11	08/17/11
Uranium 238	0.020	U	0.028	0.100	0.043	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H090504
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ +/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/L		A-01-R MOD			F1H170000-042C
Uranium 234	3.27	3.26	0.42	0.04	82	100	(76 - 136)
Uranium 238	3.39	3.50	0.44	0.02	82	103	(76 - 134)
	Batch #:	1229042		Analysis Date:	08/17/11		

NOTE (S)

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1H090504
Matrix: WATER

Date Sampled: 08/05/11
Date Received: 08/06/11

Parameter	SAMPLE Result	Total Uncert. (2σ+/-)	% Yld	DUPLICATE Result	Total Uncert. (2 σ+/-)	% Yld	QC Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**A-01-R MOD**			**F1H090496-005**	
Uranium 234	21.6	2.1	64	23.1	2.2	62	7	%RPD
Uranium 235/236	1.05	0.26	64	1.22	0.28	62	15	%RPD
Uranium 238	21.2	2.0	64	22.7	2.2	62	7	%RPD
	Batch #:	1229042 (Sample)		1229042 (Duplicate)				

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

TestAmerica St. Louis

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,2-9,METS,V

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

Date Received: 2011-08-09

Analytical Due Date: 2011-08-17

PO#: 697886 | Report to: Kevin Cronin

Report Due Date: 2011-08-19

Client: 522706 | Shaw Environmental & Infrastructure Inc

Report Type: B Standard Report

#SMPS In LOT: 10

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A02MW110001			2011-08-08 / 910	MLHM6	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06			
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,2-9,METS,V

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 10

Date Received: 2011-08-09

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 0020 for total uranium istead of 200.8

XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE # 2 | CLIENT SAMPLE ID: A02MW090001 | Site ID | Client Matrix: WATER | DATE/TIME SAMPLED: 2011-08-08 / 1040 | WORKORDER: MLHM7

SAMPLE COMMENTS:

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
3	A02MW080001			2011-08-08 / 1140	MLHM9	WATER

SAMPLE COMMENTS:

AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,2-9,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

Date Received: 2011-08-09

Analytical Due Date: 2011-08-17

PO#: 697886 | Report to: Kevin Cronin

Report Due Date: 2011-08-19

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: B Standard Report

#SMPS in LOT: 10 | EDD Code: 00

DoD QSM 4.1 please use 8020 for total uranium istead of 200.8

XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
4	SEEP 01			2011-08-08 / 1035	MLHNA	WATER

SAMPLE COMMENTS:

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,2-9,METS,V

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-09

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

#SMPS in LOT: 10 | EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	SEEP 02			2011-08-08 / 1130	MLHNC	WATER

SAMPLE COMMENTS:

CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,2-9,METS,V

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Gutoryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 10

Date Received: 2011-08-09

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
6	A02MW110001 DISSOLVED			2011-08-08 / 910	MLHNE	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
7	A02MW090001 DISSOLVED			2011-08-08 / 1040	MLHNF	WATER

SAMPLE COMMENTS:

ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,METS

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-09

Project: 140415
Guteryl Steel
Analytical Due Date: 2011-08-17

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-19

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 10
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
8	A02MW080001 DISSOLVED			2011-08-08 / 1140	MLHNG	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Date Received: 2011-08-09

Project: 140415 | Guteryl Steel

Analytical Due Date: 2011-08-17

PO#: 697886 | Report to: Kevin Cronin

Report Due Date: 2011-08-19

Client: 522706 | Shaw Environmental & Infrastructure Inc

Report Type: B Standard Report

#SMPS In LOT: 10

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	SEEP 01			2011-08-08 / 1035	MLHNH	WATER

SAMPLE COMMENTS:

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-09

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

#SMPS in LOT: 10

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
10	SEEP 02			2011-08-08 / 1130	MLHNJ	WATER

SAMPLE COMMENTS:

MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

estAmerica St. Louis
715 Rider Trail North
th City, MO 63045
one 314.298.8566 fax 314.298.8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/08/2011	COC No: 004
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
ncinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below SD			
3) 782-4807 FAX	☐ 2 weeks			SDG No.
oject Name: Former Guterl Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
D #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury					Sample Specific Notes:
2MW110001	8/8/2011	0910	Grab	GW	10	X		X	X	X	X	X	X	X					3x40	500p	4XLP 500p, 2x250p		
2MW090001	8/8/2011	1040	Grab	GW	10	X		X	X	X	X	X	X	X									
2MW080001	8/8/2011	1140	Grab	GW	7	X		X	X	X	X	X	X										
p 01	8/8/2011	1035	Grab	GW	10	X		X	X	X	X	X	X	X					3x vial				
p 02	8/8/2011	1130	Grab	GW	10	X		X	X	X	X	X	X	X									

AB 8-9-11

servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

sible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

cial Instructions/QC Requirements & Comments:

inquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Kevin Cronin	Shaw E & I. Inc.	8/8/11 1650	[signature]	BFLO	08-08-11 16:50
[signature]	BFLO	08-08-11 17:15	[signature]	BFLO	8/8/11 1715
[signature]	BFLO	8/8/11 1730	[signature]	TA	8/9/11 0920

TestAmerica St. Louis

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CUR Form #: 326

Lot #(s): F1H090504

TestAmerica St. Louis

CONDITION UPON RECEIPT FORM

Client: Shaw

Quote No: 89251

COC/RFA No: 004

Initiated By: AB Date: 8-9-11 Time: 0920

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*				Sample Temperature (s):**			
1.	4485 02583105	6.		1.	2	6.	
2.	3127	7.		2.	ambient	7.	
3.		8.		3.		8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Received bottles for Filtered Metals, Total-U, + Iso-U-not on COC- 1 cg per LF

Corrective Action:

Client Contact Name: _____ Informed by: _____

Sample(s) processed "as is"

Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/10/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guteryl Steel

Lot #: F1H100419

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 24, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H100419

This report contains the analytical results for the six samples received under chain of custody by TestAmerica in St. Louis on August 10, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1230013
There was insufficient sample volume to perform MS/MSD analysis. An LCS/LCSD was performed to demonstrate accuracy and replicate precision.

Affected Samples:
F1H100419 (1): MW705D0001
F1H100419 (2): MW705DD0001
F1H100419 (3): A04DMW711D0001

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1223088
The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

The MSD recovery for calcium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

Strontium was observed in the CCB above 3X the MDL. Associated samples which are either non-detect for the contaminant or exhibit concentrations greater than ten (10) times the concentrations observed in the CCB, do not require re-analysis.

Affected Samples:
F1H100419 (1): MW705D0001
F1H100419 (2): MW705DD0001
F1H100419 (3): A04DMW711D0001
F1H100419 (4): MW705D0001 DISSOLVED
F1H100419 (5): MW705DD0001 DISSOLVED
F1H100419 (6): A04DMW711D0001 DISSOLVED

Chloride (MCAWW 300.0A)

Batch: 1224136
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H100419 (1): MW705D0001
F1H100419 (2): MW705DD0001
F1H100419 (3): A04DMW711D0001

Sulfate (MCAWW 300.0A)

Batch: 1224141
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H100419 (1): MW705D0001
F1H100419 (2): MW705DD0001
F1H100419 (3): A04DMW711D0001

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1224140
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H100419 (1): MW705D0001
F1H100419 (2): MW705DD0001
F1H100419 (3): A04DMW711D0001

Nitrite as N (MCAWW 300.0A)

Batch: 1227147
The following samples were reported ND at dilution for Nitrite, due to interference with Chloride in the undiluted runs. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Samples F1H100419-001 and 002 were analyzed within 48 hour hold for Nitrite on 8/10/11, but due to a failed bracketing CCV, they were re-analyzed for Nitrite in batch 1227147 on 8/11/11, out of 48 hour hold.

Affected Samples:
F1H100419 (1): MW705D0001
F1H100419 (2): MW705DD0001
F1H100419 (3): A04DMW711D0001

Sample F1H100419-003 was analyzed upon receipt, within 48 hour hold, on 8/10/11. However, due to a failed bracketing CCV for Nitrite, this sample required re-analysis on 8/11/11. Due to mis-injection in that run, this sample was finally re-analzed on 8/12/11 for Nitrite in batch 1224151. Results are reported from the latter run, out of 48 hour hold.

Affected Samples:
F1H100419 (3): A04DMW711D0001

Total Dissolved Solids (MCAWW 160.1)

Batch: 1228283
The sample was analyzed at a dilution based on high concentrations of target analytes. The reporting limit has been adjusted accordingly.

Affected Samples:
F1H100419 (2): MW705DD0001

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H100419

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H100419

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLH8E	001	MW705D0001	08/09/11	08:35
MLH8K	002	MW705DD0001	08/09/11	09:30
MLH8M	003	A04DMW711D0001	08/09/11	14:45
MLH8P	004	MW705D0001 DISSOLVED	08/09/11	08:35
MLH8V	005	MW705DD0001 DISSOLVED	08/09/11	09:30
MLH8W	006	A04DMW711D0001 DISSOLVED	08/09/11	14:45

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001

GC/MS Volatiles

Lot-Sample #...: F1H100419-001 Work Order #...: MLH8E1AC Matrix.....: WATER
Date Sampled...: 08/09/11 08:35 Date Received..: 08/10/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 11:35
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**6.3**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**1.3 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.13 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.61 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.13 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001

GC/MS Volatiles

Lot-Sample #...: F1H100419-001 **Work Order #...:** MLH8E1AC **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
1,2-Dichloroethane-d4	107	(70 - 120)
4-Bromofluorobenzene	105	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001

TOTAL Metals

Lot-Sample #...: F1H100419-001 Matrix.....: WATER
Date Sampled...: 08/09/11 08:35 Date Received..: 08/10/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1223087						
Uranium	0.89 J	1.0	ug/L	SW846 6020A	08/11-08/13/11	MLH8E1A5
		Dilution Factor: 1		Analysis Time..: 04:21		
Prep Batch #...: 1223088						
Silver	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AF
		Dilution Factor: 1		Analysis Time..: 20:06		
Aluminum	80.3 J	200	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AG
		Dilution Factor: 1		Analysis Time..: 20:06		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AE
		Dilution Factor: 1		Analysis Time..: 20:06		
Barium	25.8 J	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AH
		Dilution Factor: 1		Analysis Time..: 20:06		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AJ
		Dilution Factor: 1		Analysis Time..: 20:06		
Calcium	125000	5000	ug/L	SW846 6010C	08/11-08/16/11	MLH8E1AK
		Dilution Factor: 5		Analysis Time..: 16:19		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AL
		Dilution Factor: 1		Analysis Time..: 20:06		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AM
		Dilution Factor: 1		Analysis Time..: 20:06		
Chromium	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AN
		Dilution Factor: 1		Analysis Time..: 20:06		
Copper	ND	25.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AP
		Dilution Factor: 1		Analysis Time..: 20:06		
Iron	48.2 J	100	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AQ
		Dilution Factor: 1		Analysis Time..: 20:06		
Magnesium	31000	1000	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AR
		Dilution Factor: 1		Analysis Time..: 14:27		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001

TOTAL Metals

Lot-Sample #...: F1H100419-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**9.5 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8E1AT**
		Dilution Factor: 1		Analysis Time..: 20:06		
Sodium	**174000**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8E1AU**
		Dilution Factor: 5		Analysis Time..: 16:19		
Nickel	ND	40.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AV
		Dilution Factor: 1		Analysis Time..: 20:06		
Lead	ND	10.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8E1AW
		Dilution Factor: 1		Analysis Time..: 22:17		
Antimony	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AX
		Dilution Factor: 1		Analysis Time..: 20:06		
Selenium	ND	15.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8E1A0
		Dilution Factor: 1		Analysis Time..: 22:17		
Strontium	**1680**	**25.0**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8E1A1**
		Dilution Factor: 5		Analysis Time..: 16:19		
Thallium	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1A2
		Dilution Factor: 1		Analysis Time..: 20:06		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1A3
		Dilution Factor: 1		Analysis Time..: 20:06		
Zinc	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1A4
		Dilution Factor: 1		Analysis Time..: 20:06		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001

General Chemistry

Lot-Sample #...: F1H100419-001 Work Order #...: MLH8E Matrix.....: WATER
Date Sampled...: 08/09/11 08:35 Date Received..: 08/10/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	108	20.0	mg/L	MCAWW 300.0A	08/10/11	1224136
		Dilution Factor: 100		Analysis Time..: 05:20		
Fluoride	0.44	0.10	mg/L	MCAWW 300.0A	08/10/11	1224137
		Dilution Factor: 1		Analysis Time..: 04:51		
Nitrate	0.012 B	0.020	mg/L	MCAWW 300.0A	08/10/11	1224138
		Dilution Factor: 1		Analysis Time..: 04:51		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1227147
		Dilution Factor: 10		Analysis Time..: 03:14		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/10/11	1224140
		Dilution Factor: 1		Analysis Time..: 04:51		
Sulfate	748	50.0	mg/L	MCAWW 300.0A	08/10/11	1224141
		Dilution Factor: 100		Analysis Time..: 05:20		
Total Alkalinity	184	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1550	10.0	mg/L	MCAWW 160.1	08/16-08/18/11	1228283
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001

GC/MS Volatiles

Lot-Sample #...: F1H100419-002 Work Order #...: MLH8K1AN Matrix.....: WATER
Date Sampled...: 08/09/11 09:30 Date Received..: 08/10/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 12:02
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	**0.50 J**	**1.0**	**ug/L**
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**4.4**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.71 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	**0.76 J**	**1.0**	**ug/L**
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.82 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**2.1**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	**4.2 J**	**5.0**	**ug/L**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001

GC/MS Volatiles

Lot-Sample #...: F1H100419-002 Work Order #...: MLH8K1AN Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	111	(85 - 120)
Dibromofluoromethane	107	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	103	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001

TOTAL Metals

Lot-Sample #...: F1H100419-002 **Matrix.....:** WATER
Date Sampled...: 08/09/11 09:30 **Date Received..:** 08/10/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1223087						
Uranium	**1.7**	**1.0**	**ug/L**	**SW846 6020A**	**08/11-08/13/11**	**MLH8K1AG**
		Dilution Factor: 1		Analysis Time..: 04:49		
Prep Batch #...: 1223088						
Silver	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AR
		Dilution Factor: 1		Analysis Time..: 20:31		
Aluminum	ND	200	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AT
		Dilution Factor: 1		Analysis Time..: 20:31		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AQ
		Dilution Factor: 1		Analysis Time..: 20:31		
Barium	**24.7 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8K1AU**
		Dilution Factor: 1		Analysis Time..: 20:31		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AV
		Dilution Factor: 1		Analysis Time..: 20:31		
Calcium	**531000**	**20000**	**ug/L**	**SW846 6010C**	**08/11-08/17/11**	**MLH8K1AW**
		Dilution Factor: 20		Analysis Time..: 09:02		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AX
		Dilution Factor: 1		Analysis Time..: 20:31		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1A0
		Dilution Factor: 1		Analysis Time..: 20:31		
Chromium	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1A1
		Dilution Factor: 1		Analysis Time..: 20:31		
Copper	ND	25.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1A2
		Dilution Factor: 1		Analysis Time..: 20:31		
Iron	**36.1 J**	**100**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8K1A3**
		Dilution Factor: 1		Analysis Time..: 20:31		
Magnesium	**287000**	**10000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8K1A4**
		Dilution Factor: 10		Analysis Time..: 16:44		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001

TOTAL Metals

Lot-Sample #...: F1H100419-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**14.5 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8K1A5**
		Dilution Factor: 1		Analysis Time..: 20:31		
Sodium	**983000**	**10000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8K1A6**
		Dilution Factor: 10		Analysis Time..: 16:44		
Nickel	ND	40.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1A7
		Dilution Factor: 1		Analysis Time..: 20:31		
Lead	ND	10.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8K1A8
		Dilution Factor: 1		Analysis Time..: 22:43		
Antimony	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1A9
		Dilution Factor: 1		Analysis Time..: 20:31		
Selenium	ND	15.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8K1AA
		Dilution Factor: 1		Analysis Time..: 22:43		
Strontium	**13500**	**100**	**ug/L**	**SW846 6010C**	**08/11-08/17/11**	**MLH8K1AC**
		Dilution Factor: 20		Analysis Time..: 09:02		
Thallium	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AD
		Dilution Factor: 1		Analysis Time..: 20:31		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AE
		Dilution Factor: 1		Analysis Time..: 20:31		
Zinc	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AF
		Dilution Factor: 1		Analysis Time..: 20:31		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001

General Chemistry

Lot-Sample #...: F1H100419-002 Work Order #...: MLH8K Matrix.....: WATER
Date Sampled...: 08/09/11 09:30 Date Received..: 08/10/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	2180	200	mg/L	MCAWW 300.0A	08/12/11	1227150
		Dilution Factor: 1000		Analysis Time..: 04:41		
Fluoride	ND	0.10	mg/L	MCAWW 300.0A	08/10/11	1224137
		Dilution Factor: 1		Analysis Time..: 07:01		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/10/11	1224138
		Dilution Factor: 1		Analysis Time..: 07:01		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1227147
		Dilution Factor: 10		Analysis Time..: 04:26		
Phosphate as P, Ortho	0.13 B	0.50	mg/L	MCAWW 300.0A	08/10/11	1224140
		Dilution Factor: 1		Analysis Time..: 07:01		
Sulfate	1850	50.0	mg/L	MCAWW 300.0A	08/10/11	1224141
		Dilution Factor: 100		Analysis Time..: 07:58		
Total Alkalinity	159	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	6720	100	mg/L	MCAWW 160.1	08/16-08/18/11	1228283
		Dilution Factor: 10		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001

GC/MS Volatiles

Lot-Sample #...: F1H100419-003 Work Order #...: MLH8M1AN Matrix.....: WATER
Date Sampled...: 08/09/11 14:45 Date Received..: 08/10/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 12:28
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**12**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.62 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**2.8**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**0.31 J**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**0.77 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.69 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.12 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	**0.74 J**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**0.83 J**	**1.0**	**ug/L**
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001

GC/MS Volatiles

Lot-Sample #...: F1H100419-003 **Work Order #...:** MLH8M1AN **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	107	(85 - 115)
1,2-Dichloroethane-d4	102	(70 - 120)
4-Bromofluorobenzene	117	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001

TOTAL Metals

Lot-Sample #...: F1H100419-003 Matrix.....: WATER
Date Sampled...: 08/09/11 14:45 Date Received..: 08/10/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1223087						
Uranium	**9.0**	**1.0**	**ug/L**	**SW846 6020A**	**08/11-08/13/11**	**MLH8M1AG**
		Dilution Factor: 1		Analysis Time..: 05:04		
Prep Batch #...: 1223088						
Silver	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AR
		Dilution Factor: 1		Analysis Time..: 20:44		
Aluminum	ND	200	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AT
		Dilution Factor: 1		Analysis Time..: 20:44		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AQ
		Dilution Factor: 1		Analysis Time..: 20:44		
Barium	**53.3**	**50.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8M1AU**
		Dilution Factor: 1		Analysis Time..: 20:44		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AV
		Dilution Factor: 1		Analysis Time..: 20:44		
Calcium	**120000**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8M1AW**
		Dilution Factor: 5		Analysis Time..: 16:57		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AX
		Dilution Factor: 1		Analysis Time..: 20:44		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1A0
		Dilution Factor: 1		Analysis Time..: 20:44		
Chromium	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1A1
		Dilution Factor: 1		Analysis Time..: 20:44		
Copper	**121**	**25.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8M1A2**
		Dilution Factor: 1		Analysis Time..: 20:44		
Iron	**93.2 J**	**100**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8M1A3**
		Dilution Factor: 1		Analysis Time..: 20:44		
Magnesium	**39100**	**1000**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8M1A4**
		Dilution Factor: 1		Analysis Time..: 15:05		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001

TOTAL Metals

Lot-Sample #...: F1H100419-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**55.7**	**15.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8M1A5**
		Dilution Factor: 1		Analysis Time..: 20:44		
Sodium	**165000**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8M1A6**
		Dilution Factor: 5		Analysis Time..: 16:57		
Nickel	ND	40.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1A7
		Dilution Factor: 1		Analysis Time..: 20:44		
Lead	ND	10.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8M1A8
		Dilution Factor: 1		Analysis Time..: 22:56		
Antimony	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1A9
		Dilution Factor: 1		Analysis Time..: 20:44		
Selenium	ND	15.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8M1AA
		Dilution Factor: 1		Analysis Time..: 22:56		
Strontium	**615**	**25.0**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8M1AC**
		Dilution Factor: 5		Analysis Time..: 16:57		
Thallium	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AD
		Dilution Factor: 1		Analysis Time..: 20:44		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AE
		Dilution Factor: 1		Analysis Time..: 20:44		
Zinc	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AF
		Dilution Factor: 1		Analysis Time..: 20:44		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001

General Chemistry

Lot-Sample #...: F1H100419-003 Work Order #...: MLH8M Matrix.....: WATER
Date Sampled...: 08/09/11 14:45 Date Received..: 08/10/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	199	20.0	mg/L	MCAWW 300.0A	08/10/11	1224136
		Dilution Factor: 100		Analysis Time..: 08:41		
Fluoride	0.62	0.10	mg/L	MCAWW 300.0A	08/10/11	1224137
		Dilution Factor: 1		Analysis Time..: 08:13		
Nitrate	0.0086 B	0.020	mg/L	MCAWW 300.0A	08/10/11	1224138
		Dilution Factor: 1		Analysis Time..: 08:13		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 10		Analysis Time..: 11:32		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/10/11	1224140
		Dilution Factor: 1		Analysis Time..: 08:13		
Sulfate	150	5.0	mg/L	MCAWW 300.0A	08/10/11	1224141
		Dilution Factor: 10		Analysis Time..: 08:27		
Total Alkalinity	302	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	936	10.0	mg/L	MCAWW 160.1	08/16-08/18/11	1228283
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H100419-004 **Matrix.....:** WATER
Date Sampled...: 08/09/11 08:35 **Date Received..:** 08/10/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1223087						
Uranium	**2.8**	**1.0**	**ug/L**	**SW846 6020A**	**08/11-08/13/11**	**MLH8P1A2**
		Dilution Factor: 1		Analysis Time..: 05:11		
Prep Batch #...: 1223088						
Silver	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AC
		Dilution Factor: 1		Analysis Time..: 20:51		
Aluminum	ND	200	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AD
		Dilution Factor: 1		Analysis Time..: 20:51		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AA
		Dilution Factor: 1		Analysis Time..: 20:51		
Barium	**26.9 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8P1AE**
		Dilution Factor: 1		Analysis Time..: 20:51		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AF
		Dilution Factor: 1		Analysis Time..: 20:51		
Calcium	**94200**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8P1AG**
		Dilution Factor: 5		Analysis Time..: 17:03		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AH
		Dilution Factor: 1		Analysis Time..: 20:51		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AJ
		Dilution Factor: 1		Analysis Time..: 20:51		
Chromium	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AK
		Dilution Factor: 1		Analysis Time..: 20:51		
Copper	ND	25.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AL
		Dilution Factor: 1		Analysis Time..: 20:51		
Iron	ND	100	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AM
		Dilution Factor: 1		Analysis Time..: 20:51		
Magnesium	**35200**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8P1AN**
		Dilution Factor: 5		Analysis Time..: 17:03		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H100419-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**20.6**	**15.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8P1AP**
		Dilution Factor: 1		Analysis Time..: 20:51		
Sodium	**194000**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8P1AQ**
		Dilution Factor: 5		Analysis Time..: 17:03		
Nickel	ND	40.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AR
		Dilution Factor: 1		Analysis Time..: 20:51		
Lead	ND	10.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8P1AT
		Dilution Factor: 1		Analysis Time..: 23:02		
Antimony	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AU
		Dilution Factor: 1		Analysis Time..: 20:51		
Selenium	ND	15.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8P1AV
		Dilution Factor: 1		Analysis Time..: 23:02		
Strontium	**1310**	**25.0**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8P1AW**
		Dilution Factor: 5		Analysis Time..: 17:03		
Thallium	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AX
		Dilution Factor: 1		Analysis Time..: 20:51		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1A0
		Dilution Factor: 1		Analysis Time..: 20:51		
Zinc	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1A1
		Dilution Factor: 1		Analysis Time..: 20:51		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H100419-005 **Matrix.....:** WATER
Date Sampled...: 08/09/11 09:30 **Date Received..:** 08/10/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1223087						
Uranium	**0.37 J**	**1.0**	**ug/L**	**SW846 6020A**	**08/11-08/15/11**	**MLH8V1AD**
		Dilution Factor: 1		Analysis Time..: 23:52		
Prep Batch #...: 1223088						
Silver	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AG
		Dilution Factor: 1		Analysis Time..: 21:10		
Aluminum	ND	200	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AH
		Dilution Factor: 1		Analysis Time..: 21:10		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AF
		Dilution Factor: 1		Analysis Time..: 21:10		
Barium	**23.9 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8V1AJ**
		Dilution Factor: 1		Analysis Time..: 21:10		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AK
		Dilution Factor: 1		Analysis Time..: 21:10		
Calcium	**372000**	**10000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8V1AL**
		Dilution Factor: 10		Analysis Time..: 17:22		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AM
		Dilution Factor: 1		Analysis Time..: 21:10		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AN
		Dilution Factor: 1		Analysis Time..: 21:10		
Chromium	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AP
		Dilution Factor: 1		Analysis Time..: 21:10		
Copper	ND	25.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AQ
		Dilution Factor: 1		Analysis Time..: 21:10		
Iron	ND	100	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AR
		Dilution Factor: 1		Analysis Time..: 21:10		
Magnesium	**234000**	**10000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8V1AT**
		Dilution Factor: 10		Analysis Time..: 17:22		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H100419-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	ND	15.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AU
		Dilution Factor: 1		Analysis Time..: 21:10		
Sodium	**449000**	**10000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8V1AV**
		Dilution Factor: 10		Analysis Time..: 17:22		
Nickel	ND	40.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AW
		Dilution Factor: 1		Analysis Time..: 21:10		
Lead	ND	10.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8V1AX
		Dilution Factor: 1		Analysis Time..: 23:22		
Antimony	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1A0
		Dilution Factor: 1		Analysis Time..: 21:10		
Selenium	ND	15.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8V1A1
		Dilution Factor: 1		Analysis Time..: 23:22		
Strontium	**8860**	**50.0**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8V1A2**
		Dilution Factor: 10		Analysis Time..: 17:22		
Thallium	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1A3
		Dilution Factor: 1		Analysis Time..: 21:10		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AA
		Dilution Factor: 1		Analysis Time..: 21:10		
Zinc	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AC
		Dilution Factor: 1		Analysis Time..: 21:10		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H100419-006 Matrix.....: WATER
Date Sampled...: 08/09/11 14:45 Date Received..: 08/10/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1223087						
Uranium	**7.4**	**1.0**	**ug/L**	**SW846 6020A**	**08/11-08/15/11**	**MLH8W1AH**
		Dilution Factor: 1		Analysis Time..: 23:59		
Prep Batch #...: 1223088						
Silver	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AL
		Dilution Factor: 1		Analysis Time..: 21:17		
Aluminum	ND	200	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AM
		Dilution Factor: 1		Analysis Time..: 21:17		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AK
		Dilution Factor: 1		Analysis Time..: 21:17		
Barium	**56.0**	**50.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8W1AN**
		Dilution Factor: 1		Analysis Time..: 21:17		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AP
		Dilution Factor: 1		Analysis Time..: 21:17		
Calcium	**118000**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8W1AQ**
		Dilution Factor: 5		Analysis Time..: 17:28		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AR
		Dilution Factor: 1		Analysis Time..: 21:17		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AT
		Dilution Factor: 1		Analysis Time..: 21:17		
Chromium	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AU
		Dilution Factor: 1		Analysis Time..: 21:17		
Copper	**104**	**25.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8W1AV**
		Dilution Factor: 1		Analysis Time..: 21:17		
Iron	**33.8 J**	**100**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8W1AW**
		Dilution Factor: 1		Analysis Time..: 21:17		
Magnesium	**38900**	**1000**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8W1AX**
		Dilution Factor: 1		Analysis Time..: 15:36		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H100419-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**59.6**	**15.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8W1A0**
		Dilution Factor: 1		Analysis Time..: 21:17		
Sodium	**164000**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8W1A1**
		Dilution Factor: 5		Analysis Time..: 17:28		
Nickel	ND	40.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1A2
		Dilution Factor: 1		Analysis Time..: 21:17		
Lead	ND	10.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8W1A3
		Dilution Factor: 1		Analysis Time..: 23:28		
Antimony	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AA
		Dilution Factor: 1		Analysis Time..: 21:17		
Selenium	ND	15.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8W1AC
		Dilution Factor: 1		Analysis Time..: 23:28		
Strontium	**572**	**25.0**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8W1AD**
		Dilution Factor: 5		Analysis Time..: 17:28		
Thallium	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AE
		Dilution Factor: 1		Analysis Time..: 21:17		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AF
		Dilution Factor: 1		Analysis Time..: 21:17		
Zinc	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AG
		Dilution Factor: 1		Analysis Time..: 21:17		

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H100419 **Work Order #...:** MLRLL1AA **Matrix.....:** WATER
MB Lot-Sample #: F1H180000-013

Prep Date.....: 08/17/11 **Analysis Time..:** 10:16
Analysis Date..: 08/17/11 **Prep Batch #...:** 1230013
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	**0.28 J**	**1.0**	**ug/L**	**SW846 8260B**
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	103	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H100419 Work Order #...: MLRLL1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	102	(70 - 120)		
4-Bromofluorobenzene	101	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H110000-087 **Prep Batch #...:** 1223087						
Uranium	ND	1.0	ug/L	SW846 6020A	08/11-08/13/11	MLJ8A1AA
		Dilution Factor: 1				
		Analysis Time..: 04:07				
MB Lot-Sample #: F1H110000-088 **Prep Batch #...:** 1223088						
Aluminum	ND	200	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AD
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Antimony	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AU
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AA
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Barium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AE
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AF
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AH
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Calcium	ND	1000	ug/L	SW846 6010C	08/11-08/16/11	MLJ8D1AG
		Dilution Factor: 1				
		Analysis Time..: 16:06				
Chromium	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AK
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AJ
		Dilution Factor: 1				
		Analysis Time..: 19:53				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AL
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Iron	ND	100	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AM
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Lead	ND	10.0	ug/L	SW846 6010C	08/11-08/16/11	MLJ8D1AT
		Dilution Factor: 1				
		Analysis Time..: 22:04				
Magnesium	ND	1000	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AN
		Dilution Factor: 1				
		Analysis Time..: 14:14				
Manganese	ND	15.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AP
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Nickel	ND	40.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AR
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Selenium	ND	15.0	ug/L	SW846 6010C	08/11-08/16/11	MLJ8D1AV
		Dilution Factor: 1				
		Analysis Time..: 22:04				
Silver	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AC
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Sodium	ND	1000	ug/L	SW846 6010C	08/11-08/16/11	MLJ8D1AQ
		Dilution Factor: 1				
		Analysis Time..: 16:06				
Strontium	ND	5.0	ug/L	SW846 6010C	08/11-08/16/11	MLJ8D1AW
		Dilution Factor: 1				
		Analysis Time..: 16:06				
Thallium	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AX
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1A0
		Dilution Factor: 1				
		Analysis Time..: 19:53				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1A1

Dilution Factor: 1
Analysis Time..: 19:53

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLPPW1AA		MB Lot-Sample #:	F1H120000-136	
	ND	0.20	mg/L	MCAWW 300.0A	08/10/11	1224136
		Dilution Factor: 1				
		Analysis Time..: 04:36				
Chloride		Work Order #: MLPTM1AA		MB Lot-Sample #:	F1H150000-150	
	ND	0.20	mg/L	MCAWW 300.0A	08/11/11	1227150
		Dilution Factor: 1				
		Analysis Time..: 07:04				
Fluoride		Work Order #: MLPP01AA		MB Lot-Sample #:	F1H120000-137	
	ND	0.10	mg/L	MCAWW 300.0A	08/10/11	1224137
		Dilution Factor: 1				
		Analysis Time..: 04:36				
Nitrate		Work Order #: MLPP21AA		MB Lot-Sample #:	F1H120000-138	
	ND	0.020	mg/L	MCAWW 300.0A	08/10/11	1224138
		Dilution Factor: 1				
		Analysis Time..: 04:36				
Nitrite		Work Order #: MLPTL1AA		MB Lot-Sample #:	F1H150000-147	
	ND	0.020	mg/L	MCAWW 300.0A	08/11/11	1227147
		Dilution Factor: 1				
		Analysis Time..: 07:04				
Nitrite		Work Order #: MLTCL1AA		MB Lot-Sample #:	F1H120000-151	
	ND	0.020	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Phosphate as P, Ortho		Work Order #: MLPP71AA		MB Lot-Sample #:	F1H120000-140	
	ND	0.50	mg/L	MCAWW 300.0A	08/10/11	1224140
		Dilution Factor: 1				
		Analysis Time..: 04:36				
Sulfate		Work Order #: MLPP91AA		MB Lot-Sample #:	F1H120000-141	
	ND	0.50	mg/L	MCAWW 300.0A	08/10/11	1224141
		Dilution Factor: 1				
		Analysis Time..: 04:36				
Total Alkalinity		Work Order #: MLRFM1AA		MB Lot-Sample #:	F1H170000-090	
	ND	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1				
		Analysis Time..: 00:00				

(Continued on next page)

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids		Work Order #: MLTMD1AA		MB Lot-Sample #: F1H160000-283		
	ND	10.0	mg/L	MCAWW 160.1	08/16-08/18/11	1228283
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H100419 Work Order #...: MLRLL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: F1H180000-013 MLRLL1AD-LCSD
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 09:23
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	103	(70 - 130)			SW846 8260B
	104	(70 - 130)	0.58	(0-20)	SW846 8260B
Dibromochloromethane	102	(60 - 135)			SW846 8260B
	102	(60 - 135)	0.88	(0-20)	SW846 8260B
Vinyl chloride	94	(50 - 145)			SW846 8260B
	88	(50 - 145)	5.7	(0-20)	SW846 8260B
Bromomethane	106	(30 - 145)			SW846 8260B
	103	(30 - 145)	2.5	(0-20)	SW846 8260B
Chloroethane	94	(60 - 135)			SW846 8260B
	92	(60 - 135)	2.1	(0-20)	SW846 8260B
Acetone	92	(40 - 140)			SW846 8260B
	98	(40 - 140)	6.2	(0-20)	SW846 8260B
1,1-Dichloroethene	104	(70 - 130)			SW846 8260B
	104	(70 - 130)	0.19	(0-20)	SW846 8260B
Methylene chloride	91	(55 - 140)			SW846 8260B
	95	(55 - 140)	4.8	(0-20)	SW846 8260B
Carbon disulfide	98	(35 - 160)			SW846 8260B
	95	(35 - 160)	3.2	(0-20)	SW846 8260B
1,1-Dichloroethane	96	(70 - 135)			SW846 8260B
	95	(70 - 135)	0.38	(0-20)	SW846 8260B
2-Butanone	89	(30 - 150)			SW846 8260B
	94	(30 - 150)	5.9	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	98	(85 - 115)			SW846 8260B
	98	(85 - 115)	0.15	(0-20)	SW846 8260B
Chloroform	93	(65 - 135)			SW846 8260B
	96	(65 - 135)	3.2	(0-20)	SW846 8260B
1,1,1-Trichloroethane	101	(65 - 130)			SW846 8260B
	104	(65 - 130)	3.1	(0-20)	SW846 8260B
Carbon tetrachloride	103	(65 - 140)			SW846 8260B
	103	(65 - 140)	0.090	(0-20)	SW846 8260B
1,2-Dichloroethane	94	(70 - 130)			SW846 8260B
	97	(70 - 130)	2.9	(0-20)	SW846 8260B
Benzene	99	(80 - 120)			SW846 8260B
	99	(80 - 120)	0.14	(0-20)	SW846 8260B
Trichloroethene	93	(70 - 125)			SW846 8260B
	94	(70 - 125)	1.1	(0-20)	SW846 8260B
1,2-Dichloropropane	95	(75 - 125)			SW846 8260B
	95	(75 - 125)	0.37	(0-20)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H100419 Work Order #...: MLRLL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: F1H180000-013 MLRLL1AD-LCSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	98	(75 - 120)			SW846 8260B
	98	(75 - 120)	0.070	(0-20)	SW846 8260B
1,1,2-Trichloroethane	95	(75 - 125)			SW846 8260B
	100	(75 - 125)	5.0	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	105	(55 - 140)			SW846 8260B
	104	(55 - 140)	1.2	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	106	(75 - 120)	0.28	(0-20)	SW846 8260B
1,3-Dichlorobenzene	101	(75 - 125)			SW846 8260B
	102	(75 - 125)	0.78	(0-20)	SW846 8260B
1,4-Dichlorobenzene	96	(75 - 125)			SW846 8260B
	97	(75 - 125)	0.88	(0-20)	SW846 8260B
2-Hexanone	89	(55 - 130)			SW846 8260B
	88	(55 - 130)	1.3	(0-20)	SW846 8260B
4-Methyl-2-pentanone	96	(60 - 135)			SW846 8260B
	100	(60 - 135)	3.9	(0-20)	SW846 8260B
Chlorobenzene	98	(80 - 120)			SW846 8260B
	98	(80 - 120)	0.37	(0-20)	SW846 8260B
Bromoform	104	(70 - 130)			SW846 8260B
	108	(70 - 130)	3.6	(0-20)	SW846 8260B
Ethylbenzene	105	(75 - 125)			SW846 8260B
	105	(75 - 125)	0.47	(0-20)	SW846 8260B
Styrene	111	(65 - 135)			SW846 8260B
	111	(65 - 135)	0.090	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	92	(65 - 130)			SW846 8260B
	96	(65 - 130)	4.1	(0-20)	SW846 8260B
Tetrachloroethene	105	(45 - 150)			SW846 8260B
	102	(45 - 150)	3.2	(0-20)	SW846 8260B
1,2-Dichlorobenzene	98	(70 - 120)			SW846 8260B
	102	(70 - 120)	3.8	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
	111	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
	107	(85 - 115)
1,2-Dichloroethane-d4	97	(70 - 120)
	102	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)
	101	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H110000-087 **Prep Batch #...:** 1223087					
Uranium	108	(80 - 120)	SW846 6020A	08/11-08/13/11	MLJ8A1AC
		Dilution Factor: 1		Analysis Time..: 04:14	
LCS Lot-Sample#: F1H110000-088 **Prep Batch #...:** 1223088					
Arsenic	103	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1A2
		Dilution Factor: 1		Analysis Time..: 19:59	
Silver	93	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1A3
		Dilution Factor: 1		Analysis Time..: 19:59	
Aluminum	102	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1A4
		Dilution Factor: 1		Analysis Time..: 19:59	
Barium	107	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1A5
		Dilution Factor: 1		Analysis Time..: 19:59	
Beryllium	112	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1A6
		Dilution Factor: 1		Analysis Time..: 19:59	
Calcium	104	(80 - 120)	SW846 6010C	08/11-08/16/11	MLJ8D1A7
		Dilution Factor: 1		Analysis Time..: 16:13	
Cadmium	105	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1A8
		Dilution Factor: 1		Analysis Time..: 19:59	
Cobalt	102	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1A9
		Dilution Factor: 1		Analysis Time..: 19:59	
Chromium	103	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CA
		Dilution Factor: 1		Analysis Time..: 19:59	
Copper	102	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CC
		Dilution Factor: 1		Analysis Time..: 19:59	
Iron	106	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CD
		Dilution Factor: 1		Analysis Time..: 19:59	
Magnesium	100	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CE
		Dilution Factor: 1		Analysis Time..: 14:21	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	105	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CF
		Dilution Factor: 1	Analysis Time..: 19:59		
Sodium	103	(80 - 120)	SW846 6010C	08/11-08/16/11	MLJ8D1CG
		Dilution Factor: 1	Analysis Time..: 16:13		
Nickel	102	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CH
		Dilution Factor: 1	Analysis Time..: 19:59		
Lead	102	(80 - 120)	SW846 6010C	08/11-08/16/11	MLJ8D1CJ
		Dilution Factor: 1	Analysis Time..: 22:11		
Antimony	105	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CK
		Dilution Factor: 1	Analysis Time..: 19:59		
Selenium	106	(80 - 120)	SW846 6010C	08/11-08/16/11	MLJ8D1CL
		Dilution Factor: 1	Analysis Time..: 22:11		
Strontium	100	(80 - 120)	SW846 6010C	08/11-08/16/11	MLJ8D1CM
		Dilution Factor: 1	Analysis Time..: 16:13		
Thallium	100	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CN
		Dilution Factor: 1	Analysis Time..: 19:59		
Vanadium	103	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CP
		Dilution Factor: 1	Analysis Time..: 19:59		
Zinc	111	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CQ
		Dilution Factor: 1	Analysis Time..: 19:59		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLPPW1AC	LCS Lot-Sample#: F1H120000-136		
	93	(90 - 110)	MCAWW 300.0A	08/10/11	1224136
		Dilution Factor: 1	Analysis Time..: 04:22		
Chloride		Work Order #: MLPTM1AC	LCS Lot-Sample#: F1H150000-150		
	92	(90 - 110)	MCAWW 300.0A	08/11/11	1227150
		Dilution Factor: 1	Analysis Time..: 06:49		
Fluoride		Work Order #: MLPP01AC	LCS Lot-Sample#: F1H120000-137		
	95	(90 - 110)	MCAWW 300.0A	08/10/11	1224137
		Dilution Factor: 1	Analysis Time..: 04:22		
Nitrate		Work Order #: MLPP21AC	LCS Lot-Sample#: F1H120000-138		
	94	(90 - 110)	MCAWW 300.0A	08/10/11	1224138
		Dilution Factor: 1	Analysis Time..: 04:22		
Nitrite		Work Order #: MLTCL1AC	LCS Lot-Sample#: F1H120000-151		
	97	(90 - 110)	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 1	Analysis Time..: 04:05		
Nitrite		Work Order #: MLPTL1AC	LCS Lot-Sample#: F1H150000-147		
	96	(90 - 110)	MCAWW 300.0A	08/11/11	1227147
		Dilution Factor: 1	Analysis Time..: 06:49		
Phosphate as P, Ortho		Work Order #: MLPP71AC	LCS Lot-Sample#: F1H120000-140		
	97	(90 - 110)	MCAWW 300.0A	08/10/11	1224140
		Dilution Factor: 1	Analysis Time..: 04:22		
Sulfate		Work Order #: MLPP91AC	LCS Lot-Sample#: F1H120000-141		
	94	(90 - 110)	MCAWW 300.0A	08/10/11	1224141
		Dilution Factor: 1	Analysis Time..: 04:22		
Total Alkalinity		Work Order #: MLRFM1AC	LCS Lot-Sample#: F1H170000-090		
	92	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLRFM1AD	LCS Lot-Sample#: F1H170000-090		
	93	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids		Work Order #: MLTMD1AC	LCS Lot-Sample#: F1H160000-283		
	99	(90 - 113)	MCAWW 160.1	08/16-08/18/11	1228283
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER
Date Sampled...: 08/09/11 08:35 **Date Received..:** 08/10/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H100419-001 **Prep Batch #...:** 1223087							
Uranium	112	(80 - 120)			SW846 6020A	08/11-08/13/11	MLH8E1CG
	113	(80 - 120)	0.47	(0-20)	SW846 6020A	08/11-08/13/11	MLH8E1CH
		Dilution Factor: 1					
		Analysis Time..: 04:35					
MS Lot-Sample #: F1H100419-001 **Prep Batch #...:** 1223088							
Aluminum	104	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1CN
	104	(80 - 120)	0.11	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1CP
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Antimony	104	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1DL
	103	(80 - 120)	0.71	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1DM
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Arsenic	105	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1CJ
	104	(80 - 120)	1.2	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1CK
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Barium	103	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1CQ
	104	(80 - 120)	1.8	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1CR
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Beryllium	108	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1CT
	110	(80 - 120)	2.6	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1CU
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Cadmium	101	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1CX
	99	(80 - 120)	1.5	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1C0
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Calcium	180 N	(80 - 120)			SW846 6010C	08/11-08/16/11	MLH8E1CV
	130 N	(80 - 120)	3.6	(0-20)	SW846 6010C	08/11-08/16/11	MLH8E1CW
		Dilution Factor: 5					
		Analysis Time..: 16:25					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER
Date Sampled...: 08/09/11 08:35 **Date Received..:** 08/10/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	98	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1C3
	99	(80 - 120)	0.73	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1C4
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Cobalt	98	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1C1
	98	(80 - 120)	0.04	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1C2
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Copper	100	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1C5
	101	(80 - 120)	0.91	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1C6
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Iron	101	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1C7
	102	(80 - 120)	0.47	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1C8
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Lead	97	(80 - 120)			SW846 6010C	08/11-08/16/11	MLH8E1DJ
	97	(80 - 120)	0.23	(0-20)	SW846 6010C	08/11-08/16/11	MLH8E1DK
		Dilution Factor: 1					
		Analysis Time..: 22:24					
Magnesium	101	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1C9
	103	(80 - 120)	0.58	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1DA
		Dilution Factor: 1					
		Analysis Time..: 14:33					
Manganese	101	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1DC
	102	(80 - 120)	1.2	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1DD
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Nickel	98	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1DG
	97	(80 - 120)	1.7	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1DH
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Selenium	83	(80 - 120)			SW846 6010C	08/11-08/16/11	MLH8E1DN
	83	(80 - 120)	0.73	(0-20)	SW846 6010C	08/11-08/16/11	MLH8E1DP
		Dilution Factor: 1					
		Analysis Time..: 22:24					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER
Date Sampled...: 08/09/11 08:35 **Date Received..:** 08/10/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	92	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1CL
	92	(80 - 120)	0.08	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1CM
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Sodium	200 N	(80 - 120)			SW846 6010C	08/11-08/16/11	MLH8E1DE
	137 N	(80 - 120)	3.3	(0-20)	SW846 6010C	08/11-08/16/11	MLH8E1DF
		Dilution Factor: 5					
		Analysis Time..: 16:25					
Strontium	117	(80 - 120)			SW846 6010C	08/11-08/16/11	MLH8E1DQ
	110	(80 - 120)	2.3	(0-20)	SW846 6010C	08/11-08/16/11	MLH8E1DR
		Dilution Factor: 5					
		Analysis Time..: 16:25					
Thallium	96	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1DT
	94	(80 - 120)	1.7	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1DU
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Vanadium	100	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1DV
	102	(80 - 120)	1.3	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1DW
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Zinc	111	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1DX
	109	(80 - 120)	2.2	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1D0
		Dilution Factor: 1					
		Analysis Time..: 20:12					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 **Matrix.....:** WATER
Date Sampled...: 08/09/11 08:35 **Date Received..:** 08/10/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLH8E1D1		MS Lot-Sample #: F1H100419-001	
	95	(90 - 110)	MCAWW 300.0A	08/10/11	1224136
		Dilution Factor: 100	Analysis Time..: 05:20		
Chloride		Work Order #...: MLH8K1CG		MS Lot-Sample #: F1H100419-002	
	103	(90 - 110)	MCAWW 300.0A	08/12/11	1227150
		Dilution Factor: 1000	Analysis Time..: 04:41		
Fluoride		Work Order #...: MLH8E1D3		MS Lot-Sample #: F1H100419-001	
	95	(90 - 110)	MCAWW 300.0A	08/10/11	1224137
		Dilution Factor: 1	Analysis Time..: 04:51		
Nitrate		Work Order #...: MLH8E1D5		MS Lot-Sample #: F1H100419-001	
	106	(90 - 110)	MCAWW 300.0A	08/10/11	1224138
		Dilution Factor: 1	Analysis Time..: 04:51		
Nitrite		Work Order #...: MLH8E1EE		MS Lot-Sample #: F1H100419-001	
	80 N	(90 - 110)	MCAWW 300.0A	08/12/11	1227147
		Dilution Factor: 10	Analysis Time..: 03:14		
Nitrite		Work Order #...: MLLN11CN		MS Lot-Sample #: F1H120447-006	
	71 N	(90 - 110)	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 5	Analysis Time..: 04:49		
Phosphate as P, Ortho		Work Order #...: MLH8E1D9		MS Lot-Sample #: F1H100419-001	
	58 N	(90 - 110)	MCAWW 300.0A	08/10/11	1224140
		Dilution Factor: 1	Analysis Time..: 04:51		
Sulfate		Work Order #...: MLH8E1EC		MS Lot-Sample #: F1H100419-001	
	97	(90 - 110)	MCAWW 300.0A	08/10/11	1224141
		Dilution Factor: 100	Analysis Time..: 05:20		
Total Alkalinity		Work Order #...: MLHLC1EA		MS Lot-Sample #: F1H090496-002	
	98	(80 - 120)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 **Work Order #...:** MLH8E-SMP MLH8E-DUP **Matrix.....:** WATER

Date Sampled...: 08/09/11 08:35 **Date Received..:** 08/10/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H100419-001		
	108	109	mg/L	1.1	(0-20)	MCAWW 300.0A	08/10/11	1224136
		Dilution Factor: 100				Analysis Time..: 05:20		
Fluoride						SD Lot-Sample #: F1H100419-001		
	0.44	0.44	mg/L	0.22	(0-20)	MCAWW 300.0A	08/10/11	1224137
		Dilution Factor: 1				Analysis Time..: 04:51		
Nitrate						SD Lot-Sample #: F1H100419-001		
	0.012 B	0.015 B	mg/L	22	(0-20)	MCAWW 300.0A	08/10/11	1224138
		Dilution Factor: 1				Analysis Time..: 04:51		
Nitrite						SD Lot-Sample #: F1H100419-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/12/11	1227147
		Dilution Factor: 10				Analysis Time..: 03:14		
Phosphate as P, Ortho						SD Lot-Sample #: F1H100419-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/10/11	1224140
		Dilution Factor: 1				Analysis Time..: 04:51		
Sulfate						SD Lot-Sample #: F1H100419-001		
	748	742	mg/L	0.81	(0-20)	MCAWW 300.0A	08/10/11	1224141
		Dilution Factor: 100				Analysis Time..: 05:20		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 **Work Order #...:** MLLN1-SMP **Matrix.....:** WATER
MLLN1-DUP
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrite						SD Lot-Sample #: F1H120447-006		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/12/11	1224151
			Dilution Factor: 5			Analysis Time..: 04:49		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 **Work Order #...:** MLH8K-SMP MLH8K-DUP **Matrix.....:** WATER

Date Sampled...: 08/09/11 09:30 **Date Received..:** 08/10/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #:	F1H100419-002	
	2180	2200	mg/L	0.93	(0-20)	MCAWW 300.0A	08/12/11	1227150

Dilution Factor: 1000 Analysis Time..: 04:41

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 **Work Order #...:** MLH8M-SMP MLH8M-DUP **Matrix.....:** WATER

Date Sampled...: 08/09/11 14:45 **Date Received..:** 08/10/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H100419-003		
	936	944	mg/L	0.85	(0-0.0)	MCAWW 160.1	08/16-08/18/11	1228283
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 **Work Order #...:** MLHLC-SMP MLHLC-DUP **Matrix.....:** WATER

Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #:	F1H090496-002	
	252	252	mg/L	0.0	(0-20)	MCAWW 310.1	08/17/11	1229090
			Dilution Factor: 1			Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001

Radiochemistry

Lab Sample ID: F1H100419-001
Work Order: MLH8E
Matrix: WATER

Date Collected: 08/09/11 0835
Date Received: 08/10/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 80
Uranium 234	0.212		0.086	0.100	0.037	08/17/11	08/17/11
Uranium 235/236	0.018	U	0.029	0.100	0.047	08/17/11	08/17/11
Uranium 238	0.185		0.080	0.100	0.044	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001

Radiochemistry

Lab Sample ID: F1H100419-002
Work Order: MLH8K
Matrix: WATER

Date Collected: 08/09/11 0930
Date Received: 08/10/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 87
Uranium 234	0.51		0.13	0.10	0.02	08/17/11	08/17/11
Uranium 235/236	0.029		0.033	0.100	0.026	08/17/11	08/17/11
Uranium 238	0.291		0.098	0.100	0.021	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001

Radiochemistry

Lab Sample ID: F1H100419-003
Work Order: MLH8M
Matrix: WATER

Date Collected: 08/09/11 1445
Date Received: 08/10/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1229042		Yld % 60
Uranium 234	2.78		0.42	0.10	0.03	08/17/11	08/17/11
Uranium 235/236	0.092		0.070	0.100	0.036	08/17/11	08/17/11
Uranium 238	2.68		0.41	0.10	0.03	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H100419-004
Work Order: MLH8P
Matrix: WATER

Date Collected: 08/09/11 0835
Date Received: 08/10/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1229042		Yld % 79
Uranium 234	0.50		0.14	0.10	0.05	08/17/11	08/17/11
Uranium 235/236	0.022	U	0.032	0.100	0.030	08/17/11	08/17/11
Uranium 238	0.47		0.14	0.10	0.04	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H100419-005
Work Order: MLH8V
Matrix: WATER

Date Collected: 08/09/11 0930
Date Received: 08/10/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 85
Uranium 234	0.253		0.094	0.100	0.037	08/17/11	08/17/11
Uranium 235/236	0.0	U	0.010	0.100	0.028	08/17/11	08/17/11
Uranium 238	0.189		0.080	0.100	0.022	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H100419-006
Work Order: MLH8W
Matrix: WATER

Date Collected: 08/09/11 1445
Date Received: 08/10/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 51
Uranium 234	2.70		0.44	0.10	0.04	08/17/11	08/17/11
Uranium 235/236	0.16		0.11	0.10	0.08	08/17/11	08/17/11
Uranium 238	2.30		0.40	0.10	0.04	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H100419
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1229042		Yld % 83		F1H170000-042B
Uranium 234	-0.0060	U	0.0070	0.100	0.047		08/17/11	08/17/11
Uranium 235/236	-0.0025	U	0.0050	0.100	0.046		08/17/11	08/17/11
Uranium 238	0.020	U	0.028	0.100	0.043		08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H100419
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ +/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/L		A-01-R MOD			F1H170000-042C
Uranium 234	3.27	3.26	0.42	0.04	82	100	(76 - 136)
Uranium 238	3.39	3.50	0.44	0.02	82	103	(76 - 134)
	Batch #:	1229042		Analysis Date:	08/17/11		

NOTE(S):

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1H100419
Matrix: WATER

Date Sampled: 08/05/11
Date Received: 08/06/11

Parameter	SAMPLE Result	Total Uncert. (2σ+/-)	% Yld	DUPLICATE Result	Total Uncert. (2 σ+/-)	% Yld	QC Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H090496-005**	
Uranium 234	21.6	2.1	64	23.1	2.2	62	7	%RPD
Uranium 235/236	1.05	0.26	64	1.22	0.28	62	15	%RPD
Uranium 238	21.2	2.0	64	22.7	2.2	62	7	%RPD
Batch #:	1229042 (Sample)			1229042 (Duplicate)				

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

F1H100419

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R252,2-12,METS,

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-10

Project: 140415
Guteryl Steel
Analytical Due Date: 2011-08-18

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 0
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	MW705D0001			2011-08-09 / 835	MLH8E	WATER

SAMPLE COMMENTS:

MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846 8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW 160.1 W	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW 300.0A W	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW 300.0A W	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW 300.0A W	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06			
XX	CX	MCAW 300.0A W	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW 300.0A W	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW 300.0A W	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW 300.0A W	WATER, 300.0A, Nitrile as N	88	NO SAMPLE PREPARATIDN PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H100419

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R252,2-12,METS,

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 0

Date Received: 2011-08-10

Analytical Due Date: 2011-08-18

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	MW705DD0001			2011-08-09 / 930	MLH8K	WATER

SAMPLE COMMENTS:

ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	08	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

Storage Loc: R252,2-12,METS,

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-10

Analytical Due Date: 2011-08-18

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A04DMW711D0001			2011-08-09 / 1445	MLH8M	WATER

SAMPLE COMMENTS:

SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

Storage Loc: R252,2-12,METS,

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 0

Date Received: 2011-08-10

Analytical Due Date: 2011-08-18

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE # 4 | CLIENT SAMPLE ID: MW705D0001 DISSOLVED | Site ID | Client Matrix: WATER | DATE/TIME SAMPLED: 2011-08-09 / 835 | WORKORDER: MLH8P

SAMPLE COMMENTS:

NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromalography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE # 5 | CLIENT SAMPLE ID: MW705DD0001 DISSOLVED | Site ID | Client Matrix: WATER | DATE/TIME SAMPLED: 2011-08-09 / 930 | WORKORDER: MLH8V

SAMPLE COMMENTS:

AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

Storage Loc: R252,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-10

Analytical Due Date: 2011-08-18

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LCT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	A04DMW711D0001 DISSOLVED			2011-08-09 / 1445	MLH8W	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H100419

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R252,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guteryl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-10
Analytical Due Date: 2011-08-18
Report Due Date: 2011-08-22
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

stAmerica St. Louis CUK 4560
15 Rider Trail North

h City, MO 63045
ne 314.298.8566 fax 314.298.8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/09/2011	COC No: 005
iw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
0 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
cinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below _____			SDG No.
3) 782-4807 FAX	[X] 2 weeks			
ject Name: Former Guteri Specialty Steel Corporation FUSRA	[ ] 1 week			
: Lockport, NY	[ ] 2 days			
#	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury				Sample Specific Notes:
705D0001	8/9/2011	0835	Grab	GW	10	X		X	X	X	X	X	X	X							3xVOA	4xLP 2x250P 1x500P
705DD0001	8/9/2011	0930	Grab	GW	10	X		X	X	X	X	X	X	X							↓	↓ ↓ ↓
DMW711D0001	8/9/2011	1445	Grab	GW	10	X		X	X	X	X	X	X	X							↓	↓ ↓ ↓

servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

sible Hazard Identification

[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

[ ] Return To Client [X] Disposal By Lab [ ] Archive For _____ Months

cial Instructions/QC Requirements & Comments:

nquished by:	Company: Shaw E & I. Inc.	Date/Time: 8/9/11 1650	Received by:	Company: BFLO	Date/Time: 08-09-11 16:50
nquished by:	Company: BFLO	Date/Time: 08-09-11 17:15	Received by:	Company: TA STL	Date/Time: 08/10/11 0920
nquished by:	Company: TA STL	Date/Time: 08/10/11	Received by:	Company:	Date/Time:

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): FIH100419 TestAmerica St. Louis

CUR Form #: 456

CONDITION UPON RECEIPT FORM

Client: SHAW

Quote No: 89251

COC/RFA No: 005

Initiated By: NVO Date: 8/10/11 Time: 0920

Shipping Information

Shipper: FedEx UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*				Sample Temperature (s):**			
1.	4485 0258 3252	6.		1.	2	6.	
2.	4485 0258 3263	7.		2.	AMBIENT	7.	
3.		8.		3.		8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

Client Contact Name: _____ Informed by: _____

1. Sample(s) processed "as is"
2. Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 8/10/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guteryl Steel

Lot #: F1H110460

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 24, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H110460

This report contains the analytical results for the 14 samples received under chain of custody by TestAmerica in St. Louis on August 11, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1230199
Tertahydrofuran was removed from the initial calibration lowest point due to poor response. Isobutanol, n-Butanol, 2-Chloroethylvinyl ether, 4-Methyl-2-pentanone and 2-Hexanone were removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration. The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

Affected Samples:
F1H110460 (8): A04MW604D0001
F1H110460 (9): A04DMW709D0001
F1H110460 (10): A04BMW605D0001
F1H110460 (11): A04BMW260001
F1H110460 (12): A04BMW9000
F1H110460 (13): A04BMW9001
F1H110460 (14): A04DMW704DD0001

The sample was screened to determine if high concentrations of target analytes were present. The sample was analyzed at a dilution of 5X and 50X due to high concentrations of target analytes. The reporting limit has been adjusted for the dilution since no analysis at a lesser dilution was performed.

Affected Samples:
F1H110460 (11): A04BMW260001

The internal standard(s) recovery is outside the lower QC limit, indicating a potential positive bias. There were no target analytes associated with this internal standard observed above the reporting limit in the sample; therefore the sample data was not adversely affected by this excursion. The original sample results are provided.

Affected Samples:
F1H110460 (10): A04BMW605D0001
F1H110460 (11): A04BMW260001
F1H110460 (12): A04BMW9000

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1224018
Strontium was observed in the CCB above the reporting limit. Associated samples which exhibit concentrations greater than ten (10) times the concentrations observed in the CCB, do not require re-analysis. Original results are reported.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H110460 (1): A04MW604D0001 DISSOLVED
F1H110460 (2): A04DMW709DD0001 DISSOLVED
F1H110460 (3): A04BMW605D0001 DISSOLVED
F1H110460 (4): A04BMW260001 DISSOLVED
F1H110460 (6): A04BMW9001 DISSOLVED
F1H110460 (7): A04DMW704DD0001 DISSOLVED
F1H110460 (8): A04MW604D0001
F1H110460 (9): A04DMW709D0001
F1H110460 (11): A04BMW260001
F1H110460 (13): A04BMW9001
F1H110460 (14): A04DMW704DD0001

Fluoride (MCAWW 300.0A)

Batch: 1224143
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H110460 (10): A04BMW605D0001
F1H110460 (12): A04BMW9000

Nitrate as N (MCAWW 300.0A)

Batch: 1224144
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H110460 (13): A04BMW9001
F1H110460 (14): A04DMW704DD0001

Sulfate (MCAWW 300.0A)

Batch: 1224147
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H110460 (8): A04MW604D0001
F1H110460 (9): A04DMW709D0001
F1H110460 (10): A04BMW605D0001
F1H110460 (11): A04BMW260001
F1H110460 (12): A04BMW9000
F1H110460 (13): A04BMW9001
F1H110460 (14): A04DMW704DD0001

Nitrite as N (MCAWW 300.0A)

Batch: 1224145
The following samples were reported ND for Nitrite, due to matrix interference with Chloride in the undiluted analyse. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H110460 (8): A04MW604D0001
F1H110460 (9): A04DMW709D0001
F1H110460 (10): A04BMW605D0001
F1H110460 (11): A04BMW260001
F1H110460 (12): A04BMW9000
F1H110460 (13): A04BMW9001
F1H110460 (14): A04DMW704DD0001

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1224146
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H110460 (8): A04MW604D0001
F1H110460 (9): A04DMW709D0001
F1H110460 (10): A04BMW605D0001
F1H110460 (11): A04BMW260001
F1H110460 (12): A04BMW9000
F1H110460 (13): A04BMW9001
F1H110460 (14): A04DMW704DD0001

Isotopic Uranium by Alpha Spectroscopy (A-01-R MOD)

Batch: 1231145
The reporting limit for Uranium 238 was not met due to the presence of the nuclide in the sample. The data is reported with the MDA achieved.

Affected Samples:
F1H110460 (3): A04BMW605D0001 DISSOLVED
F1H110460 (10): A04BMW605D0001

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H110460

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H110460

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLKHP	001	A04MW604D0001 DISSOLVED	08/10/11	08:30
MLKHV	002	A04DMW709DD0001 DISSOLVED	08/10/11	09:30
MLKH4	003	A04BMW605D0001 DISSOLVED	08/10/11	10:15
MLKH8	004	A04BMW260001 DISSOLVED	08/10/11	13:20
MLKJD	005	A04BMW9000 DISSOLVED	08/10/11	
MLKJE	006	A04BMW9001 DISSOLVED	08/10/11	
MLKJJ	007	A04DMW704DD0001 DISSOLVED	08/10/11	11:15
MLKJL	008	A04MW604D0001	08/10/11	08:30
MLKJ5	009	A04DMW709D0001	08/10/11	09:30
MLKKA	010	A04BMW605D0001	08/10/11	10:15
MLKKD	011	A04BMW260001	08/10/11	13:20
MLKKH	012	A04BMW9000	08/10/11	
MLKKK	013	A04BMW9001	08/10/11	
MLKKN	014	A04DMW704DD0001	08/10/11	11:15

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-001 Matrix.....: WATER
Date Sampled...: 08/10/11 08:30 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**101**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKHP1A3**
		Dilution Factor: 1		Analysis Time..: 21:32		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AD
		Dilution Factor: 1		Analysis Time..: 13:26		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AE
		Dilution Factor: 1		Analysis Time..: 13:26		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AC
		Dilution Factor: 1		Analysis Time..: 13:26		
Barium	**74.3**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHP1AF**
		Dilution Factor: 1		Analysis Time..: 13:26		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AG
		Dilution Factor: 1		Analysis Time..: 13:26		
Calcium	**98600**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHP1AH**
		Dilution Factor: 1		Analysis Time..: 13:26		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AJ
		Dilution Factor: 1		Analysis Time..: 13:26		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AK
		Dilution Factor: 1		Analysis Time..: 13:26		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AL
		Dilution Factor: 1		Analysis Time..: 13:26		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AM
		Dilution Factor: 1		Analysis Time..: 13:26		
Iron	ND	100	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AN
		Dilution Factor: 1		Analysis Time..: 13:26		
Magnesium	**25800**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHP1AP**
		Dilution Factor: 1		Analysis Time..: 13:26		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**33.6**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHP1AQ**
		Dilution Factor: 1		Analysis Time..: 13:26		
Sodium	**296000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKHP1AR**
		Dilution Factor: 5		Analysis Time..: 16:26		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AT
		Dilution Factor: 1		Analysis Time..: 13:26		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AU
		Dilution Factor: 1		Analysis Time..: 13:26		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AV
		Dilution Factor: 1		Analysis Time..: 13:26		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AW
		Dilution Factor: 1		Analysis Time..: 13:26		
Strontium	**413**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHP1AX**
		Dilution Factor: 1		Analysis Time..: 13:26		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1A0
		Dilution Factor: 1		Analysis Time..: 13:26		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1A1
		Dilution Factor: 1		Analysis Time..: 13:26		
Zinc	**118**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHP1A2**
		Dilution Factor: 1		Analysis Time..: 13:26		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-002 Matrix.....: WATER
Date Sampled...: 08/10/11 09:30 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**55.4**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKHV1AE**
		Dilution Factor: 1		Analysis Time..: 21:58		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AJ
		Dilution Factor: 1		Analysis Time..: 13:58		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AK
		Dilution Factor: 1		Analysis Time..: 13:58		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AH
		Dilution Factor: 1		Analysis Time..: 13:58		
Barium	**68.5**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHV1AL**
		Dilution Factor: 1		Analysis Time..: 13:58		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AM
		Dilution Factor: 1		Analysis Time..: 13:58		
Calcium	**121000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHV1AN**
		Dilution Factor: 1		Analysis Time..: 13:58		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AP
		Dilution Factor: 1		Analysis Time..: 13:58		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AQ
		Dilution Factor: 1		Analysis Time..: 13:58		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AR
		Dilution Factor: 1		Analysis Time..: 13:58		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AT
		Dilution Factor: 1		Analysis Time..: 13:58		
Iron	**127**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHV1AU**
		Dilution Factor: 1		Analysis Time..: 13:58		
Magnesium	**37800**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHV1AV**
		Dilution Factor: 1		Analysis Time..: 13:58		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**25.6**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHV1AW**
		Dilution Factor: 1		Analysis Time..: 13:58		
Sodium	**203000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKHV1AX**
		Dilution Factor: 5		Analysis Time..: 16:45		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1A0
		Dilution Factor: 1		Analysis Time..: 13:58		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1A1
		Dilution Factor: 1		Analysis Time..: 13:58		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1A2
		Dilution Factor: 1		Analysis Time..: 13:58		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1A3
		Dilution Factor: 1		Analysis Time..: 13:58		
Strontium	**1240**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHV1A4**
		Dilution Factor: 1		Analysis Time..: 13:58		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AA
		Dilution Factor: 1		Analysis Time..: 13:58		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AC
		Dilution Factor: 1		Analysis Time..: 13:58		
Zinc	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AD
		Dilution Factor: 1		Analysis Time..: 13:58		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-003 **Matrix.....:** WATER
Date Sampled...: 08/10/11 10:15 **Date Received..:** 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**209**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKH41AE**
		Dilution Factor: 1		Analysis Time..: 22:12		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AJ
		Dilution Factor: 1		Analysis Time..: 14:11		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AK
		Dilution Factor: 1		Analysis Time..: 14:11		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AH
		Dilution Factor: 1		Analysis Time..: 14:11		
Barium	**46.5 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH41AL**
		Dilution Factor: 1		Analysis Time..: 14:11		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AM
		Dilution Factor: 1		Analysis Time..: 14:11		
Calcium	**68100**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH41AN**
		Dilution Factor: 1		Analysis Time..: 14:11		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AP
		Dilution Factor: 1		Analysis Time..: 14:11		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AQ
		Dilution Factor: 1		Analysis Time..: 14:11		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AR
		Dilution Factor: 1		Analysis Time..: 14:11		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AT
		Dilution Factor: 1		Analysis Time..: 14:11		
Iron	**132**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH41AU**
		Dilution Factor: 1		Analysis Time..: 14:11		
Magnesium	**34300**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH41AV**
		Dilution Factor: 1		Analysis Time..: 14:11		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	278	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AW
		Dilution Factor: 1		Analysis Time..: 14:11		
Sodium	60100 B	5000	ug/L	SW846 6010C	08/12-08/19/11	MLKH41AX
		Dilution Factor: 5		Analysis Time..: 16:58		
Nickel	19.3 J	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41A0
		Dilution Factor: 1		Analysis Time..: 14:11		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41A1
		Dilution Factor: 1		Analysis Time..: 14:11		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41A2
		Dilution Factor: 1		Analysis Time..: 14:11		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41A3
		Dilution Factor: 1		Analysis Time..: 14:11		
Strontium	178	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41A4
		Dilution Factor: 1		Analysis Time..: 14:11		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AA
		Dilution Factor: 1		Analysis Time..: 14:11		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AC
		Dilution Factor: 1		Analysis Time..: 14:11		
Zinc	22.5	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AD
		Dilution Factor: 1		Analysis Time..: 14:11		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-004 **Matrix.....:** WATER
Date Sampled...: 08/10/11 13:20 **Date Received..:** 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**94.6**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKH81AE**
		Dilution Factor: 1		Analysis Time..: 22:18		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AJ
		Dilution Factor: 1		Analysis Time..: 14:24		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AK
		Dilution Factor: 1		Analysis Time..: 14:24		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AH
		Dilution Factor: 1		Analysis Time..: 14:24		
Barium	**59.1**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH81AL**
		Dilution Factor: 1		Analysis Time..: 14:24		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AM
		Dilution Factor: 1		Analysis Time..: 14:24		
Calcium	**85500**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH81AN**
		Dilution Factor: 1		Analysis Time..: 14:24		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AP
		Dilution Factor: 1		Analysis Time..: 14:24		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AQ
		Dilution Factor: 1		Analysis Time..: 14:24		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AR
		Dilution Factor: 1		Analysis Time..: 14:24		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AT
		Dilution Factor: 1		Analysis Time..: 14:24		
Iron	**52.9 J**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH81AU**
		Dilution Factor: 1		Analysis Time..: 14:24		
Magnesium	**23000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH81AV**
		Dilution Factor: 1		Analysis Time..: 14:24		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**115**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH81AW**
		Dilution Factor: 1		Analysis Time..: 14:24		
Sodium	**321000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKH81AX**
		Dilution Factor: 5		Analysis Time..: 17:11		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81A0
		Dilution Factor: 1		Analysis Time..: 14:24		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81A1
		Dilution Factor: 1		Analysis Time..: 14:24		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81A2
		Dilution Factor: 1		Analysis Time..: 14:24		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81A3
		Dilution Factor: 1		Analysis Time..: 14:24		
Strontium	**382**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH81A4**
		Dilution Factor: 1		Analysis Time..: 14:24		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AA
		Dilution Factor: 1		Analysis Time..: 14:24		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AC
		Dilution Factor: 1		Analysis Time..: 14:24		
Zinc	**57.5**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH81AD**
		Dilution Factor: 1		Analysis Time..: 14:24		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-005 Matrix.....: WATER
Date Sampled...: 08/10/11 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	212	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKJD1AE**
		Dilution Factor: 1		Analysis Time..: 22:38		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AJ
		Dilution Factor: 1		Analysis Time..: 14:30		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AK
		Dilution Factor: 1		Analysis Time..: 14:30		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AH
		Dilution Factor: 1		Analysis Time..: 14:30		
Barium	**45.6 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1AL**
		Dilution Factor: 1		Analysis Time..: 14:30		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AM
		Dilution Factor: 1		Analysis Time..: 14:30		
Calcium	**67200**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1AN**
		Dilution Factor: 1		Analysis Time..: 14:30		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AP
		Dilution Factor: 1		Analysis Time..: 14:30		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AQ
		Dilution Factor: 1		Analysis Time..: 14:30		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AR
		Dilution Factor: 1		Analysis Time..: 14:30		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AT
		Dilution Factor: 1		Analysis Time..: 14:30		
Iron	**121**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1AU**
		Dilution Factor: 1		Analysis Time..: 14:30		
Magnesium	**34000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1AV**
		Dilution Factor: 1		Analysis Time..: 14:30		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**278**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1AW**
		Dilution Factor: 1		Analysis Time..: 14:30		
Sodium	**62400 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKJD1AX**
		Dilution Factor: 5		Analysis Time..: 17:30		
Nickel	**19.8 J**	**40.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1A0**
		Dilution Factor: 1		Analysis Time..: 14:30		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1A1
		Dilution Factor: 1		Analysis Time..: 14:30		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1A2
		Dilution Factor: 1		Analysis Time..: 14:30		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1A3
		Dilution Factor: 1		Analysis Time..: 14:30		
Strontium	**180**	**25.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1A4**
		Dilution Factor: 5		Analysis Time..: 08:44		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AA
		Dilution Factor: 1		Analysis Time..: 14:30		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AC
		Dilution Factor: 1		Analysis Time..: 14:30		
Zinc	**21.2**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1AD**
		Dilution Factor: 1		Analysis Time..: 14:30		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-006 Matrix.....: WATER
Date Sampled...: 08/10/11 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**26.9**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKJE1AE**
		Dilution Factor: 1		Analysis Time..: 22:45		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AJ
		Dilution Factor: 1		Analysis Time..: 14:37		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AK
		Dilution Factor: 1		Analysis Time..: 14:37		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AH
		Dilution Factor: 1		Analysis Time..: 14:37		
Barium	**55.4**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJE1AL**
		Dilution Factor: 1		Analysis Time..: 14:37		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AM
		Dilution Factor: 1		Analysis Time..: 14:37		
Calcium	**273000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJE1AN**
		Dilution Factor: 1		Analysis Time..: 14:37		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AP
		Dilution Factor: 1		Analysis Time..: 14:37		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AQ
		Dilution Factor: 1		Analysis Time..: 14:37		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AR
		Dilution Factor: 1		Analysis Time..: 14:37		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AT
		Dilution Factor: 1		Analysis Time..: 14:37		
Iron	ND	100	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AU
		Dilution Factor: 1		Analysis Time..: 14:37		
Magnesium	**107000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJE1AV**
		Dilution Factor: 1		Analysis Time..: 14:37		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**68.8**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJE1AW**
		Dilution Factor: 1		Analysis Time..: 14:37		
Sodium	**109000 B**	**10000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKJE1AX**
		Dilution Factor: 10		Analysis Time..: 17:36		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1A0
		Dilution Factor: 1		Analysis Time..: 14:37		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1A1
		Dilution Factor: 1		Analysis Time..: 14:37		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1A2
		Dilution Factor: 1		Analysis Time..: 14:37		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1A3
		Dilution Factor: 1		Analysis Time..: 14:37		
Strontium	**4730**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJE1A4**
		Dilution Factor: 1		Analysis Time..: 14:37		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AA
		Dilution Factor: 1		Analysis Time..: 14:37		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AC
		Dilution Factor: 1		Analysis Time..: 14:37		
Zinc	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AD
		Dilution Factor: 1		Analysis Time..: 14:37		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-007 Matrix.....: WATER
Date Sampled...: 08/10/11 11:15 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	26.3	1.0	ug/L	SW846 6020A	08/12-08/17/11	MLKJJ1AE
		Dilution Factor: 1		Analysis Time..: 22:52		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AJ
		Dilution Factor: 1		Analysis Time..: 14:43		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AK
		Dilution Factor: 1		Analysis Time..: 14:43		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AH
		Dilution Factor: 1		Analysis Time..: 14:43		
Barium	55.8	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AL
		Dilution Factor: 1		Analysis Time..: 14:43		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AM
		Dilution Factor: 1		Analysis Time..: 14:43		
Calcium	275000	1000	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AN
		Dilution Factor: 1		Analysis Time..: 14:43		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AP
		Dilution Factor: 1		Analysis Time..: 14:43		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AQ
		Dilution Factor: 1		Analysis Time..: 14:43		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AR
		Dilution Factor: 1		Analysis Time..: 14:43		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AT
		Dilution Factor: 1		Analysis Time..: 14:43		
Iron	ND	100	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AU
		Dilution Factor: 1		Analysis Time..: 14:43		
Magnesium	107000	1000	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AV
		Dilution Factor: 1		Analysis Time..: 14:43		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**66.7**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJJ1AW**
		Dilution Factor: 1		Analysis Time..: 14:43		
Sodium	**112000 B**	**10000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKJJ1AX**
		Dilution Factor: 10		Analysis Time..: 17:43		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1A0
		Dilution Factor: 1		Analysis Time..: 14:43		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1A1
		Dilution Factor: 1		Analysis Time..: 14:43		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1A2
		Dilution Factor: 1		Analysis Time..: 14:43		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1A3
		Dilution Factor: 1		Analysis Time..: 14:43		
Strontium	**4890**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJJ1A4**
		Dilution Factor: 1		Analysis Time..: 14:43		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AA
		Dilution Factor: 1		Analysis Time..: 14:43		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AC
		Dilution Factor: 1		Analysis Time..: 14:43		
Zinc	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AD
		Dilution Factor: 1		Analysis Time..: 14:43		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-008 Work Order #...: MLKJL1AC Matrix.....: WATER
Date Sampled...: 08/10/11 08:30 Date Received..: 08/11/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 15:34
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.41 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**18**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**3.9**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**21**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**0.42 J**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**42**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**16**	**1.0**	**ug/L**
Vinyl chloride	**1.2 J**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-008 **Work Order #...:** MLKJL1AC **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	112	(85 - 115)
1,2-Dichloroethane-d4	108	(70 - 120)
4-Bromofluorobenzene	105	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001

TOTAL Metals

Lot-Sample #...: F1H110460-008 Matrix.....: WATER
Date Sampled...: 08/10/11 08:30 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**103**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKJL1A5**
		Dilution Factor: 1		Analysis Time..: 22:58		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AF
		Dilution Factor: 1		Analysis Time..: 14:50		
Aluminum	**725**	**200**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1AG**
		Dilution Factor: 1		Analysis Time..: 14:50		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AE
		Dilution Factor: 1		Analysis Time..: 14:50		
Barium	**78.7**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1AH**
		Dilution Factor: 1		Analysis Time..: 14:50		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AJ
		Dilution Factor: 1		Analysis Time..: 14:50		
Calcium	**106000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1AK**
		Dilution Factor: 1		Analysis Time..: 14:50		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AL
		Dilution Factor: 1		Analysis Time..: 14:50		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AM
		Dilution Factor: 1		Analysis Time..: 14:50		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AN
		Dilution Factor: 1		Analysis Time..: 14:50		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AP
		Dilution Factor: 1		Analysis Time..: 14:50		
Iron	**552**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1AQ**
		Dilution Factor: 1		Analysis Time..: 14:50		
Magnesium	**28400**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1AR**
		Dilution Factor: 1		Analysis Time..: 14:50		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001

TOTAL Metals

Lot-Sample #...: F1H110460-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**114**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1AT**
		Dilution Factor: 1		Analysis Time..: 14:50		
Sodium	**307000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKJL1AU**
		Dilution Factor: 5		Analysis Time..: 17:49		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AV
		Dilution Factor: 1		Analysis Time..: 14:50		
Lead	**2.5 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1AW**
		Dilution Factor: 1		Analysis Time..: 14:50		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AX
		Dilution Factor: 1		Analysis Time..: 14:50		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1A0
		Dilution Factor: 1		Analysis Time..: 14:50		
Strontium	**419**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1A1**
		Dilution Factor: 1		Analysis Time..: 14:50		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1A2
		Dilution Factor: 1		Analysis Time..: 14:50		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1A3
		Dilution Factor: 1		Analysis Time..: 14:50		
Zinc	**170**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1A4**
		Dilution Factor: 1		Analysis Time..: 14:50		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001

General Chemistry

Lot-Sample #...: F1H110460-008 Work Order #...: MLKJL Matrix.....: WATER
Date Sampled...: 08/10/11 08:30 Date Received..: 08/11/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	471	100	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 500		Analysis Time..: 11:47		
Fluoride	1.2	0.10	mg/L	MCAWW 300.0A	08/11/11	1224143
		Dilution Factor: 1		Analysis Time..: 07:18		
Nitrate	0.044	0.020	mg/L	MCAWW 300.0A	08/11/11	1224144
		Dilution Factor: 1		Analysis Time..: 07:18		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/11/11	1224145
		Dilution Factor: 10		Analysis Time..: 07:33		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/11/11	1224146
		Dilution Factor: 1		Analysis Time..: 07:18		
Sulfate	50.2	5.0	mg/L	MCAWW 300.0A	08/11/11	1224147
		Dilution Factor: 10		Analysis Time..: 07:33		
Total Alkalinity	323	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1240	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709D0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-009 Work Order #...: MLKJ51AN Matrix.....: WATER
Date Sampled...: 08/10/11 09:30 Date Received..: 08/11/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 16:00
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	**0.13 J**	**1.0**	**ug/L**
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**0.18 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**0.13 J**	**2.0**	**ug/L**
Chloroform	**0.49 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**33**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**13**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**31**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**0.25 J**	**1.0**	**ug/L**
Toluene	**0.32 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	**19**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**16**	**1.0**	**ug/L**
Vinyl chloride	**1.3 J**	**2.0**	**ug/L**
Xylenes (total)	**0.47 J**	**5.0**	**ug/L**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709D0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-009 **Work Order #...:** MLKJ51AN **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
1,2-Dichloroethane-d4	101	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709D0001

TOTAL Metals

Lot-Sample #...: F1H110460-009 Matrix.....: WATER
Date Sampled...: 08/10/11 09:30 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	52.8	1.0	ug/L	SW846 6020A	08/12-08/17/11	MLKJ51AG
		Dilution Factor: 1		Analysis Time..: 23:05		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AR
		Dilution Factor: 1		Analysis Time..: 15:09		
Aluminum	102 J	200	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AT
		Dilution Factor: 1		Analysis Time..: 15:09		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AQ
		Dilution Factor: 1		Analysis Time..: 15:09		
Barium	73.4	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AU
		Dilution Factor: 1		Analysis Time..: 15:09		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AV
		Dilution Factor: 1		Analysis Time..: 15:09		
Calcium	125000	1000	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AW
		Dilution Factor: 1		Analysis Time..: 15:09		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AX
		Dilution Factor: 1		Analysis Time..: 15:09		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A0
		Dilution Factor: 1		Analysis Time..: 15:09		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A1
		Dilution Factor: 1		Analysis Time..: 15:09		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A2
		Dilution Factor: 1		Analysis Time..: 15:09		
Iron	239	100	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A3
		Dilution Factor: 1		Analysis Time..: 15:09		
Magnesium	38500	1000	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A4
		Dilution Factor: 1		Analysis Time..: 15:09		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709D0001

TOTAL Metals

Lot-Sample #...: F1H110460-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**35.7**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJ51A5**
		Dilution Factor: 1		Analysis Time..: 15:09		
Sodium	**203000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKJ51A6**
		Dilution Factor: 5		Analysis Time..: 17:55		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A7
		Dilution Factor: 1		Analysis Time..: 15:09		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A8
		Dilution Factor: 1		Analysis Time..: 15:09		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A9
		Dilution Factor: 1		Analysis Time..: 15:09		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AA
		Dilution Factor: 1		Analysis Time..: 15:09		
Strontium	**1270**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJ51AC**
		Dilution Factor: 1		Analysis Time..: 15:09		
Thallium	**4.4 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJ51AD**
		Dilution Factor: 1		Analysis Time..: 15:09		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AE
		Dilution Factor: 1		Analysis Time..: 15:09		
Zinc	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AF
		Dilution Factor: 1		Analysis Time..: 15:09		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709D0001

General Chemistry

Lot-Sample #...: F1H110460-009 Work Order #...: MLKJ5 Matrix.....: WATER
Date Sampled...: 08/10/11 09:30 Date Received..: 08/11/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	346	20.0	mg/L	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 100		Analysis Time..: 12:16		
Fluoride	0.98	0.10	mg/L	MCAWW 300.0A	08/11/11	1224143
		Dilution Factor: 1		Analysis Time..: 09:28		
Nitrate	0.014 B	0.020	mg/L	MCAWW 300.0A	08/11/11	1224144
		Dilution Factor: 1		Analysis Time..: 09:28		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/11/11	1224145
		Dilution Factor: 10		Analysis Time..: 10:11		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/11/11	1224146
		Dilution Factor: 1		Analysis Time..: 09:28		
Sulfate	153	5.0	mg/L	MCAWW 300.0A	08/11/11	1224147
		Dilution Factor: 10		Analysis Time..: 10:11		
Total Alkalinity	256	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1100	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-010 Work Order #...: MLKKA1A1 Matrix.....: WATER
Date Sampled...: 08/10/11 10:15 Date Received..: 08/11/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 16:26
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.20 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**2.2**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**0.16 J**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**0.34 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**3.1**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**2.4**	**1.0**	**ug/L**
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-010 **Work Order #...:** MLKKA1A1 **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001

TOTAL Metals

Lot-Sample #...: F1H110460-010 **Matrix.....:** WATER
Date Sampled...: 08/10/11 10:15 **Date Received..:** 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**214**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKKA1AT**
		Dilution Factor: 1		Analysis Time..: 23:11		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1A4
		Dilution Factor: 1		Analysis Time..: 15:15		
Aluminum	**937**	**200**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1A5**
		Dilution Factor: 1		Analysis Time..: 15:15		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1A3
		Dilution Factor: 1		Analysis Time..: 15:15		
Barium	**53.0**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1A6**
		Dilution Factor: 1		Analysis Time..: 15:15		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1A7
		Dilution Factor: 1		Analysis Time..: 15:15		
Calcium	**85700**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1A8**
		Dilution Factor: 1		Analysis Time..: 15:15		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1A9
		Dilution Factor: 1		Analysis Time..: 15:15		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1AA
		Dilution Factor: 1		Analysis Time..: 15:15		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1AC
		Dilution Factor: 1		Analysis Time..: 15:15		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1AD
		Dilution Factor: 1		Analysis Time..: 15:15		
Iron	**957**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1AE**
		Dilution Factor: 1		Analysis Time..: 15:15		
Magnesium	**40800**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1AF**
		Dilution Factor: 1		Analysis Time..: 15:15		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001

TOTAL Metals

Lot-Sample #...: F1H110460-010 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**413**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1AG**
		Dilution Factor: 1		Analysis Time..: 15:15		
Sodium	**62200 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKKA1AH**
		Dilution Factor: 5		Analysis Time..: 18:02		
Nickel	**24.6 J**	**40.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1AJ**
		Dilution Factor: 1		Analysis Time..: 15:15		
Lead	**5.0 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1AK**
		Dilution Factor: 1		Analysis Time..: 15:15		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1AL
		Dilution Factor: 1		Analysis Time..: 15:15		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1AM
		Dilution Factor: 1		Analysis Time..: 15:15		
Strontium	**190**	**25.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1AN**
		Dilution Factor: 5		Analysis Time..: 08:50		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1AP
		Dilution Factor: 1		Analysis Time..: 15:15		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1AQ
		Dilution Factor: 1		Analysis Time..: 15:15		
Zinc	**73.1**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1AR**
		Dilution Factor: 1		Analysis Time..: 15:15		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001

General Chemistry

Lot-Sample #...: F1H110460-010 Work Order #...: MLKKA Matrix.....: WATER
Date Sampled...: 08/10/11 10:15 Date Received..: 08/11/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	38.8	2.0	mg/L	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 10		Analysis Time..: 12:30		
Fluoride	3.3	0.50	mg/L	MCAWW 300.0A	08/11/11	1224143
		Dilution Factor: 5		Analysis Time..: 10:54		
Nitrate	0.57	0.020	mg/L	MCAWW 300.0A	08/11/11	1224144
		Dilution Factor: 1		Analysis Time..: 10:40		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/11/11	1224145
		Dilution Factor: 5		Analysis Time..: 10:54		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/11/11	1224146
		Dilution Factor: 1		Analysis Time..: 10:40		
Sulfate	89.6	2.5	mg/L	MCAWW 300.0A	08/11/11	1224147
		Dilution Factor: 5		Analysis Time..: 10:54		
Total Alkalinity	354	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	502	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001

GC/MS Volatiles

Lot-Sample #...: F1H110460-011 Work Order #...: MLKKD1A1 Matrix.....: WATER
Date Sampled...: 08/10/11 13:20 Date Received..: 08/11/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 20:23
Dilution Factor: 5
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dichlorobenzene	ND	5.0	ug/L
1,4-Dichlorobenzene	ND	5.0	ug/L
Acetone	ND	10	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	10	ug/L
Carbon tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	10	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chloroethane	ND	10	ug/L
Chloroform	ND	5.0	ug/L
1,2-Dichlorobenzene	ND	5.0	ug/L
1,1-Dichloroethane	**56 D**	**5.0**	**ug/L**
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	**21 D**	**5.0**	**ug/L**
1,2-Dichloroethene (total)	**64 D**	**10**	**ug/L**
1,2-Dichloropropane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	5.0	ug/L
2-Hexanone	ND	25	ug/L
Methylene chloride	**1.8 J,D**	**5.0**	**ug/L**
4-Methyl-2-pentanone	ND	25	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
Trichloroethene	**44 D**	**5.0**	**ug/L**
Vinyl chloride	**6.0 J,D**	**10**	**ug/L**
Xylenes (total)	ND	25	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001

GC/MS Volatiles

Lot-Sample #...: F1H110460-011 **Work Order #...:** MLKKD1A1 **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	102	(70 - 120)
4-Bromofluorobenzene	106	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001

GC/MS Volatiles

Lot-Sample #...:	F1H110460-011	**Work Order #...:**	MLKKD2A1	**Matrix.....:**	WATER
Date Sampled...:	08/10/11 13:20	**Date Received..:**	08/11/11		
Prep Date.....:	08/18/11	**Analysis Date..:**	08/18/11		
Prep Batch #...:	1230199	**Analysis Time..:**	16:53		
Dilution Factor:	50				
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,1-Trichloroethane	**290 D**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
1,2-Dichloroethane-d4	105	(70 - 120)
4-Bromofluorobenzene	100	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001

TOTAL Metals

Lot-Sample #...: F1H110460-011 Matrix.....: WATER
Date Sampled...: 08/10/11 13:20 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**107**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKKD1AT**
		Dilution Factor: 1		Analysis Time..: 23:18		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1A4
		Dilution Factor: 1		Analysis Time..: 15:22		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1A5
		Dilution Factor: 1		Analysis Time..: 15:22		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1A3
		Dilution Factor: 1		Analysis Time..: 15:22		
Barium	**54.5**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKD1A6**
		Dilution Factor: 1		Analysis Time..: 15:22		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1A7
		Dilution Factor: 1		Analysis Time..: 15:22		
Calcium	**83000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKD1A8**
		Dilution Factor: 1		Analysis Time..: 15:22		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1A9
		Dilution Factor: 1		Analysis Time..: 15:22		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AA
		Dilution Factor: 1		Analysis Time..: 15:22		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AC
		Dilution Factor: 1		Analysis Time..: 15:22		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AD
		Dilution Factor: 1		Analysis Time..: 15:22		
Iron	**166**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKD1AE**
		Dilution Factor: 1		Analysis Time..: 15:22		
Magnesium	**22100**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKD1AF**
		Dilution Factor: 1		Analysis Time..: 15:22		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001

TOTAL Metals

Lot-Sample #...: F1H110460-011 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	145	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKD1AG**
		Dilution Factor: 1		Analysis Time..: 15:22		
Sodium	**325000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKKD1AH**
		Dilution Factor: 5		Analysis Time..: 18:08		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AJ
		Dilution Factor: 1		Analysis Time..: 15:22		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AK
		Dilution Factor: 1		Analysis Time..: 15:22		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AL
		Dilution Factor: 1		Analysis Time..: 15:22		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AM
		Dilution Factor: 1		Analysis Time..: 15:22		
Strontium	**373**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKD1AN**
		Dilution Factor: 1		Analysis Time..: 15:22		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AP
		Dilution Factor: 1		Analysis Time..: 15:22		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AQ
		Dilution Factor: 1		Analysis Time..: 15:22		
Zinc	**59.4**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKD1AR**
		Dilution Factor: 1		Analysis Time..: 15:22		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001

General Chemistry

Lot-Sample #...: F1H110460-011 Work Order #...: MLKKD Matrix.....: WATER
Date Sampled...: 08/10/11 13:20 Date Received..: 08/11/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	530	100	mg/L	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 500		Analysis Time..: 01:13		
Fluoride	1.7	0.10	mg/L	MCAWW 300.0A	08/11/11	1224143
		Dilution Factor: 1		Analysis Time..: 11:38		
Nitrate	0.061	0.020	mg/L	MCAWW 300.0A	08/11/11	1224144
		Dilution Factor: 1		Analysis Time..: 11:38		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/11/11	1224145
		Dilution Factor: 10		Analysis Time..: 11:52		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/11/11	1224146
		Dilution Factor: 1		Analysis Time..: 11:38		
Sulfate	63.2	5.0	mg/L	MCAWW 300.0A	08/11/11	1224147
		Dilution Factor: 10		Analysis Time..: 11:52		
Total Alkalinity	159	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1230	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000

GC/MS Volatiles

Lot-Sample #...:	F1H110460-012	**Work Order #...:**	MLKKH1A1	**Matrix.....:**	WATER
Date Sampled...:	08/10/11	**Date Received..:**	08/11/11		
Prep Date.....:	08/18/11	**Analysis Date..:**	08/18/11		
Prep Batch #...:	1230199	**Analysis Time..:**	17:19		
Dilution Factor:	1				
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.20 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**2.0**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**0.14 J**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**0.25 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.30 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**2.8**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**2.2**	**1.0**	**ug/L**
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000

GC/MS Volatiles

Lot-Sample #...: F1H110460-012 Work Order #...: MLKKH1A1 Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	105	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000

TOTAL Metals

Lot-Sample #...: F1H110460-012 Matrix.....: WATER
Date Sampled...: 08/10/11 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	210	1.0	ug/L	SW846 6020A	08/12-08/17/11	MLKKH1AT
		Dilution Factor: 1		Analysis Time..: 23:25		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1A4
		Dilution Factor: 1		Analysis Time..: 15:28		
Aluminum	1620	200	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1A5
		Dilution Factor: 1		Analysis Time..: 15:28		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1A3
		Dilution Factor: 1		Analysis Time..: 15:28		
Barium	57.7	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1A6
		Dilution Factor: 1		Analysis Time..: 15:28		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1A7
		Dilution Factor: 1		Analysis Time..: 15:28		
Calcium	94900	1000	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1A8
		Dilution Factor: 1		Analysis Time..: 15:28		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1A9
		Dilution Factor: 1		Analysis Time..: 15:28		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AA
		Dilution Factor: 1		Analysis Time..: 15:28		
Chromium	3.2 J	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AC
		Dilution Factor: 1		Analysis Time..: 15:28		
Copper	6.4 J	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AD
		Dilution Factor: 1		Analysis Time..: 15:28		
Iron	1570	100	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AE
		Dilution Factor: 1		Analysis Time..: 15:28		
Magnesium	44700	1000	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AF
		Dilution Factor: 1		Analysis Time..: 15:28		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000

TOTAL Metals

Lot-Sample #...: F1H110460-012 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**489**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKH1AG**
		Dilution Factor: 1		Analysis Time..: 15:28		
Sodium	**60100 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKKH1AH**
		Dilution Factor: 5		Analysis Time..: 18:14		
Nickel	**28.6 J**	**40.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKH1AJ**
		Dilution Factor: 1		Analysis Time..: 15:28		
Lead	**8.6 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKH1AK**
		Dilution Factor: 1		Analysis Time..: 15:28		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AL
		Dilution Factor: 1		Analysis Time..: 15:28		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AM
		Dilution Factor: 1		Analysis Time..: 15:28		
Strontium	**188**	**25.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKH1AN**
		Dilution Factor: 5		Analysis Time..: 08:56		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AP
		Dilution Factor: 1		Analysis Time..: 15:28		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AQ
		Dilution Factor: 1		Analysis Time..: 15:28		
Zinc	**109**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKH1AR**
		Dilution Factor: 1		Analysis Time..: 15:28		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000

General Chemistry

Lot-Sample #...: F1H110460-012 Work Order #...: MLKKH Matrix.....: WATER
Date Sampled...: 08/10/11 Date Received..: 08/11/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	38.4	2.0	mg/L	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 10		Analysis Time..: 01:28		
Fluoride	3.4	0.50	mg/L	MCAWW 300.0A	08/12/11	1224143
		Dilution Factor: 5		Analysis Time..: 01:04		
Nitrate	0.30	0.020	mg/L	MCAWW 300.0A	08/12/11	1224144
		Dilution Factor: 1		Analysis Time..: 12:21		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/12/11	1224145
		Dilution Factor: 5		Analysis Time..: 01:04		
Phosphate as P, Ortho	0.12 B,J	0.50	mg/L	MCAWW 300.0A	08/12/11	1224146
		Dilution Factor: 1		Analysis Time..: 12:21		
Sulfate	87.2	2.5	mg/L	MCAWW 300.0A	08/12/11	1224147
		Dilution Factor: 5		Analysis Time..: 01:04		
Total Alkalinity	354	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	496	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001

GC/MS Volatiles

Lot-Sample #...: F1H110460-013 Work Order #...: MLKKK1A1 Matrix.....: WATER
Date Sampled...: 08/10/11 Date Received..: 08/11/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 17:45
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	**0.18 J**	**1.0**	**ug/L**
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**2.7**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**2.8**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.67 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.41 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	**2.3**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	**0.49 J**	**5.0**	**ug/L**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001

GC/MS Volatiles

Lot-Sample #...: F1H110460-013 **Work Order #...:** MLKKK1A1 **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
1,2-Dichloroethane-d4	105	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001

TOTAL Metals

Lot-Sample #...: F1H110460-013 **Matrix.....:** WATER
Date Sampled...: 08/10/11 **Date Received..:** 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**24.7**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKKK1AT**
		Dilution Factor: 1		Analysis Time..: 23:31		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1A4
		Dilution Factor: 1		Analysis Time..: 15:35		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1A5
		Dilution Factor: 1		Analysis Time..: 15:35		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1A3
		Dilution Factor: 1		Analysis Time..: 15:35		
Barium	**55.7**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKK1A6**
		Dilution Factor: 1		Analysis Time..: 15:35		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1A7
		Dilution Factor: 1		Analysis Time..: 15:35		
Calcium	**271000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKK1A8**
		Dilution Factor: 1		Analysis Time..: 15:35		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1A9
		Dilution Factor: 1		Analysis Time..: 15:35		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AA
		Dilution Factor: 1		Analysis Time..: 15:35		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AC
		Dilution Factor: 1		Analysis Time..: 15:35		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AD
		Dilution Factor: 1		Analysis Time..: 15:35		
Iron	ND	100	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AE
		Dilution Factor: 1		Analysis Time..: 15:35		
Magnesium	**106000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKK1AF**
		Dilution Factor: 1		Analysis Time..: 15:35		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001

TOTAL Metals

Lot-Sample #...: F1H110460-013 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**65.5**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKK1AG**
		Dilution Factor: 1		Analysis Time..: 15:35		
Sodium	**107000 B**	**10000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKKK1AH**
		Dilution Factor: 10		Analysis Time..: 18:21		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AJ
		Dilution Factor: 1		Analysis Time..: 15:35		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AK
		Dilution Factor: 1		Analysis Time..: 15:35		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AL
		Dilution Factor: 1		Analysis Time..: 15:35		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AM
		Dilution Factor: 1		Analysis Time..: 15:35		
Strontium	**4840**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKK1AN**
		Dilution Factor: 1		Analysis Time..: 15:35		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AP
		Dilution Factor: 1		Analysis Time..: 15:35		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AQ
		Dilution Factor: 1		Analysis Time..: 15:35		
Zinc	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AR
		Dilution Factor: 1		Analysis Time..: 15:35		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001

General Chemistry

Lot-Sample #...: F1H110460-013 Work Order #...: MLKKK Matrix.....: WATER
Date Sampled...: 08/10/11 Date Received..: 08/11/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	206	20.0	mg/L	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 100		Analysis Time..: 01:42		
Fluoride	0.34	0.10	mg/L	MCAWW 300.0A	08/12/11	1224143
		Dilution Factor: 1		Analysis Time..: 01:48		
Nitrate	43.8	2.0	mg/L	MCAWW 300.0A	08/12/11	1224144
		Dilution Factor: 100		Analysis Time..: 02:16		
Nitrite	0.15 B	0.20	mg/L	MCAWW 300.0A	08/12/11	1224145
		Dilution Factor: 10		Analysis Time..: 02:02		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224146
		Dilution Factor: 1		Analysis Time..: 01:48		
Sulfate	787	50.0	mg/L	MCAWW 300.0A	08/12/11	1224147
		Dilution Factor: 100		Analysis Time..: 02:16		
Total Alkalinity	85.6	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	2170	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-014 Work Order #...: MLKKN1A1 Matrix.....: WATER
Date Sampled...: 08/10/11 11:15 Date Received..: 08/11/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 18:12
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	**0.19 J**	**1.0**	**ug/L**
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**2.9**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**2.9**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.75 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.43 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	**2.4**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	**0.28 J**	**5.0**	**ug/L**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-014 **Work Order #...:** MLKKN1A1 **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	111	(85 - 115)
1,2-Dichloroethane-d4	108	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001

TOTAL Metals

Lot-Sample #...: F1H110460-014 Matrix.....: WATER
Date Sampled...: 08/10/11 11:15 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**23.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKKN1AT**
		Dilution Factor: 1		Analysis Time..: 23:38		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1A4
		Dilution Factor: 1		Analysis Time..: 15:41		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1A5
		Dilution Factor: 1		Analysis Time..: 15:41		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1A3
		Dilution Factor: 1		Analysis Time..: 15:41		
Barium	**56.9**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKN1A6**
		Dilution Factor: 1		Analysis Time..: 15:41		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1A7
		Dilution Factor: 1		Analysis Time..: 15:41		
Calcium	**274000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKN1A8**
		Dilution Factor: 1		Analysis Time..: 15:41		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1A9
		Dilution Factor: 1		Analysis Time..: 15:41		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AA
		Dilution Factor: 1		Analysis Time..: 15:41		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AC
		Dilution Factor: 1		Analysis Time..: 15:41		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AD
		Dilution Factor: 1		Analysis Time..: 15:41		
Iron	**30.2 J**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKN1AE**
		Dilution Factor: 1		Analysis Time..: 15:41		
Magnesium	**106000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKN1AF**
		Dilution Factor: 1		Analysis Time..: 15:41		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001

TOTAL Metals

Lot-Sample #...: F1H110460-014 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**69.4**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKN1AG**
		Dilution Factor: 1		Analysis Time..: 15:41		
Sodium	**105000 B**	**10000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKKN1AH**
		Dilution Factor: 10		Analysis Time..: 18:27		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AJ
		Dilution Factor: 1		Analysis Time..: 15:41		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AK
		Dilution Factor: 1		Analysis Time..: 15:41		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AL
		Dilution Factor: 1		Analysis Time..: 15:41		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AM
		Dilution Factor: 1		Analysis Time..: 15:41		
Strontium	**4990**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKN1AN**
		Dilution Factor: 1		Analysis Time..: 15:41		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AP
		Dilution Factor: 1		Analysis Time..: 15:41		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AQ
		Dilution Factor: 1		Analysis Time..: 15:41		
Zinc	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AR
		Dilution Factor: 1		Analysis Time..: 15:41		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001

General Chemistry

Lot-Sample #...: F1H110460-014 Work Order #...: MLKKN Matrix.....: WATER
Date Sampled...: 08/10/11 11:15 Date Received..: 08/11/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	206	20.0	mg/L	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 100		Analysis Time..: 01:57		
Fluoride	0.34	0.10	mg/L	MCAWW 300.0A	08/12/11	1224143
		Dilution Factor: 1		Analysis Time..: 02:31		
Nitrate	44.8	2.0	mg/L	MCAWW 300.0A	08/12/11	1224144
		Dilution Factor: 100		Analysis Time..: 03:00		
Nitrite	0.10 B	0.20	mg/L	MCAWW 300.0A	08/12/11	1224145
		Dilution Factor: 10		Analysis Time..: 02:45		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224146
		Dilution Factor: 1		Analysis Time..: 02:31		
Sulfate	782	50.0	mg/L	MCAWW 300.0A	08/12/11	1224147
		Dilution Factor: 100		Analysis Time..: 03:00		
Total Alkalinity	88.4	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	2130	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H110460 **Work Order #...:** MLTVV1AA **Matrix.....:** WATER
MB Lot-Sample #: F1H180000-199

Prep Date.....: 08/18/11 **Analysis Time..:** 11:50
Analysis Date..: 08/18/11 **Prep Batch #...:** 1230199
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	107	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H110460 Work Order #...: MLTVV1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	106	(70 - 120)		
4-Bromofluorobenzene	100	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H120000-017 **Prep Batch #...:** 1224017						
Uranium	ND	1.0	ug/L	SW846 6020A	08/12-08/17/11	MLK321AA
		Dilution Factor: 1				
		Analysis Time..: 21:19				
MB Lot-Sample #: F1H120000-018 **Prep Batch #...:** 1224018						
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLK351AD
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AU
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AA
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Barium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AE
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AF
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AH
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Calcium	ND	1000	ug/L	SW846 6010C	08/12-08/20/11	MLK351AG
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AK
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AJ
		Dilution Factor: 1				
		Analysis Time..: 13:13				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AL
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Iron	ND	100	ug/L	SW846 6010C	08/12-08/20/11	MLK351AM
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AT
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Magnesium	ND	1000	ug/L	SW846 6010C	08/12-08/20/11	MLK351AN
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Manganese	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AP
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AR
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AV
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AC
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Sodium	**498 J**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLK351AQ**
		Dilution Factor: 1				
		Analysis Time..: 16:13				
Strontium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AW
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AX
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351A0
		Dilution Factor: 1				
		Analysis Time..: 13:13				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351A1
		Dilution Factor: 1				
		Analysis Time..: 13:13				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H110460 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLTCF1AA		MB Lot-Sample #:	F1H120000-148	
	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Fluoride		Work Order #: MLPTC1AA		MB Lot-Sample #:	F1H120000-143	
	ND	0.10	mg/L	MCAWW 300.0A	08/11/11	1224143
		Dilution Factor: 1				
		Analysis Time..: 07:04				
Nitrate		Work Order #: MLPTD1AA		MB Lot-Sample #:	F1H120000-144	
	ND	0.020	mg/L	MCAWW 300.0A	08/11/11	1224144
		Dilution Factor: 1				
		Analysis Time..: 07:04				
Nitrite		Work Order #: MLPTF1AA		MB Lot-Sample #:	F1H120000-145	
	ND	0.020	mg/L	MCAWW 300.0A	08/11/11	1224145
		Dilution Factor: 1				
		Analysis Time..: 07:04				
Phosphate as P, Ortho		Work Order #: MLPTG1AA		MB Lot-Sample #:	F1H120000-146	
	0.084 B	**0.50**	**mg/L**	**MCAWW 300.0A**	**08/11/11**	**1224146**
		Dilution Factor: 1				
		Analysis Time..: 07:04				
Sulfate		Work Order #: MLPTJ1AA		MB Lot-Sample #:	F1H120000-147	
	ND	0.50	mg/L	MCAWW 300.0A	08/11/11	1224147
		Dilution Factor: 1				
		Analysis Time..: 07:04				
Total Alkalinity		Work Order #: MLWW41AC		MB Lot-Sample #:	F1H220000-085	
	ND	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLQ6G1AA		MB Lot-Sample #:	F1H170000-108	
	ND	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H110460 Work Order #...: MLTVV1AC Matrix.....: WATER
LCS Lot-Sample#: F1H180000-199
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 10:30
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichloroethane	97	(70 - 130)	SW846 8260B
Benzene	95	(80 - 120)	SW846 8260B
Trichloroethene	90	(70 - 125)	SW846 8260B
1,2-Dichloropropane	91	(75 - 125)	SW846 8260B
Bromodichloromethane	98	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	98	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	107	(55 - 140)	SW846 8260B
Toluene	103	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	102	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	96	(75 - 125)	SW846 8260B
2-Hexanone	95	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	103	(60 - 135)	SW846 8260B
Chlorobenzene	96	(80 - 120)	SW846 8260B
Bromoform	108	(70 - 130)	SW846 8260B
Ethylbenzene	101	(75 - 125)	SW846 8260B
Styrene	109	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	93	(65 - 130)	SW846 8260B
Tetrachloroethene	101	(45 - 150)	SW846 8260B
1,2-Dichlorobenzene	100	(70 - 120)	SW846 8260B
cis-1,3-Dichloropropene	104	(70 - 130)	SW846 8260B
Dibromochloromethane	104	(60 - 135)	SW846 8260B
Vinyl chloride	87	(50 - 145)	SW846 8260B
Bromomethane	99	(30 - 145)	SW846 8260B
Chloroethane	90	(60 - 135)	SW846 8260B
Acetone	93	(40 - 140)	SW846 8260B
1,1-Dichloroethene	95	(70 - 130)	SW846 8260B
Methylene chloride	88	(55 - 140)	SW846 8260B
Carbon disulfide	84	(35 - 160)	SW846 8260B
1,1-Dichloroethane	93	(70 - 135)	SW846 8260B
2-Butanone	88	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	96	(85 - 115)	SW846 8260B
Chloroform	93	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	99	(65 - 130)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H110460 **Work Order #...:** MLTVV1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H180000-199

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Carbon tetrachloride	**99**	**(65 - 140)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	101	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H120000-017 **Prep Batch #...:** 1224017					
Uranium	103	(80 - 120)	SW846 6020A	08/12-08/17/11	MLK321AC
		Dilution Factor: 1		Analysis Time..: 21:25	
LCS Lot-Sample#: F1H120000-018 **Prep Batch #...:** 1224018					
Arsenic	101	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A2
		Dilution Factor: 1		Analysis Time..: 13:20	
Silver	92	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A3
		Dilution Factor: 1		Analysis Time..: 13:20	
Aluminum	100	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A4
		Dilution Factor: 1		Analysis Time..: 13:20	
Barium	103	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A5
		Dilution Factor: 1		Analysis Time..: 13:20	
Beryllium	108	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A6
		Dilution Factor: 1		Analysis Time..: 13:20	
Calcium	104	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A7
		Dilution Factor: 1		Analysis Time..: 13:20	
Cadmium	102	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A8
		Dilution Factor: 1		Analysis Time..: 13:20	
Cobalt	98	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A9
		Dilution Factor: 1		Analysis Time..: 13:20	
Chromium	98	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CA
		Dilution Factor: 1		Analysis Time..: 13:20	
Copper	97	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CC
		Dilution Factor: 1		Analysis Time..: 13:20	
Iron	102	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CD
		Dilution Factor: 1		Analysis Time..: 13:20	
Magnesium	100	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CE
		Dilution Factor: 1		Analysis Time..: 13:20	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	101	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CF
		Dilution Factor: 1	Analysis Time..: 13:20		
Sodium	111	(80 - 120)	SW846 6010C	08/12-08/19/11	MLK351CG
		Dilution Factor: 1	Analysis Time..: 16:20		
Nickel	99	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CH
		Dilution Factor: 1	Analysis Time..: 13:20		
Lead	99	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CJ
		Dilution Factor: 1	Analysis Time..: 13:20		
Antimony	103	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CK
		Dilution Factor: 1	Analysis Time..: 13:20		
Selenium	102	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CL
		Dilution Factor: 1	Analysis Time..: 13:20		
Strontium	109	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CM
		Dilution Factor: 1	Analysis Time..: 13:20		
Thallium	98	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CN
		Dilution Factor: 1	Analysis Time..: 13:20		
Vanadium	99	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CP
		Dilution Factor: 1	Analysis Time..: 13:20		
Zinc	108	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CQ
		Dilution Factor: 1	Analysis Time..: 13:20		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H110460 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLTCF1AC	LCS Lot-Sample#: F1H120000-148		
	91	(90 - 110)	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 1	Analysis Time..: 04:05		
Fluoride		Work Order #: MLPTC1AC	LCS Lot-Sample#: F1H120000-143		
	93	(90 - 110)	MCAWW 300.0A	08/11/11	1224143
		Dilution Factor: 1	Analysis Time..: 06:49		
Nitrate		Work Order #: MLPTD1AC	LCS Lot-Sample#: F1H120000-144		
	97	(90 - 110)	MCAWW 300.0A	08/11/11	1224144
		Dilution Factor: 1	Analysis Time..: 06:49		
Nitrite		Work Order #: MLPTF1AC	LCS Lot-Sample#: F1H120000-145		
	96	(90 - 110)	MCAWW 300.0A	08/11/11	1224145
		Dilution Factor: 1	Analysis Time..: 06:49		
Phosphate as P, Ortho		Work Order #: MLPTG1AC	LCS Lot-Sample#: F1H120000-146		
	97	(90 - 110)	MCAWW 300.0A	08/11/11	1224146
		Dilution Factor: 1	Analysis Time..: 06:49		
Sulfate		Work Order #: MLPTJ1AC	LCS Lot-Sample#: F1H120000-147		
	93	(90 - 110)	MCAWW 300.0A	08/11/11	1224147
		Dilution Factor: 1	Analysis Time..: 06:49		
Total Alkalinity		Work Order #: MLWW41AA	LCS Lot-Sample#: F1H220000-085		
	93	(90 - 110)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLWW41AD	LCS Lot-Sample#: F1H220000-085		
	94	(90 - 110)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLQ6G1AC	LCS Lot-Sample#: F1H170000-108		
	97	(90 - 113)	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H110460 Work Order #...: MLLN11CV-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-006 MLLN11CW-MSD
Date Sampled...: 08/11/11 09:15 Date Received..: 08/12/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 19:05
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	86	(70 - 130)			SW846 8260B
	98	(70 - 130)	13	(0-20)	SW846 8260B
Dibromochloromethane	94	(60 - 135)			SW846 8260B
	103	(60 - 135)	8.5	(0-20)	SW846 8260B
Vinyl chloride	78	(50 - 145)			SW846 8260B
	91	(50 - 145)	15	(0-20)	SW846 8260B
Bromomethane	87	(30 - 145)			SW846 8260B
	95	(30 - 145)	9.2	(0-20)	SW846 8260B
Chloroethane	87	(60 - 135)			SW846 8260B
	97	(60 - 135)	11	(0-20)	SW846 8260B
Acetone	94	(40 - 140)			SW846 8260B
	96	(40 - 140)	2.0	(0-20)	SW846 8260B
1,1-Dichloroethene	97	(70 - 130)			SW846 8260B
	105	(70 - 130)	7.2	(0-20)	SW846 8260B
Methylene chloride	88	(55 - 140)			SW846 8260B
	95	(55 - 140)	7.3	(0-20)	SW846 8260B
Carbon disulfide	91	(35 - 160)			SW846 8260B
	96	(35 - 160)	5.6	(0-20)	SW846 8260B
1,1-Dichloroethane	92	(70 - 135)			SW846 8260B
	100	(70 - 135)	8.3	(0-20)	SW846 8260B
2-Butanone	88	(30 - 150)			SW846 8260B
	94	(30 - 150)	7.1	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	91	(85 - 115)			SW846 8260B
	100	(85 - 115)	9.8	(0-20)	SW846 8260B
Chloroform	89	(65 - 135)			SW846 8260B
	97	(65 - 135)	8.4	(0-20)	SW846 8260B
1,1,1-Trichloroethane	95	(65 - 130)			SW846 8260B
	103	(65 - 130)	8.8'	(0-20)	SW846 8260B
Carbon tetrachloride	95	(65 - 140)			SW846 8260B
	103	(65 - 140)	8.2	(0-20)	SW846 8260B
1,2-Dichloroethane	89	(70 - 130)			SW846 8260B
	100	(70 - 130)	12	(0-20)	SW846 8260B
Benzene	92	(80 - 120)			SW846 8260B
	100	(80 - 120)	8.3	(0-20)	SW846 8260B
Trichloroethene	89	(70 - 125)			SW846 8260B
	93	(70 - 125)	4.5	(0-20)	SW846 8260B
1,2-Dichloropropane	89	(75 - 125)			SW846 8260B
	96	(75 - 125)	8.4	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H110460 Work Order #...: MLLN11CV-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-006 MLLN11CW-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	94	(75 - 120)			SW846 8260B
	102	(75 - 120)	8.1	(0-20)	SW846 8260B
1,1,2-Trichloroethane	92	(75 - 125)			SW846 8260B
	102	(75 - 125)	11	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	96	(55 - 140)			SW846 8260B
	106	(55 - 140)	9.7	(0-20)	SW846 8260B
Toluene	100	(75 - 120)			SW846 8260B
	103	(75 - 120)	3.2	(0-20)	SW846 8260B
1,3-Dichlorobenzene	98	(75 - 125)			SW846 8260B
	102	(75 - 125)	3.4	(0-20)	SW846 8260B
1,4-Dichlorobenzene	94	(75 - 125)			SW846 8260B
	99	(75 - 125)	4.5	(0-20)	SW846 8260B
2-Hexanone	82	(55 - 130)			SW846 8260B
	98	(55 - 130)	17	(0-20)	SW846 8260B
4-Methyl-2-pentanone	88	(60 - 135)			SW846 8260B
	102	(60 - 135)	15	(0-20)	SW846 8260B
Chlorobenzene	93	(80 - 120)			SW846 8260B
	98	(80 - 120)	5.5	(0-20)	SW846 8260B
Bromoform	100	(70 - 130)			SW846 8260B
	108	(70 - 130)	7.6	(0-20)	SW846 8260B
Ethylbenzene	98	(75 - 125)			SW846 8260B
	104	(75 - 125)	5.7	(0-20)	SW846 8260B
Styrene	106	(65 - 135)			SW846 8260B
	112	(65 - 135)	6.0	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	90	(65 - 130)			SW846 8260B
	99	(65 - 130)	9.1	(0-20)	SW846 8260B
Tetrachloroethene	96	(45 - 150)			SW846 8260B
	101	(45 - 150)	5.7	(0-20)	SW846 8260B
1,2-Dichlorobenzene	95	(70 - 120)			SW846 8260B
	100	(70 - 120)	5.3	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
	105	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
	108	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
	105	(70 - 120)
4-Bromofluorobenzene	97	(75 - 120)
	98	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER
Date Sampled...: 08/10/11 08:30 **Date Received..:** 08/11/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H110460-001 **Prep Batch #...:** 1224017							
Uranium	102	(80 - 120)			SW846 6020A	08/12-08/17/11	MLKHP1A5
	102	(80 - 120)	0.17	(0-20)	SW846 6020A	08/12-08/17/11	MLKHP1A6
		Dilution Factor: 1					
		Analysis Time..: 21:45					
MS Lot-Sample #: F1H110460-001 **Prep Batch #...:** 1224018							
Aluminum	99	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CC
	99	(80 - 120)	0.34	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CD
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Antimony	100	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1C9
	99	(80 - 120)	1.1	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1DA
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Arsenic	100	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1A7
	99	(80 - 120)	1.2	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1A8
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Barium	97	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CE
	98	(80 - 120)	1.0	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CF
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Beryllium	104	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CG
	105	(80 - 120)	1.1	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CH
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Cadmium	97	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CL
	95	(80 - 120)	1.7	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CM
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Calcium	85	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CJ
	90	(80 - 120)	0.43	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CK
		Dilution Factor: 1					
		Analysis Time..: 13:32					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER
Date Sampled...: 08/10/11 08:30 **Date Received..:** 08/11/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	93	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CQ
	93	(80 - 120)	0.12	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CR
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Cobalt	92	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CN
	92	(80 - 120)	0.53	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CP
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Copper	95	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CT
	95	(80 - 120)	0.19	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CU
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Iron	96	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CV
	95	(80 - 120)	0.44	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CW
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Lead	92	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1C7
	91	(80 - 120)	1.4	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1C8
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Magnesium	90	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CX
	93	(80 - 120)	0.86	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1C0
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Manganese	95	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1C1
	95	(80 - 120)	0.34	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1C2
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Nickel	93	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1C5
	92	(80 - 120)	1.8	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1C6
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Selenium	100	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1DC
	98	(80 - 120)	2.3	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1DD
		Dilution Factor: 1					
		Analysis Time..: 13:32					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER
Date Sampled...: 08/10/11 08:30 **Date Received..:** 08/11/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	90	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1A9
	90	(80 - 120)	0.34	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CA
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Sodium	80	(80 - 120)			SW846 6010C	08/12-08/19/11	MLKHP1C3
	85	(80 - 120)	0.17	(0-20)	SW846 6010C	08/12-08/19/11	MLKHP1C4
		Dilution Factor: 5					
		Analysis Time..: 16:32					
Strontium	103	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1DE
	103	(80 - 120)	0.09	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1DF
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Thallium	91	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1DG
	90	(80 - 120)	1.2	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1DH
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Vanadium	95	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1DJ
	95	(80 - 120)	0.32	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1DK
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Zinc	106	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1DL
	104	(80 - 120)	2.2	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1DM
		Dilution Factor: 1					
		Analysis Time..: 13:32					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H110460 **Matrix.....:** WATER
Date Sampled...: 08/10/11 08:30 **Date Received..:** 08/11/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLKJL1CV		MS Lot-Sample #: F1H110460-008	
	103	(90 - 110)	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 500	Analysis Time..: 11:47		
Chloride		Work Order #...: MLLN11CG		MS Lot-Sample #: F1H120447-006	
	95	(90 - 110)	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100	Analysis Time..: 05:18		
Fluoride		Work Order #...: MLKJL1CH		MS Lot-Sample #: F1H110460-008	
	102	(90 - 110)	MCAWW 300.0A	08/11/11	1224143
		Dilution Factor: 1	Analysis Time..: 07:18		
Nitrate		Work Order #...: MLKJL1CK		MS Lot-Sample #: F1H110460-008	
	98	(90 - 110)	MCAWW 300.0A	08/11/11	1224144
		Dilution Factor: 1	Analysis Time..: 07:18		
Nitrite		Work Order #...: MLKJL1CM		MS Lot-Sample #: F1H110460-008	
	58 N	(90 - 110)	MCAWW 300.0A	08/11/11	1224145
		Dilution Factor: 10	Analysis Time..: 07:33		
Phosphate as P, Ortho		Work Order #...: MLKJL1CP		MS Lot-Sample #: F1H110460-008	
	77 N	(90 - 110)	MCAWW 300.0A	08/11/11	1224146
		Dilution Factor: 1	Analysis Time..: 07:18		
Sulfate		Work Order #...: MLKJL1CR		MS Lot-Sample #: F1H110460-008	
	97	(90 - 110)	MCAWW 300.0A	08/11/11	1224147
		Dilution Factor: 10	Analysis Time..: 07:33		
Total Alkalinity		Work Order #...: MLKJ51CF		MS Lot-Sample #: F1H110460-009	
	96	(80 - 120)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H110460 **Work Order #...:** MLLN1-SMP MLLN1-DUP **Matrix.....:** WATER

Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #:	F1H120447-006	
	87.7	86.1	mg/L	1.9	(0-20)	MCAWW 300.0A	08/12/11	1224148

Dilution Factor: 100 Analysis Time..: 05:18

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H110460 **Work Order #...:** MLKJL-SMP MLKJL-DUP **Matrix.....:** WATER

Date Sampled...: 08/10/11 08:30 **Date Received..:** 08/11/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H110460-008		
	1240	1240	mg/L	0.81	(0-0.0)	MCAWW 160.1	08/17-08/22/11	1229108
			Dilution Factor: 1			Analysis Time..: 00:00		
Fluoride						SD Lot-Sample #: F1H110460-008		
	1.2	1.2	mg/L	1.0	(0-20)	MCAWW 300.0A	08/11/11	1224143
			Dilution Factor: 1			Analysis Time..: 07:18		
Nitrate						SD Lot-Sample #: F1H110460-008		
	0.044	0.043	mg/L	0.76	(0-20)	MCAWW 300.0A	08/11/11	1224144
			Dilution Factor: 1			Analysis Time..: 07:18		
Nitrite						SD Lot-Sample #: F1H110460-008		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/11/11	1224145
			Dilution Factor: 10			Analysis Time..: 07:33		
Phosphate as P, Ortho						SD Lot-Sample #: F1H110460-008		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/11/11	1224146
			Dilution Factor: 1			Analysis Time..: 07:18		
Sulfate						SD Lot-Sample #: F1H110460-008		
	50.2	49.7	mg/L	1.1	(0-20)	MCAWW 300.0A	08/11/11	1224147
			Dilution Factor: 10			Analysis Time..: 07:33		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H110460 **Work Order #...:** MLKJ5-SMP MLKJ5-DUP **Matrix.....:** WATER

Date Sampled...: 08/10/11 09:30 **Date Received..:** 08/11/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #:	F1H110460-009	
	256	257	mg/L	0.31	(0-20)	MCAWW 310.1	08/22/11	1234085
			Dilution Factor: 1			Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H110460-001
Work Order: MLKHP
Matrix: WATER

Date Collected: 08/10/11 0830
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 57
Uranium 234	31.4		2.9	0.1	0.06	08/19/11	08/21/11
Uranium 235/236	1.52		0.33	0.10	0.04	08/19/11	08/21/11
Uranium 238	30.4		2.8	0.1	0.03	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H110460-002
Work Order: MLKHV
Matrix: WATER

Date Collected: 08/10/11 0930
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 67
Uranium 234	18.5		1.8	0.1	0.06	08/19/11	08/21/11
Uranium 235/236	0.70		0.20	0.10	0.07	08/19/11	08/21/11
Uranium 238	17.4		1.7	0.1	0.06	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H110460-003
Work Order: MLKH4
Matrix: WATER

Date Collected: 08/10/11 1015
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 37
Uranium 234	68.6		6.2	0.1	0.09	08/19/11	08/21/11
Uranium 235/236	3.38		0.64	0.10	0.06	08/19/11	08/21/11
Uranium 238	67.1		6.1	0.1	0.2	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H110460-004
Work Order: MLKH8
Matrix: WATER

Date Collected: 08/10/11 1320
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 53
Uranium 234	32.1		3.0	0.1	0.09	08/19/11	08/21/11
Uranium 235/236	1.62		0.35	0.10	0.1	08/19/11	08/21/11
Uranium 238	32.7		3.0	0.1	0.08	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000 DISSOLVED

Radiochemistry

Lab Sample ID: F1H110460-005
Work Order: MLKJD
Matrix: WATER

Date Collected: 08/10/11 0000
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1231145		Yld % 35
Uranium 234	70.0		6.3	0.1	0.1	08/19/11	08/21/11
Uranium 235/236	3.67		0.66	0.10	0.06	08/19/11	08/21/11
Uranium 238	67.5		6.1	0.1	0.1	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H110460-006
Work Order: MLKJE
Matrix: WATER

Date Collected: 08/10/11 0000
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 74
Uranium 234	10.8		1.1	0.1	0.04	08/19/11	08/21/11
Uranium 235/236	0.41		0.14	0.10	0.07	08/19/11	08/21/11
Uranium 238	8.77		0.93	0.10	0.06	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H110460-007
Work Order: MLKJJ
Matrix: WATER

Date Collected: 08/10/11 1115
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1231145		Yld % 74
Uranium 234	10.8		1.1	0.1	0.06	08/19/11	08/21/11
Uranium 235/236	0.46		0.15	0.10	0.06	08/19/11	08/21/11
Uranium 238	8.36		0.89	0.10	0.06	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001

Radiochemistry

Lab Sample ID: F1H110460-008
Work Order: MLKJL
Matrix: WATER

Date Collected: 08/10/11 0830
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1231145		Yld % 45
Uranium 234	37.1		3.5	0.1	0.1	08/19/11	08/21/11
Uranium 235/236	1.79		0.40	0.10	0.05	08/19/11	08/21/11
Uranium 238	37.0		3.5	0.1	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709D0001

Radiochemistry

Lab Sample ID: F1H110460-009
Work Order: MLKJ5
Matrix: WATER

Date Collected: 08/10/11 0930
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 65
Uranium 234	16.8		1.6	0.1	0.06	08/19/11	08/21/11
Uranium 235/236	0.71		0.20	0.10	0.06	08/19/11	08/21/11
Uranium 238	16.0		1.6	0.1	0.07	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001

Radiochemistry

Lab Sample ID: F1H110460-010
Work Order: MLKKA
Matrix: WATER

Date Collected: 08/10/11 1015
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 40
Uranium 234	67.5		6.1	0.1	0.1	08/19/11	08/21/11
Uranium 235/236	3.43		0.61	0.10	0.1	08/19/11	08/21/11
Uranium 238	65.8		5.9	0.1	0.1	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001

Radiochemistry

Lab Sample ID: F1H110460-011
Work Order: MLKKD
Matrix: WATER

Date Collected: 08/10/11 1320
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 52
Uranium 234	34.7		3.2	0.1	0.09	08/19/11	08/21/11
Uranium 235/236	1.97		0.39	0.10	0.07	08/19/11	08/21/11
Uranium 238	35.0		3.2	0.1	0.03	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000

Radiochemistry

Lab Sample ID: F1H110460-012
Work Order: MLKKH
Matrix: WATER

Date Collected: 08/10/11 0000
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 38
Uranium 234	69.2		6.2	0.1	0.1	08/19/11	08/21/11
Uranium 235/236	3.13		0.60	0.10	0.10	08/19/11	08/21/11
Uranium 238	68.1		6.1	0.1	0.08	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001

Radiochemistry

Lab Sample ID: F1H110460-013
Work Order: MLKKK
Matrix: WATER

Date Collected: 08/10/11 0000
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 80
Uranium 234	9.54		0.99	0.10	0.05	08/19/11	08/21/11
Uranium 235/236	0.30		0.12	0.10	0.05	08/19/11	08/21/11
Uranium 238	7.26		0.79	0.10	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001

Radiochemistry

Lab Sample ID: F1H110460-014
Work Order: MLKKN
Matrix: WATER

Date Collected: 08/10/11 1115
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 79
Uranium 234	9.35		0.98	0.10	0.05	08/19/11	08/21/11
Uranium 235/236	0.38		0.13	0.10	0.03	08/19/11	08/21/11
Uranium 238	7.31		0.80	0.10	0.05	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H110460
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1231145		Yld % 98		F1H190000-145B
Uranium 234	0.005	U	0.015	0.100	0.033		08/19/11	08/21/11
Uranium 235/236	0.0	U	0.0089	0.100	0.024		08/19/11	08/21/11
Uranium 238	0.005	U	0.015	0.100	0.032		08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F1H110460
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ+/-)	% Yld	% Rec	QC Control Limits	Precision	
							Lab Sample ID		
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**A-01-R MOD**			**F1H190000-145C**		
Uranium 234		3.26	3.55	0.47	79	109	(76 - 136)		
	Spk 2	3.26	3.11	0.40	88	95	(76 - 136)	13	%RPD
Uranium 238		3.39	3.48	0.46	79	103	(76 - 134)		
	Spk 2	3.39	3.41	0.43	88	101	(76 - 134)	2	%RPD
		Batch #:	1231145		Analysis Date:		08/21/11		

NOTE(S):

Calculations are performed before rounding to avoid round-off error in calculated results

F1H110460

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R256

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-11

Project: 140415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 0
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A04MW604D0001 DISSOLVED			2011-08-10 / 830	MLKHP	WATER

SAMPLE COMMENTS:

SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Ise U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A04DMW709DD0001 DISSOLVED			2011-08-10 / 930	MLKHV	WATER

SAMPLE COMMENTS:

MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R256

Project Manager: LMF
Quote #: 89251
SDG:

Project: 140415
Guteryl Steel

PO#: 697886
Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-11
Analytical Due Date: 2011-08-19
Report Due Date: 2011-08-22
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A04BMW605D0001 DISSOLVED			2011-08-10 / 1015	MLKH4	WATER

SAMPLE COMMENTS:

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

CLIENT ANALYSIS SUMMARY

Storage Loc: TestAmerica St. Louis R256

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706 Shaw Environmental & Infrastructure Inc

Quote #: 89251 SDG:
Guteryl Steel
Report to: Kevin Cronin

#SMPS In LOT: 0

Date Received: 2011-08-11
Analytical Due Date: 2011-08-19
Report Due Date: 2011-08-22
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
4	A04BMW260001 DISSOLVED			2011-08-10 / 1320	MLKH8	WATER

SAMPLE COMMENTS:

ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

F1H110460

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R256

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-11

Analytical Due Date: 2011-08-19

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	A04BMW9000 DISSOLVED			2011-08-10 / 0	MLKJD	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	A04BMW9001 DISSOLVED			2011-08-10 / 0	MLKJE	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

Storage Loc: TestAmerica St. Louis R256

Project Manager: LMF
Quote #: 89251
SDG:
Project: 140415
Guteryl Steel
PO#: 697886
Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 0

Date Received: 2011-08-11
Analytical Due Date: 2011-08-19
Report Due Date: 2011-08-22
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	A04DMW704DD0001 DISSOLVED			2011-08-10 / 1115	MLKJJ	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-11

Analytical Due Date: 2011-08-19

Report Due Date: 2011-08-22

Report Type: B Standard Report

#SMPS in LOT: 0 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography, Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE # 8 | CLIENT SAMPLE ID: A04MW604D0001 | Site ID | Client Matrix: WATER | DATE/TIME SAMPLED: 2011-08-10 / 830 | WORKORDER: MLKJL

SAMPLE COMMENTS:

CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	A04DMW709D0001			2011-08-10 / 930	MLKJ5	WATER

SAMPLE COMMENTS:

PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H110460

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R256,V11

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-11

Analytical Due Date: 2011-08-19

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
10	A04BMW605D0001			2011-08-10 / 1015	MLKKA	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

Storage Loc: R256,V11

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-11

Analytical Due Date: 2011-08-19

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium lstead of 200.8

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
11	A04BMW260001			2011-08-10 / 1320	MLKKD	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANOARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	08		
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
12	A04BMW9000			2011-08-10 / 0	MLKKH	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H110460

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R256,V11

Project Manager: LMF
Quote #: 89251 SDG:
Project: 140415 Guteryl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 0

Date Received: 2011-08-11
Analytical Due Date: 2011-08-19
Report Due Date: 2011-08-22
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	*Extraction Chromatography - Sequential Actinides*	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
13	A04BMW9001			2011-08-10 / 0	MLKKK	WATER

SAMPLE COMMENTS:

CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R256,V11

Project Manager: LMF
Quote #: 89251 SDG:
Project: 140415 Guteryl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 0

Date Received: 2011-08-11
Analytical Due Date: 2011-08-19
Report Due Date: 2011-08-22
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
14	A04DMW704DD0001			2011-08-10 / 1115	MLKKN	WATER

SAMPLE COMMENTS:

CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H110460

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R256,V11

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 0

Date Received: 2011-08-11

Analytical Due Date: 2011-08-19

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

estAmerica St. Louis
715 Rider Trail North
th City, MO 63045
one 314.298.8566 fax 314.298.8757

cal 17

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/10/2011	COC No: 006
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
ncinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below ____			SDG No.
3) 782-4807 FAX	[X] 2 weeks			
oject Name: Former Guteri Specialty Steel Corporation FUSRA	[ ] 1 week			
e: Lockport, NY	[ ] 2 days			
) #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
4MW604D0001	8/10/2011	0830	Grab	GW	10	X		X	X	X	X	X	X	X					
4DMW709DD0001	8/10/2011	0930	Grab	GW	10	X		X	X	X	X	X	X	X					
4BMW605D0001	8/10/2011	1015	Grab	GW	10	X		X	X	X	X	X	X	X					
4BMW260001	8/10/2011	1320	Grab	GW	10	X		X	X	X	X	X	X	X					
4BMW9000	8/10/2011	---	Grab	GW	10	X		X	X	X	X	X	X	X					
4BMW9001	8/10/2011	---	Grab	GW	10	X		X	X	X	X	X	X	X					
4DMW704DD0001	8/10/2011	1115	Grab	GW	10	X		X	X	X	X	X	X	X					
							Dissolved 2xLP			250P	500P			3x40					
							Total 2xLP			250P			8.11.11						

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [X] Disposal By Lab [ ] Archive For ____ Months

Special Instructions/QC Requirements & Comments:

Relinquished by: Kevin Cronin	Company: Shaw E & I. Inc.	Date/Time: 8/10/11 1700	Received by:	Company: TEST AMERICA	Date/Time: 8/10/2011 @ 1700
Relinquished by:	Company: TEST AMERICA	Date/Time: 17:20 8/10/2011	Received by:	Company: TASL	Date/Time: 8.11.11 0930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica St. Louis

108 of 108

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F1H110460 TestAmerica St. Louis

CUR Form #: 0 7 7

CONDITION UPON RECEIPT FORM

Client: Shaw Env.

Quote No: 89251

COC/RFA No: 006

Initiated By: SN Date: 8.11.11 Time: 0930

Shipping Information

Shipper: FedEx UPS DHL Courier Client Other: _____ Multiple Packages: Y N

Shipping # (s):*		Sample Temperature (s):**	
1. 4485 0258 3333	6.	1. 2	6.
2. 3403	7.	2. ambient	7.
3. 3425	8.	3.	8.
4.	9.	4.	9.
5.	10.	5.	10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	Y N	Are there custody seals present on the cooler?	8.	Y N	Are there custody seals present on bottles?
2.	Y N N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N N/A	Do custody seals on bottles appear to be tampered with?
3.	Y N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	Y N	Sample received with Chain of Custody?	11.	Y N N/A	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	Y N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	Y N	Sample received in proper containers?
6.	Y N	Was sample received broken?	13.	Y N N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	Y N	Is sample volume sufficient for analysis?	14.	Y N N/A	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

A04DW709DD0001 filtered & total and
6040001
had pH of 7; per L.F. used HNO_3 lot K11059
to correct pH.

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 8/12/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004 rev13, REVISED 05/27/11 \\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin-0004 CUR.doc

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. Y40415

Guteryl Steel

Lot #: F1H120447

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 25, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H120447

This report contains the analytical results for the 10 samples received under chain of custody by TestAmerica in St. Louis on August 12, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1230199 and 1231041
Tertahydrofuran was removed from the initial calibration lowest point due to poor response. Isobutanol, n-Butanol, 2-Chloroethylvinyl ether, 4-Methyl-2-pentanone and 2-Hexanone were removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration. The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

Affected Samples:
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Batch: 1230199
The internal standard(s) recovery is outside the lower QC limit, indicating a potential positive bias. There were no target analytes associated with this internal standard observed above the reporting limit in the sample; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1H120447 (6): A04MW602D0001

Batch: 1231041
The sample was analyzed at a dilution due to high concentrations of target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

The internal standard recoveries are within QC limits as compared to the IS limits set by the CCV for this 12 hour clock. However, the client requirement for DOD4.1 has the IS limits set to the mid-point of the ICAL as requested. The internal standard(s) recovery is outside the lower QC limit, indicating a potential positive bias. There were no target analytes associated with this internal standard observed above the reporting limit in the sample; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1227139
The MS (MSD) recovery for calcium and sodium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

Strontium was observed in the CCB above the reporting limit. Associated samples which exhibit concentrations greater than ten (10) times the concentrations observed in the CCB, do not require re-analysis.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H120447 (1): A04MW602D0001 DISSOLVED
F1H120447 (2): A04MW702DD0001 DISSOLVED
F1H120447 (3): A03AMW13D0001 DISSOLVED
F1H120447 (4): A04DMW708DD0001 DISSOLVED
F1H120447 (5): A04DMW9002 DISSOLVED
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (8): A03AMW13D0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Chloride (MCAWW 300.0A)

Batch: 1224148
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (8): A03AMW13D0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Fluoride (MCAWW 300.0A)

Batch: 1224149
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (8): A03AMW13D0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Sulfate (MCAWW 300.0A)

Batch: 1224153
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (8): A03AMW13D0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Nitrite as N (MCAWW 300.0A)

Batch: 1224151
The following samples were reported ND at dilution for Nitrite, due to interference with Chloride in the undiluted runs. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (8): A03AMW13D0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1224152
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (8): A03AMW13D0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)
There was insufficient sample provided to perform the sample duplicate, an LCS duplicate was used instead.

Affected Samples:
F1H120447 (1): A04MW602D0001 DISSOLVED
F1H120447 (2): A04MW702DD0001 DISSOLVED
F1H120447 (3): A03AMW13D0001 DISSOLVED
F1H120447 (4): A04DMW708DD0001 DISSOLVED
F1H120447 (5): A04DMW9002 DISSOLVED
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (8): A03AMW13D0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

There was insufficient sample provided to perform the analysis at the method specified amount. A reduced sample amount was prepared. Count times were adjusted accordingly to meet client reporting limits. The Uranium reporting limit was achieved without adjustment to the count time.

Affected Samples:
F1H120447 (1): A04MW602D0001 DISSOLVED

Total Dissolved Solids (MCAWW 160.1)
The samples were analyzed at a dilution based on high concentrations of target analytes. The reporting limit has been adjusted accordingly.

Affected Samples:
F1H120447 (7): A04MW702DD0001

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H120447

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H120447

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLLNJ	001	A04MW602D0001 DISSOLVED	08/11/11	09:15
MLLNT	002	A04MW702DD0001 DISSOLVED	08/11/11	10:15
MLLNV	003	A03AMW13D0001 DISSOLVED	08/11/11	12:00
MLLNW	004	A04DMW708DD0001 DISSOLVED	08/11/11	14:10
MLLNX	005	A04DMW9002 DISSOLVED	08/11/11	
MLLN1	006	A04MW602D0001	08/11/11	09:15
MLLN7	007	A04MW702DD0001	08/11/11	10:15
MLLN9	008	A03AMW13D0001	08/11/11	12:00
MLLPA	009	A04DMW708DD0001	08/11/11	14:10
MLLPE	010	A04DMW9002	08/11/11	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-001 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**112**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLLNJ1A3**
		Dilution Factor: 1		Analysis Time..: 17:59		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AD
		Dilution Factor: 1		Analysis Time..: 10:13		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AE
		Dilution Factor: 1		Analysis Time..: 10:13		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AC
		Dilution Factor: 1		Analysis Time..: 10:13		
Barium	**26.0 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1AF**
		Dilution Factor: 1		Analysis Time..: 10:13		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AG
		Dilution Factor: 1		Analysis Time..: 10:13		
Calcium	**86100**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1AH**
		Dilution Factor: 1		Analysis Time..: 10:13		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AJ
		Dilution Factor: 1		Analysis Time..: 10:13		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AK
		Dilution Factor: 1		Analysis Time..: 10:13		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AL
		Dilution Factor: 1		Analysis Time..: 10:13		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AM
		Dilution Factor: 1		Analysis Time..: 10:13		
Iron	**57.5 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1AN**
		Dilution Factor: 1		Analysis Time..: 10:13		
Magnesium	**39500**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1AP**
		Dilution Factor: 1		Analysis Time..: 10:13		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**8.4 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1AQ**
		Dilution Factor: 1		Analysis Time..: 10:13		
Sodium	**76300 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLNJ1AR**
		Dilution Factor: 5		Analysis Time..: 13:01		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AT
		Dilution Factor: 1		Analysis Time..: 10:13		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AU
		Dilution Factor: 1		Analysis Time..: 10:13		
Antimony	**6.3 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1AV**
		Dilution Factor: 1		Analysis Time..: 10:13		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AW
		Dilution Factor: 1		Analysis Time..: 10:13		
Strontium	**500 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1AX**
		Dilution Factor: 1		Analysis Time..: 10:13		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1A0
		Dilution Factor: 1		Analysis Time..: 10:13		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1A1
		Dilution Factor: 1		Analysis Time..: 10:13		
Zinc	**20.5**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1A2**
		Dilution Factor: 1		Analysis Time..: 10:13		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-002 **Matrix.....:** WATER
Date Sampled...: 08/11/11 10:15 **Date Received..:** 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**5.8**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLLNT1AE**
		Dilution Factor: 1		Analysis Time..: 18:26		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AJ
		Dilution Factor: 1		Analysis Time..: 10:32		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AK
		Dilution Factor: 1		Analysis Time..: 10:32		
Arsenic	**2.7 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNT1AH**
		Dilution Factor: 1		Analysis Time..: 10:32		
Barium	**11.4 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNT1AL**
		Dilution Factor: 1		Analysis Time..: 10:32		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AM
		Dilution Factor: 1		Analysis Time..: 10:32		
Calcium	**473000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNT1AN**
		Dilution Factor: 1		Analysis Time..: 10:32		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AP
		Dilution Factor: 1		Analysis Time..: 10:32		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AQ
		Dilution Factor: 1		Analysis Time..: 10:32		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AR
		Dilution Factor: 1		Analysis Time..: 10:32		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AT
		Dilution Factor: 1		Analysis Time..: 10:32		
Iron	ND	100	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AU
		Dilution Factor: 1		Analysis Time..: 10:32		
Magnesium	**171000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNT1AV**
		Dilution Factor: 1		Analysis Time..: 10:32		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**52.4**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNT1AW**
		Dilution Factor: 1		Analysis Time..: 10:32		
Sodium	**176000 B**	**20000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLNT1AX**
		Dilution Factor: 20		Analysis Time..: 13:21		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1A0
		Dilution Factor: 1		Analysis Time..: 10:32		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1A1
		Dilution Factor: 1		Analysis Time..: 10:32		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1A2
		Dilution Factor: 1		Analysis Time..: 10:32		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1A3
		Dilution Factor: 1		Analysis Time..: 10:32		
Strontium	**9540 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNT1A4**
		Dilution Factor: 1		Analysis Time..: 10:32		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AA
		Dilution Factor: 1		Analysis Time..: 10:32		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AC
		Dilution Factor: 1		Analysis Time..: 10:32		
Zinc	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AD
		Dilution Factor: 1		Analysis Time..: 10:32		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03AMW13D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-003 **Matrix.....:** WATER
Date Sampled...: 08/11/11 12:00 **Date Received..:** 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**80.2**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLLNV1AE**
		Dilution Factor: 1		Analysis Time..: 18:39		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AJ
		Dilution Factor: 1		Analysis Time..: 10:45		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AK
		Dilution Factor: 1		Analysis Time..: 10:45		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AH
		Dilution Factor: 1		Analysis Time..: 10:45		
Barium	**61.3**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNV1AL**
		Dilution Factor: 1		Analysis Time..: 10:45		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AM
		Dilution Factor: 1		Analysis Time..: 10:45		
Calcium	**50300**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNV1AN**
		Dilution Factor: 1		Analysis Time..: 10:45		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AP
		Dilution Factor: 1		Analysis Time..: 10:45		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AQ
		Dilution Factor: 1		Analysis Time..: 10:45		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AR
		Dilution Factor: 1		Analysis Time..: 10:45		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AT
		Dilution Factor: 1		Analysis Time..: 10:45		
Iron	**61.8 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNV1AU**
		Dilution Factor: 1		Analysis Time..: 10:45		
Magnesium	**17600**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNV1AV**
		Dilution Factor: 1		Analysis Time..: 10:45		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03AMW13D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**189**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNV1AW**
		Dilution Factor: 1		Analysis Time..: 10:45		
Sodium	**208000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLNV1AX**
		Dilution Factor: 5		Analysis Time..: 13:33		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1A0
		Dilution Factor: 1		Analysis Time..: 10:45		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1A1
		Dilution Factor: 1		Analysis Time..: 10:45		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1A2
		Dilution Factor: 1		Analysis Time..: 10:45		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1A3
		Dilution Factor: 1		Analysis Time..: 10:45		
Strontium	**176 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNV1A4**
		Dilution Factor: 1		Analysis Time..: 10:45		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AA
		Dilution Factor: 1		Analysis Time..: 10:45		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AC
		Dilution Factor: 1		Analysis Time..: 10:45		
Zinc	**168**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNV1AD**
		Dilution Factor: 1		Analysis Time..: 10:45		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-004 **Matrix.....:** WATER
Date Sampled...: 08/11/11 14:10 **Date Received..:** 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**23.0**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLLNW1AE**
		Dilution Factor: 1		Analysis Time..: 18:46		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AJ
		Dilution Factor: 1		Analysis Time..: 10:58		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AK
		Dilution Factor: 1		Analysis Time..: 10:58		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AH
		Dilution Factor: 1		Analysis Time..: 10:58		
Barium	**11.6 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNW1AL**
		Dilution Factor: 1		Analysis Time..: 10:58		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AM
		Dilution Factor: 1		Analysis Time..: 10:58		
Calcium	**182000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNW1AN**
		Dilution Factor: 1		Analysis Time..: 10:58		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AP
		Dilution Factor: 1		Analysis Time..: 10:58		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AQ
		Dilution Factor: 1		Analysis Time..: 10:58		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AR
		Dilution Factor: 1		Analysis Time..: 10:58		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AT
		Dilution Factor: 1		Analysis Time..: 10:58		
Iron	**144**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNW1AU**
		Dilution Factor: 1		Analysis Time..: 10:58		
Magnesium	**51000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNW1AV**
		Dilution Factor: 1		Analysis Time..: 10:58		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**11.0 J**	15.0	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNW1AW**
		Dilution Factor: 1		Analysis Time..: 10:58		
Sodium	**114000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLNW1AX**
		Dilution Factor: 5		Analysis Time..: 13:46		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1A0
		Dilution Factor: 1		Analysis Time..: 10:58		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1A1
		Dilution Factor: 1		Analysis Time..: 10:58		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1A2
		Dilution Factor: 1		Analysis Time..: 10:58		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1A3
		Dilution Factor: 1		Analysis Time..: 10:58		
Strontium	**1970 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNW1A4**
		Dilution Factor: 1		Analysis Time..: 10:58		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AA
		Dilution Factor: 1		Analysis Time..: 10:58		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AC
		Dilution Factor: 1		Analysis Time..: 10:58		
Zinc	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AD
		Dilution Factor: 1		Analysis Time..: 10:58		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-005 Matrix.....: WATER
Date Sampled...: 08/11/11 Date Received..: 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	23.2	1.0 Dilution Factor: 1	ug/L	SW846 6020A Analysis Time..: 19:06	08/15-08/17/11	MLLNX1AE
Prep Batch #...: 1227139						
Silver	ND	10.0 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 11:17	08/15-08/20/11	MLLNX1AJ
Aluminum	ND	200 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 11:17	08/15-08/20/11	MLLNX1AK
Arsenic	ND	10.0 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 11:17	08/15-08/20/11	MLLNX1AH
Barium	11.6 J	50.0 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 11:17	08/15-08/20/11	MLLNX1AL
Beryllium	ND	5.0 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 11:17	08/15-08/20/11	MLLNX1AM
Calcium	177000	1000 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 11:17	08/15-08/20/11	MLLNX1AN
Cadmium	ND	5.0 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 11:17	08/15-08/20/11	MLLNX1AP
Cobalt	ND	50.0 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 11:17	08/15-08/20/11	MLLNX1AQ
Chromium	ND	10.0 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 11:17	08/15-08/20/11	MLLNX1AR
Copper	ND	25.0 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 11:17	08/15-08/20/11	MLLNX1AT
Iron	147	100 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 11:17	08/15-08/20/11	MLLNX1AU
Magnesium	49400	1000 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 11:17	08/15-08/20/11	MLLNX1AV

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	10.2 J	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AW
		Dilution Factor: 1		Analysis Time..: 11:17		
Sodium	113000 B	5000	ug/L	SW846 6010C	08/15-08/19/11	MLLNX1AX
		Dilution Factor: 5		Analysis Time..: 14:05		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1A0
		Dilution Factor: 1		Analysis Time..: 11:17		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1A1
		Dilution Factor: 1		Analysis Time..: 11:17		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1A2
		Dilution Factor: 1		Analysis Time..: 11:17		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1A3
		Dilution Factor: 1		Analysis Time..: 11:17		
Strontium	1940 B	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1A4
		Dilution Factor: 1		Analysis Time..: 11:17		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AA
		Dilution Factor: 1		Analysis Time..: 11:17		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AC
		Dilution Factor: 1		Analysis Time..: 11:17		
Zinc	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AD
		Dilution Factor: 1		Analysis Time..: 11:17		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001

GC/MS Volatiles

Lot-Sample #...: F1H120447-006 **Work Order #...:** MLLN11AC **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11
Prep Date.....: 08/18/11 **Analysis Date..:** 08/18/11
Prep Batch #...: 1230199 **Analysis Time..:** 18:38
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.17 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**0.15 J**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001

GC/MS Volatiles

Lot-Sample #...: F1H120447-006 Work Order #...: MLLN11AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	112	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	108	(70 - 120)
4-Bromofluorobenzene	105	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001

TOTAL Metals

Lot-Sample #...: F1H120447-006 Matrix.....: WATER
Date Sampled...: 08/11/11 09:15 Date Received..: 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**113**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLLN11A5**
		Dilution Factor: 1		Analysis Time..: 19:12		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AF
		Dilution Factor: 1		Analysis Time..: 11:24		
Aluminum	**791**	**200**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11AG**
		Dilution Factor: 1		Analysis Time..: 11:24		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AE
		Dilution Factor: 1		Analysis Time..: 11:24		
Barium	**29.2 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11AH**
		Dilution Factor: 1		Analysis Time..: 11:24		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AJ
		Dilution Factor: 1		Analysis Time..: 11:24		
Calcium	**107000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11AK**
		Dilution Factor: 1		Analysis Time..: 11:24		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AL
		Dilution Factor: 1		Analysis Time..: 11:24		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AM
		Dilution Factor: 1		Analysis Time..: 11:24		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AN
		Dilution Factor: 1		Analysis Time..: 11:24		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AP
		Dilution Factor: 1		Analysis Time..: 11:24		
Iron	**861**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11AQ**
		Dilution Factor: 1		Analysis Time..: 11:24		
Magnesium	**46200**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11AR**
		Dilution Factor: 1		Analysis Time..: 11:24		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001

TOTAL Metals

Lot-Sample #...: F1H120447-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**100**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11AT**
		Dilution Factor: 1		Analysis Time..: 11:24		
Sodium	**79100 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLN11AU**
		Dilution Factor: 5		Analysis Time..: 14:12		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AV
		Dilution Factor: 1		Analysis Time..: 11:24		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AW
		Dilution Factor: 1		Analysis Time..: 11:24		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AX
		Dilution Factor: 1		Analysis Time..: 11:24		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11A0
		Dilution Factor: 1		Analysis Time..: 11:24		
Strontium	**504 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11A1**
		Dilution Factor: 1		Analysis Time..: 11:24		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11A2
		Dilution Factor: 1		Analysis Time..: 11:24		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11A3
		Dilution Factor: 1		Analysis Time..: 11:24		
Zinc	**38.9**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11A4**
		Dilution Factor: 1		Analysis Time..: 11:24		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001

General Chemistry

Lot-Sample #...: F1H120447-006 Work Order #...: MLLN1 Matrix.....: WATER
Date Sampled...: 08/11/11 09:15 Date Received..: 08/12/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	87.7	20.0	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100		Analysis Time..: 05:18		
Fluoride	2.1	0.10	mg/L	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 1		Analysis Time..: 04:34		
Nitrate	0.011 B	0.020	mg/L	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1		Analysis Time..: 04:34		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 5		Analysis Time..: 04:49		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1		Analysis Time..: 04:34		
Sulfate	122	5.0	mg/L	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 10		Analysis Time..: 05:03		
Total Alkalinity	320	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	645	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001

GC/MS Volatiles

Lot-Sample #...: F1H120447-007 Work Order #...: MLLN71AN Matrix.....: WATER
Date Sampled...: 08/11/11 10:15 Date Received..: 08/12/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 06:14
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**0.20 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.18 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.35 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001

GC/MS Volatiles

Lot-Sample #...: F1H120447-007 **Work Order #...:** MLLN71AN **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	107	(85 - 115)
1,2-Dichloroethane-d4	108	(70 - 120)
4-Bromofluorobenzene	104	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001

TOTAL Metals

Lot-Sample #...: F1H120447-007 Matrix.....: WATER
Date Sampled...: 08/11/11 10:15 Date Received..: 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**4.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLLN71AG**
		Dilution Factor: 1		Analysis Time..: 19:19		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71AR
		Dilution Factor: 1		Analysis Time..: 11:30		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLLN71AT
		Dilution Factor: 1		Analysis Time..: 11:30		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71AQ
		Dilution Factor: 1		Analysis Time..: 11:30		
Barium	**10.9 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71AU**
		Dilution Factor: 1		Analysis Time..: 11:30		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71AV
		Dilution Factor: 1		Analysis Time..: 11:30		
Calcium	**468000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71AW**
		Dilution Factor: 1		Analysis Time..: 11:30		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71AX
		Dilution Factor: 1		Analysis Time..: 11:30		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71A0
		Dilution Factor: 1		Analysis Time..: 11:30		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71A1
		Dilution Factor: 1		Analysis Time..: 11:30		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71A2
		Dilution Factor: 1		Analysis Time..: 11:30		
Iron	**28.4 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71A3**
		Dilution Factor: 1		Analysis Time..: 11:30		
Magnesium	**181000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71A4**
		Dilution Factor: 1		Analysis Time..: 11:30		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001

TOTAL Metals

Lot-Sample #...: F1H120447-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**54.2**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71A5**
		Dilution Factor: 1		Analysis Time..: 11:30		
Sodium	**204000 B**	**20000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLN71A6**
		Dilution Factor: 20		Analysis Time..: 14:18		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71A7
		Dilution Factor: 1		Analysis Time..: 11:30		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71A8
		Dilution Factor: 1		Analysis Time..: 11:30		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71A9
		Dilution Factor: 1		Analysis Time..: 11:30		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71AA
		Dilution Factor: 1		Analysis Time..: 11:30		
Strontium	**9620 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71AC**
		Dilution Factor: 1		Analysis Time..: 11:30		
Thallium	**4.4 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71AD**
		Dilution Factor: 1		Analysis Time..: 11:30		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71AE
		Dilution Factor: 1		Analysis Time..: 11:30		
Zinc	**13.1 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71AF**
		Dilution Factor: 1		Analysis Time..: 11:30		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001

General Chemistry

Lot-Sample #...: F1H120447-007 Work Order #...: MLLN7 Matrix.....: WATER
Date Sampled...: 08/11/11 10:15 Date Received..: 08/12/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	179	20.0	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100		Analysis Time..: 08:25		
Fluoride	1.2	1.0	mg/L	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 10		Analysis Time..: 08:11		
Nitrate	31.8	2.0	mg/L	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 100		Analysis Time..: 08:25		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 10		Analysis Time..: 08:11		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1		Analysis Time..: 07:56		
Sulfate	1960	50.0	mg/L	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 100		Analysis Time..: 08:25		
Total Alkalinity	210	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	3720	50.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 5		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03AMW13D0001

TOTAL Metals

Lot-Sample #...: F1H120447-008 Matrix.....: WATER
Date Sampled...: 08/11/11 12:00 Date Received..: 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**79.8**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLLN91AG**
		Dilution Factor: 1		Analysis Time..: 19:25		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AR
		Dilution Factor: 1		Analysis Time..: 11:37		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AT
		Dilution Factor: 1		Analysis Time..: 11:37		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AQ
		Dilution Factor: 1		Analysis Time..: 11:37		
Barium	**61.8**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN91AU**
		Dilution Factor: 1		Analysis Time..: 11:37		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AV
		Dilution Factor: 1		Analysis Time..: 11:37		
Calcium	**50400**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN91AW**
		Dilution Factor: 1		Analysis Time..: 11:37		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AX
		Dilution Factor: 1		Analysis Time..: 11:37		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91A0
		Dilution Factor: 1		Analysis Time..: 11:37		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91A1
		Dilution Factor: 1		Analysis Time..: 11:37		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91A2
		Dilution Factor: 1		Analysis Time..: 11:37		
Iron	**80.6 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN91A3**
		Dilution Factor: 1		Analysis Time..: 11:37		
Magnesium	**17600**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN91A4**
		Dilution Factor: 1		Analysis Time..: 11:37		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03AMW13D0001

TOTAL Metals

Lot-Sample #...: F1H120447-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**183**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN91A5**
		Dilution Factor: 1		Analysis Time..: 11:37		
Sodium	**217000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLN91A6**
		Dilution Factor: 5		Analysis Time..: 14:24		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91A7
		Dilution Factor: 1		Analysis Time..: 11:37		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91A8
		Dilution Factor: 1		Analysis Time..: 11:37		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91A9
		Dilution Factor: 1		Analysis Time..: 11:37		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AA
		Dilution Factor: 1		Analysis Time..: 11:37		
Strontium	**177 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN91AC**
		Dilution Factor: 1		Analysis Time..: 11:37		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AD
		Dilution Factor: 1		Analysis Time..: 11:37		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AE
		Dilution Factor: 1		Analysis Time..: 11:37		
Zinc	**166**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN91AF**
		Dilution Factor: 1		Analysis Time..: 11:37		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03AMW13D0001

General Chemistry

Lot-Sample #...: F1H120447-008 Work Order #...: MLLN9 Matrix.....: WATER
Date Sampled...: 08/11/11 12:00 Date Received..: 08/12/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	135	20.0	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100		Analysis Time..: 09:23		
Fluoride	3.6	0.50	mg/L	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 5		Analysis Time..: 08:54		
Nitrate	0.0084 B	0.020	mg/L	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1		Analysis Time..: 08:39		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 5		Analysis Time..: 08:54		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1		Analysis Time..: 08:39		
Sulfate	41.3	2.5	mg/L	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 5		Analysis Time..: 08:54		
Total Alkalinity	396	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	719	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001

GC/MS Volatiles

Lot-Sample #...: F1H120447-009 Work Order #...: MLLPA1CE Matrix.....: WATER
Date Sampled...: 08/11/11 14:10 Date Received..: 08/12/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 08:01
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**2.5**	**2.0**	**ug/L**
Chloroform	**0.34 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**8.7**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**30**	**1.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.37 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	**3.4**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	105	(70 - 120)
4-Bromofluorobenzene	107	(75 - 120)

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001

GC/MS Volatiles

Lot-Sample #...: F1H120447-009 Work Order #...: MLLPA1CE Matrix.....: WATER

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001

GC/MS Volatiles

Lot-Sample #...:	F1H120447-009	Work Order #...:	MLLPA2CE	Matrix.....:	WATER
Date Sampled...:	08/11/11 14:10	Date Received..:	08/12/11		
Prep Date.....:	08/19/11	Analysis Date..:	08/19/11		
Prep Batch #...:	1231041	Analysis Time..:	06:41		
Dilution Factor:	5				
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,2-Dichloroethene (total)	83 D	10	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	111	(85 - 115)
1,2-Dichloroethane-d4	107	(70 - 120)
4-Bromofluorobenzene	101	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001

TOTAL Metals

Lot-Sample #...: F1H120447-009 Matrix.....: WATER
Date Sampled...: 08/11/11 14:10 Date Received..: 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	22.4	1.0	ug/L	SW846 6020A	08/15-08/17/11	MLLPA1AT
		Dilution Factor: 1		Analysis Time..: 19:32		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1A3
		Dilution Factor: 1		Analysis Time..: 11:43		
Aluminum	89.5 J	200	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1A4
		Dilution Factor: 1		Analysis Time..: 11:43		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1A2
		Dilution Factor: 1		Analysis Time..: 11:43		
Barium	12.4 J	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1A5
		Dilution Factor: 1		Analysis Time..: 11:43		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1A6
		Dilution Factor: 1		Analysis Time..: 11:43		
Calcium	178000	1000	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1A7
		Dilution Factor: 1		Analysis Time..: 11:43		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1A8
		Dilution Factor: 1		Analysis Time..: 11:43		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AA
		Dilution Factor: 1		Analysis Time..: 11:43		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AC
		Dilution Factor: 1		Analysis Time..: 11:43		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AD
		Dilution Factor: 1		Analysis Time..: 11:43		
Iron	234	100	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AE
		Dilution Factor: 1		Analysis Time..: 11:43		
Magnesium	52200	1000	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AF
		Dilution Factor: 1		Analysis Time..: 11:43		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001

TOTAL Metals

Lot-Sample #...: F1H120447-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**19.4**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLPA1AG**
		Dilution Factor: 1		Analysis Time..: 11:43		
Sodium	**113000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLPA1AH**
		Dilution Factor: 5		Analysis Time..: 14:31		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AJ
		Dilution Factor: 1		Analysis Time..: 11:43		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AK
		Dilution Factor: 1		Analysis Time..: 11:43		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AL
		Dilution Factor: 1		Analysis Time..: 11:43		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AM
		Dilution Factor: 1		Analysis Time..: 11:43		
Strontium	**1890 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLPA1AN**
		Dilution Factor: 1		Analysis Time..: 11:43		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AP
		Dilution Factor: 1		Analysis Time..: 11:43		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AQ
		Dilution Factor: 1		Analysis Time..: 11:43		
Zinc	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AR
		Dilution Factor: 1		Analysis Time..: 11:43		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001

General Chemistry

Lot-Sample #...: F1H120447-009 Work Order #...: MLLPA Matrix.....: WATER
Date Sampled...: 08/11/11 14:10 Date Received..: 08/12/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	211	20.0	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100		Analysis Time..: 10:35		
Fluoride	0.56	0.10	mg/L	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 1		Analysis Time..: 09:37		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1		Analysis Time..: 09:37		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 10		Analysis Time..: 10:20		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1		Analysis Time..: 09:37		
Sulfate	357	50.0	mg/L	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 100		Analysis Time..: 10:35		
Total Alkalinity	231	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1240	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002

GC/MS Volatiles

Lot-Sample #...: F1H120447-010 **Work Order #...:** MLLPE1CE **Matrix.....:** WATER
Date Sampled...: 08/11/11 **Date Received..:** 08/12/11
Prep Date.....: 08/19/11 **Analysis Date..:** 08/19/11
Prep Batch #...: 1231041 **Analysis Time..:** 08:27
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	**3.5**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**2.6**	**2.0**	**ug/L**
Chloroform	**0.32 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**8.7**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**37**	**1.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.38 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.10 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
1,2-Dichloroethane-d4	108	(70 - 120)
4-Bromofluorobenzene	109	(75 - 120)

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002

GC/MS Volatiles

Lot-Sample #...: F1H120447-010 Work Order #...: MLLPE1CE Matrix.....: WATER

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002

GC/MS Volatiles

Lot-Sample #...: F1H120447-010 Work Order #...: MLLPE2CE Matrix.....: WATER
Date Sampled...: 08/11/11 Date Received..: 08/12/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 07:08
Dilution Factor: 5

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,2-Dichloroethene (total)	79 D	10	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
1,2-Dichloroethane-d4	105	(70 - 120)
4-Bromofluorobenzene	101	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002

TOTAL Metals

Lot-Sample #...: F1H120447-010 Matrix.....: WATER
Date Sampled...: 08/11/11 Date Received..: 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	22.5	1.0	ug/L	SW846 6020A	08/15-08/17/11	MLLPE1A5
		Dilution Factor: 1		Analysis Time..: 19:39		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AE
		Dilution Factor: 1		Analysis Time..: 11:49		
Aluminum	151 J	200	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AF
		Dilution Factor: 1		Analysis Time..: 11:49		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AD
		Dilution Factor: 1		Analysis Time..: 11:49		
Barium	13.3 J	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AG
		Dilution Factor: 1		Analysis Time..: 11:49		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AH
		Dilution Factor: 1		Analysis Time..: 11:49		
Calcium	187000	1000	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AJ
		Dilution Factor: 1		Analysis Time..: 11:49		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AK
		Dilution Factor: 1		Analysis Time..: 11:49		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AM
		Dilution Factor: 1		Analysis Time..: 11:49		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AN
		Dilution Factor: 1		Analysis Time..: 11:49		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AP
		Dilution Factor: 1		Analysis Time..: 11:49		
Iron	268	100	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AQ
		Dilution Factor: 1		Analysis Time..: 11:49		
Magnesium	55600	1000	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AR
		Dilution Factor: 1		Analysis Time..: 11:49		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002

TOTAL Metals

Lot-Sample #...: F1H120447-010 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	21.4	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLPE1AT**
		Dilution Factor: 1		Analysis Time..: 11:49		
Sodium	115000 B	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLPE1AU**
		Dilution Factor: 5		Analysis Time..: 14:37		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AV
		Dilution Factor: 1		Analysis Time..: 11:49		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AW
		Dilution Factor: 1		Analysis Time..: 11:49		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AX
		Dilution Factor: 1		Analysis Time..: 11:49		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1A0
		Dilution Factor: 1		Analysis Time..: 11:49		
Strontium	1980 B	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLPE1A1**
		Dilution Factor: 1		Analysis Time..: 11:49		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1A2
		Dilution Factor: 1		Analysis Time..: 11:49		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1A3
		Dilution Factor: 1		Analysis Time..: 11:49		
Zinc	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1A4
		Dilution Factor: 1		Analysis Time..: 11:49		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002

General Chemistry

Lot-Sample #...: F1H120447-010 Work Order #...: MLLPE Matrix.....: WATER
Date Sampled...: 08/11/11 Date Received..: 08/12/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	207	20.0	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100		Analysis Time..: 11:18		
Fluoride	0.60	0.10	mg/L	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 1		Analysis Time..: 10:49		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1		Analysis Time..: 10:49		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 10		Analysis Time..: 11:04		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1		Analysis Time..: 10:49		
Sulfate	346	50.0	mg/L	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 100		Analysis Time..: 11:18		
Total Alkalinity	232	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1220	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLTVV1AA Matrix.....: WATER
MB Lot-Sample #: F1H180000-199

Prep Date.....: 08/18/11 Analysis Time..: 11:50
Analysis Date..: 08/18/11 Prep Batch #...: 1230199
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	107	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLTVV1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	106	(70 - 120)		
4-Bromofluorobenzene	100	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLTXM1AA Matrix.....: WATER
MB Lot-Sample #: F1H190000-041

Prep Date.....: 08/19/11 Analysis Time..: 05:48
Analysis Date..: 08/19/11 Prep Batch #...: 1231041
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	106	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLTXM1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	103	(70 - 120)		
4-Bromofluorobenzene	103	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H150000-138 **Prep Batch #...:** 1227138						
Uranium	ND	1.0	ug/L	SW846 6020A	08/15-08/17/11	MLM771AA
		Dilution Factor: 1				
		Analysis Time..: 17:46				
MB Lot-Sample #: F1H150000-139 **Prep Batch #...:** 1227139						
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLM781A4
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CK
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A2
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Barium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A5
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Beryllium	**0.87 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLM781A6**
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A8
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Calcium	ND	1000	ug/L	SW846 6010C	08/15-08/20/11	MLM781A7
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CA
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A9
		Dilution Factor: 1				
		Analysis Time..: 10:00				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CC
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Iron	ND	100	ug/L	SW846 6010C	08/15-08/20/11	MLM781CD
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CJ
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Magnesium	ND	1000	ug/L	SW846 6010C	08/15-08/20/11	MLM781CE
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Manganese	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CF
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CH
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CL
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A3
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Sodium	**399 J**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLM781CG**
		Dilution Factor: 1				
		Analysis Time..: 12:49				
Strontium	**0.80 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLM781CM**
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CN
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CP
		Dilution Factor: 1				
		Analysis Time..: 10:00				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CQ

Dilution Factor: 1
Analysis Time..: 10:00

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H120447 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLTCF1AA		MB Lot-Sample #:	F1H120000-148	
	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Fluoride		Work Order #: MLTCH1AA		MB Lot-Sample #:	F1H120000-149	
	ND	0.10	mg/L	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Nitrate		Work Order #: MLTCJ1AA		MB Lot-Sample #:	F1H120000-150	
	ND	0.020	mg/L	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Nitrite		Work Order #: MLTCL1AA		MB Lot-Sample #:	F1H120000-151	
	ND	0.020	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Phosphate as P, Ortho		Work Order #: MLTCM1AA		MB Lot-Sample #:	F1H120000-152	
	0.069 B	0.50	mg/L	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Sulfate		Work Order #: MLTCN1AA		MB Lot-Sample #:	F1H120000-153	
	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Total Alkalinity		Work Order #: MLWW41AC		MB Lot-Sample #:	F1H220000-085	
	ND	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLQ6P1AA		MB Lot-Sample #:	F1H170000-114	
	ND	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLTVV1AC Matrix.....: WATER
LCS Lot-Sample#: F1H180000-199
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 10:30
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichloroethane	97	(70 - 130)	SW846 8260B
Benzene	95	(80 - 120)	SW846 8260B
Trichloroethene	90	(70 - 125)	SW846 8260B
1,2-Dichloropropane	91	(75 - 125)	SW846 8260B
Bromodichloromethane	98	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	98	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	107	(55 - 140)	SW846 8260B
Toluene	103	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	102	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	96	(75 - 125)	SW846 8260B
2-Hexanone	95	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	103	(60 - 135)	SW846 8260B
Chlorobenzene	96	(80 - 120)	SW846 8260B
Bromoform	108	(70 - 130)	SW846 8260B
Ethylbenzene	101	(75 - 125)	SW846 8260B
Styrene	109	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	93	(65 - 130)	SW846 8260B
Tetrachloroethene	101	(45 - 150)	SW846 8260B
1,2-Dichlorobenzene	100	(70 - 120)	SW846 8260B
cis-1,3-Dichloropropene	104	(70 - 130)	SW846 8260B
Dibromochloromethane	104	(60 - 135)	SW846 8260B
Vinyl chloride	87	(50 - 145)	SW846 8260B
Bromomethane	99	(30 - 145)	SW846 8260B
Chloroethane	90	(60 - 135)	SW846 8260B
Acetone	93	(40 - 140)	SW846 8260B
1,1-Dichloroethene	95	(70 - 130)	SW846 8260B
Methylene chloride	88	(55 - 140)	SW846 8260B
Carbon disulfide	84	(35 - 160)	SW846 8260B
1,1-Dichloroethane	93	(70 - 135)	SW846 8260B
2-Butanone	88	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	96	(85 - 115)	SW846 8260B
Chloroform	93	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	99	(65 - 130)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 **Work Order #...:** MLTVV1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H180000-199

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Carbon tetrachloride	**99**	**(65 - 140)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	101	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLTXM1AC Matrix.....: WATER
LCS Lot-Sample#: F1H190000-041
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 04:55
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Styrene	110	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	101	(65 - 130)	SW846 8260B
Tetrachloroethene	101	(45 - 150)	SW846 8260B
1,2-Dichlorobenzene	100	(70 - 120)	SW846 8260B
cis-1,3-Dichloropropene	106	(70 - 130)	SW846 8260B
Dibromochloromethane	103	(60 - 135)	SW846 8260B
Vinyl chloride	83	(50 - 145)	SW846 8260B
Bromomethane	101	(30 - 145)	SW846 8260B
Chloroethane	90	(60 - 135)	SW846 8260B
Acetone	93	(40 - 140)	SW846 8260B
1,1-Dichloroethene	99	(70 - 130)	SW846 8260B
Methylene chloride	92	(55 - 140)	SW846 8260B
Carbon disulfide	90	(35 - 160)	SW846 8260B
1,1-Dichloroethane	94	(70 - 135)	SW846 8260B
2-Butanone	101	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	97	(85 - 115)	SW846 8260B
Chloroform	94	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	100	(65 - 130)	SW846 8260B
Carbon tetrachloride	100	(65 - 140)	SW846 8260B
1,2-Dichloroethane	96	(70 - 130)	SW846 8260B
Benzene	95	(80 - 120)	SW846 8260B
Trichloroethene	91	(70 - 125)	SW846 8260B
1,2-Dichloropropane	95	(75 - 125)	SW846 8260B
Bromodichloromethane	100	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	96	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	106	(55 - 140)	SW846 8260B
Toluene	104	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	103	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	99	(75 - 125)	SW846 8260B
2-Hexanone	96	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	108	(60 - 135)	SW846 8260B
Chlorobenzene	95	(80 - 120)	SW846 8260B
Bromoform	109	(70 - 130)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 **Work Order #...:** MLTXM1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H190000-041

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Ethylbenzene	102	**(75 - 125)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H150000-138 **Prep Batch #...:** 1227138					
Uranium	105	(80 - 120)	SW846 6020A	08/15-08/17/11	MLM771AC
		Dilution Factor: 1		Analysis Time..: 17:52	
LCS Lot-Sample#: F1H150000-139 **Prep Batch #...:** 1227139					
Arsenic	106	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AA
		Dilution Factor: 1		Analysis Time..: 10:06	
Silver	95	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AC
		Dilution Factor: 1		Analysis Time..: 10:06	
Aluminum	104	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AD
		Dilution Factor: 1		Analysis Time..: 10:06	
Barium	103	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AE
		Dilution Factor: 1		Analysis Time..: 10:06	
Beryllium	108	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AF
		Dilution Factor: 1		Analysis Time..: 10:06	
Calcium	106	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AG
		Dilution Factor: 1		Analysis Time..: 10:06	
Cadmium	107	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AH
		Dilution Factor: 1		Analysis Time..: 10:06	
Cobalt	101	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AJ
		Dilution Factor: 1		Analysis Time..: 10:06	
Chromium	100	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AK
		Dilution Factor: 1		Analysis Time..: 10:06	
Copper	99	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AL
		Dilution Factor: 1		Analysis Time..: 10:06	
Iron	104	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AM
		Dilution Factor: 1		Analysis Time..: 10:06	
Magnesium	102	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AN
		Dilution Factor: 1		Analysis Time..: 10:06	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	103	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AP
		Dilution Factor: 1	Analysis Time..: 10:06		
Sodium	108	(80 - 120)	SW846 6010C	08/15-08/19/11	MLM781AQ
		Dilution Factor: 1	Analysis Time..: 12:55		
Nickel	104	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AR
		Dilution Factor: 1	Analysis Time..: 10:06		
Lead	103	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AT
		Dilution Factor: 1	Analysis Time..: 10:06		
Antimony	105	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AU
		Dilution Factor: 1	Analysis Time..: 10:06		
Selenium	110	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AV
		Dilution Factor: 1	Analysis Time..: 10:06		
Strontium	113	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AW
		Dilution Factor: 1	Analysis Time..: 10:06		
Thallium	101	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AX
		Dilution Factor: 1	Analysis Time..: 10:06		
Vanadium	100	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781A0
		Dilution Factor: 1	Analysis Time..: 10:06		
Zinc	115	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781A1
		Dilution Factor: 1	Analysis Time..: 10:06		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H120447 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLTCF1AC LCS Lot-Sample#: F1H120000-148			
	91	(90 - 110)	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 1	Analysis Time..: 04:05		
Fluoride		Work Order #: MLTCH1AC LCS Lot-Sample#: F1H120000-149			
	95	(90 - 110)	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 1	Analysis Time..: 04:05		
Nitrate		Work Order #: MLTCJ1AC LCS Lot-Sample#: F1H120000-150			
	99	(90 - 110)	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1	Analysis Time..: 04:05		
Nitrite		Work Order #: MLTCL1AC LCS Lot-Sample#: F1H120000-151			
	97	(90 - 110)	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 1	Analysis Time..: 04:05		
Phosphate as P, Ortho		Work Order #: MLTCM1AC LCS Lot-Sample#: F1H120000-152			
	94	(90 - 110)	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1	Analysis Time..: 04:05		
Sulfate		Work Order #: MLTCN1AC LCS Lot-Sample#: F1H120000-153			
	93	(90 - 110)	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 1	Analysis Time..: 04:05		
Total Alkalinity		Work Order #: MLWW41AA LCS Lot-Sample#: F1H220000-085			
	93	(90 - 110)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLWW41AD LCS Lot-Sample#: F1H220000-085			
	94	(90 - 110)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLQ6P1AC LCS Lot-Sample#: F1H170000-114			
	98	(90 - 113)	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLLN11CV-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-006 MLLN11CW-MSD
Date Sampled...: 08/11/11 09:15 Date Received..: 08/12/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 19:05
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	86	(70 - 130)			SW846 8260B
	98	(70 - 130)	13	(0-20)	SW846 8260B
Dibromochloromethane	94	(60 - 135)			SW846 8260B
	103	(60 - 135)	8.5	(0-20)	SW846 8260B
Vinyl chloride	78	(50 - 145)			SW846 8260B
	91	(50 - 145)	15	(0-20)	SW846 8260B
Bromomethane	87	(30 - 145)			SW846 8260B
	95	(30 - 145)	9.2	(0-20)	SW846 8260B
Chloroethane	87	(60 - 135)			SW846 8260B
	97	(60 - 135)	11	(0-20)	SW846 8260B
Acetone	94	(40 - 140)			SW846 8260B
	96	(40 - 140)	2.0	(0-20)	SW846 8260B
1,1-Dichloroethene	97	(70 - 130)			SW846 8260B
	105	(70 - 130)	7.2	(0-20)	SW846 8260B
Methylene chloride	88	(55 - 140)			SW846 8260B
	95	(55 - 140)	7.3	(0-20)	SW846 8260B
Carbon disulfide	91	(35 - 160)			SW846 8260B
	96	(35 - 160)	5.6	(0-20)	SW846 8260B
1,1-Dichloroethane	92	(70 - 135)			SW846 8260B
	100	(70 - 135)	8.3	(0-20)	SW846 8260B
2-Butanone	88	(30 - 150)			SW846 8260B
	94	(30 - 150)	7.1	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	91	(85 - 115)			SW846 8260B
	100	(85 - 115)	9.8	(0-20)	SW846 8260B
Chloroform	89	(65 - 135)			SW846 8260B
	97	(65 - 135)	8.4	(0-20)	SW846 8260B
1,1,1-Trichloroethane	95	(65 - 130)			SW846 8260B
	103	(65 - 130)	8.8	(0-20)	SW846 8260B
Carbon tetrachloride	95	(65 - 140)			SW846 8260B
	103	(65 - 140)	8.2	(0-20)	SW846 8260B
1,2-Dichloroethane	89	(70 - 130)			SW846 8260B
	100	(70 - 130)	12	(0-20)	SW846 8260B
Benzene	92	(80 - 120)			SW846 8260B
	100	(80 - 120)	8.3	(0-20)	SW846 8260B
Trichloroethene	89	(70 - 125)			SW846 8260B
	93	(70 - 125)	4.5	(0-20)	SW846 8260B
1,2-Dichloropropane	89	(75 - 125)			SW846 8260B
	96	(75 - 125)	8.4	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLLN11CV-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-006 MLLN11CW-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	94	(75 - 120)			SW846 8260B
	102	(75 - 120)	8.1	(0-20)	SW846 8260B
1,1,2-Trichloroethane	92	(75 - 125)			SW846 8260B
	102	(75 - 125)	11	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	96	(55 - 140)			SW846 8260B
	106	(55 - 140)	9.7	(0-20)	SW846 8260B
Toluene	100	(75 - 120)			SW846 8260B
	103	(75 - 120)	3.2	(0-20)	SW846 8260B
1,3-Dichlorobenzene	98	(75 - 125)			SW846 8260B
	102	(75 - 125)	3.4	(0-20)	SW846 8260B
1,4-Dichlorobenzene	94	(75 - 125)			SW846 8260B
	99	(75 - 125)	4.5	(0-20)	SW846 8260B
2-Hexanone	82	(55 - 130)			SW846 8260B
	98	(55 - 130)	17	(0-20)	SW846 8260B
4-Methyl-2-pentanone	88	(60 - 135)			SW846 8260B
	102	(60 - 135)	15	(0-20)	SW846 8260B
Chlorobenzene	93	(80 - 120)			SW846 8260B
	98	(80 - 120)	5.5	(0-20)	SW846 8260B
Bromoform	100	(70 - 130)			SW846 8260B
	108	(70 - 130)	7.6	(0-20)	SW846 8260B
Ethylbenzene	98	(75 - 125)			SW846 8260B
	104	(75 - 125)	5.7	(0-20)	SW846 8260B
Styrene	106	(65 - 135)			SW846 8260B
	112	(65 - 135)	6.0	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	90	(65 - 130)			SW846 8260B
	99	(65 - 130)	9.1	(0-20)	SW846 8260B
Tetrachloroethene	96	(45 - 150)			SW846 8260B
	101	(45 - 150)	5.7	(0-20)	SW846 8260B
1,2-Dichlorobenzene	95	(70 - 120)			SW846 8260B
	100	(70 - 120)	5.3	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
	105	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
	108	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
	105	(70 - 120)
4-Bromofluorobenzene	97	(75 - 120)
	98	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLLN71CF-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-007 MLLN71CG-MSD
Date Sampled...: 08/11/11 10:15 Date Received..: 08/12/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 09:20
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	101	(70 - 130)			SW846 8260B
	103	(70 - 130)	2.4	(0-20)	SW846 8260B
Dibromochloromethane	104	(60 - 135)			SW846 8260B
	102	(60 - 135)	1.6	(0-20)	SW846 8260B
Vinyl chloride	93	(50 - 145)			SW846 8260B
	96	(50 - 145)	2.4	(0-20)	SW846 8260B
Bromomethane	107	(30 - 145)			SW846 8260B
	102	(30 - 145)	5.0	(0-20)	SW846 8260B
Chloroethane	100	(60 - 135)			SW846 8260B
	97	(60 - 135)	3.2	(0-20)	SW846 8260B
Acetone	111	(40 - 140)			SW846 8260B
	95	(40 - 140)	15	(0-20)	SW846 8260B
1,1-Dichloroethene	107	(70 - 130)			SW846 8260B
	96	(70 - 130)	11	(0-20)	SW846 8260B
Methylene chloride	133	(55 - 140)			SW846 8260B
	135	(55 - 140)	1.7	(0-20)	SW846 8260B
Carbon disulfide	97	(35 - 160)			SW846 8260B
	86	(35 - 160)	12	(0-20)	SW846 8260B
1,1-Dichloroethane	100	(70 - 135)			SW846 8260B
	95	(70 - 135)	4.6	(0-20)	SW846 8260B
2-Butanone	91	(30 - 150)			SW846 8260B
	97	(30 - 150)	6.4	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	100	(85 - 115)			SW846 8260B
	98	(85 - 115)	2.4	(0-20)	SW846 8260B
Chloroform	99	(65 - 135)			SW846 8260B
	94	(65 - 135)	5.1	(0-20)	SW846 8260B
1,1,1-Trichloroethane	108	(65 - 130)			SW846 8260B
	102	(65 - 130)	5.6	(0-20)	SW846 8260B
Carbon tetrachloride	108	(65 - 140)			SW846 8260B
	102	(65 - 140)	5.4	(0-20)	SW846 8260B
1,2-Dichloroethane	99	(70 - 130)			SW846 8260B
	100	(70 - 130)	0.19	(0-20)	SW846 8260B
Benzene	100	(80 - 120)			SW846 8260B
	98	(80 - 120)	2.2	(0-20)	SW846 8260B
Trichloroethene	93	(70 - 125)			SW846 8260B
	94	(70 - 125)	0.16	(0-20)	SW846 8260B
1,2-Dichloropropane	99	(75 - 125)			SW846 8260B
	98	(75 - 125)	0.89	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLLN71CF-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-007 MLLN71CG-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	103	(75 - 120)			SW846 8260B
	102	(75 - 120)	0.87	(0-20)	SW846 8260B
1,1,2-Trichloroethane	102	(75 - 125)			SW846 8260B
	97	(75 - 125)	5.2	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	107	(55 - 140)			SW846 8260B
	107	(55 - 140)	0.56	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	102	(75 - 120)	3.8	(0-20)	SW846 8260B
1,3-Dichlorobenzene	107	(75 - 125)			SW846 8260B
	105	(75 - 125)	2.2	(0-20)	SW846 8260B
1,4-Dichlorobenzene	100	(75 - 125)			SW846 8260B
	101	(75 - 125)	1.0	(0-20)	SW846 8260B
2-Hexanone	96	(55 - 130)			SW846 8260B
	91	(55 - 130)	5.8	(0-20)	SW846 8260B
4-Methyl-2-pentanone	96	(60 - 135)			SW846 8260B
	98	(60 - 135)	2.8	(0-20)	SW846 8260B
Chlorobenzene	100	(80 - 120)			SW846 8260B
	98	(80 - 120)	1.7	(0-20)	SW846 8260B
Bromoform	107	(70 - 130)			SW846 8260B
	111	(70 - 130)	3.0	(0-20)	SW846 8260B
Ethylbenzene	105	(75 - 125)			SW846 8260B
	104	(75 - 125)	1.2	(0-20)	SW846 8260B
Styrene	114	(65 - 135)			SW846 8260B
	110	(65 - 135)	3.6	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	97	(65 - 130)			SW846 8260B
	96	(65 - 130)	1.5	(0-20)	SW846 8260B
Tetrachloroethene	104	(45 - 150)			SW846 8260B
	101	(45 - 150)	2.3	(0-20)	SW846 8260B
1,2-Dichlorobenzene	104	(70 - 120)			SW846 8260B
	103	(70 - 120)	1.2	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
	102	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
	102	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)
	100	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H120447-001 **Prep Batch #...:** 1227138							
Uranium	107	(80 - 120)			SW846 6020A	08/15-08/17/11	MLLNJ1A5
	109	(80 - 120)	1.4	(0-20)	SW846 6020A	08/15-08/17/11	MLLNJ1A6
		Dilution Factor: 1					
		Analysis Time..: 18:12					
MS Lot-Sample #: F1H120447-001 **Prep Batch #...:** 1227139							
Aluminum	103	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CC
	97	(80 - 120)	5.6	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CD
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Antimony	101	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C9
	96	(80 - 120)	5.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DA
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Arsenic	104	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1A7
	98	(80 - 120)	5.8	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1A8
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Barium	101	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CE
	96	(80 - 120)	4.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CF
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Beryllium	105	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CG
	101	(80 - 120)	3.9	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CH
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Cadmium	101	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CL
	96	(80 - 120)	5.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CM
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Calcium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CJ
	63 N	(80 - 120)	3.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CK
		Dilution Factor: 1					
		Analysis Time..: 10:19					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CQ
	92	(80 - 120)	4.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CR
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Cobalt	95	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CN
	90	(80 - 120)	4.9	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CP
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Copper	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CT
	92	(80 - 120)	4.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CU
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Iron	99	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CV
	94	(80 - 120)	4.6	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CW
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Lead	97	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C7
	92	(80 - 120)	5.8	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C8
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Magnesium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CX
	80	(80 - 120)	3.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C0
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Manganese	98	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C1
	94	(80 - 120)	4.0	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C2
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Nickel	97	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C5
	91	(80 - 120)	5.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C6
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Selenium	105	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DC
	98	(80 - 120)	7.1	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DD
		Dilution Factor: 1					
		Analysis Time..: 10:19					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	92	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1A9
	88	(80 - 120)	4.6	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CA
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Sodium	104	(80 - 120)			SW846 6010C	08/15-08/19/11	MLLNJ1C3
	161 N	(80 - 120)	6.3	(0-20)	SW846 6010C	08/15-08/19/11	MLLNJ1C4
		Dilution Factor: 5					
		Analysis Time..: 13:08					
Strontium	109	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DE
	101	(80 - 120)	4.9	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DF
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Thallium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DG
	91	(80 - 120)	5.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DH
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Vanadium	97	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DJ
	93	(80 - 120)	3.8	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DK
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Zinc	110	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DL
	103	(80 - 120)	6.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DM
		Dilution Factor: 1					
		Analysis Time..: 10:19					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H120447 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLKJL1CV		MS Lot-Sample #: F1H110460-008	
	103	(90 - 110)	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 500	Analysis Time..: 11:47		
Chloride		Work Order #...: MLLN11CG		MS Lot-Sample #: F1H120447-006	
	95	(90 - 110)	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100	Analysis Time..: 05:18		
Fluoride		Work Order #...: MLLN11CJ		MS Lot-Sample #: F1H120447-006	
	110	(90 - 110)	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 1	Analysis Time..: 04:34		
Nitrate		Work Order #...: MLLN11CL		MS Lot-Sample #: F1H120447-006	
	97	(90 - 110)	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1	Analysis Time..: 04:34		
Nitrite		Work Order #...: MLLN11CN		MS Lot-Sample #: F1H120447-006	
	71 N	(90 - 110)	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 5	Analysis Time..: 04:49		
Phosphate as P, Ortho		Work Order #...: MLLN11CQ		MS Lot-Sample #: F1H120447-006	
	71 N	(90 - 110)	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1	Analysis Time..: 04:34		
Sulfate		Work Order #...: MLLN11CT		MS Lot-Sample #: F1H120447-006	
	100	(90 - 110)	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 10	Analysis Time..: 05:03		
Total Alkalinity		Work Order #...: MLKJ51CF		MS Lot-Sample #: F1H110460-009	
	96	(80 - 120)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H120447 **Work Order #...:** MLLN1-SMP MLLN1-DUP **Matrix.....:** WATER

Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #:	F1H120447-006	
	645	665	mg/L	3.1	(0-0.0)	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1				Analysis Time..: 00:00		
Chloride						SD Lot-Sample #:	F1H120447-006	
	87.7	86.1	mg/L	1.9	(0-20)	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100				Analysis Time..: 05:18		
Fluoride						SD Lot-Sample #:	F1H120447-006	
	2.1	2.1	mg/L	0.25	(0-20)	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 1				Analysis Time..: 04:34		
Nitrate						SD Lot-Sample #:	F1H120447-006	
	0.011 B	0.015 B	mg/L	28	(0-20)	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1				Analysis Time..: 04:34		
Nitrite						SD Lot-Sample #:	F1H120447-006	
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 5				Analysis Time..: 04:49		
Phosphate as P, Ortho						SD Lot-Sample #:	F1H120447-006	
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1				Analysis Time..: 04:34		
Sulfate						SD Lot-Sample #:	F1H120447-006	
	122	121	mg/L	0.87	(0-20)	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 10				Analysis Time..: 05:03		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H120447 **Work Order #...:** MLKJ5-SMP MLKJ5-DUP **Matrix.....:** WATER

Date Sampled...: 08/10/11 09:30 **Date Received..:** 08/11/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #:	F1H110460-009	
	256	257	mg/L	0.31	(0-20)	MCAWW 310.1	08/22/11	1234085

Dilution Factor: 1 Analysis Time..: 00:00

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H120447-001
Work Order: MLLNJ
Matrix: WATER

Date Collected: 08/11/11 0915
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1231165		Yld % 52
Uranium 234	36.9		3.4	0.1	0.06	08/19/11	08/21/11
Uranium 235/236	2.08		0.42	0.10	0.05	08/19/11	08/21/11
Uranium 238	36.8		3.4	0.1	0.06	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H120447-002
Work Order: MLLNT
Matrix: WATER

Date Collected: 08/11/11 1015
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1231165		Yld % 65
Uranium 234	4.94		0.61	0.10	0.05	08/19/11	08/21/11
Uranium 235/236	0.123		0.081	0.100	0.057	08/19/11	08/21/11
Uranium 238	1.47		0.27	0.10	0.05	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03AMW13D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H120447-003
Work Order: MLLNV
Matrix: WATER

Date Collected: 08/11/11 1200
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1231165		Yld % 61
Uranium 234	22.6		2.1	0.1	0.03	08/19/11	08/21/11
Uranium 235/236	1.13		0.27	0.10	0.04	08/19/11	08/21/11
Uranium 238	23.6		2.2	0.1	0.03	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H120447-004
Work Order: MLLNW
Matrix: WATER

Date Collected: 08/11/11 1410
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1231165		Yld % 79
Uranium 234	7.19		0.77	0.10	0.02	08/19/11	08/21/11
Uranium 235/236	0.30		0.11	0.10	0.03	08/19/11	08/21/11
Uranium 238	6.90		0.75	0.10	0.02	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002 DISSOLVED

Radiochemistry

Lab Sample ID: F1H120447-005
Work Order: MLLNX
Matrix: WATER

Date Collected: 08/11/11 0000
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 74
Uranium 234	7.51		0.83	0.10	0.05	08/19/11	08/21/11
Uranium 235/236	0.43		0.15	0.10	0.03	08/19/11	08/21/11
Uranium 238	7.06		0.79	0.10	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001

Radiochemistry

Lab Sample ID: F1H120447-006
Work Order: MLLN1
Matrix: WATER

Date Collected: 08/11/11 0915
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 46
Uranium 234	36.5		3.4	0.1	0.07	08/19/11	08/21/11
Uranium 235/236	1.84		0.40	0.10	0.05	08/19/11	08/21/11
Uranium 238	36.0		3.4	0.1	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001

Radiochemistry

Lab Sample ID: F1H120447-007
Work Order: MLLN7
Matrix: WATER

Date Collected: 08/11/11 1015
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1231165		Yld % 64
Uranium 234	6.65		0.77	0.10	0.03	08/19/11	08/21/11
Uranium 235/236	0.103		0.076	0.100	0.060	08/19/11	08/21/11
Uranium 238	1.84		0.32	0.10	0.03	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03AMW13D0001

Radiochemistry

Lab Sample ID: F1H120447-008
Work Order: MLLN9
Matrix: WATER

Date Collected: 08/11/11 1200
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 57
Uranium 234	23.9		2.3	0.1	0.05	08/19/11	08/21/11
Uranium 235/236	1.13		0.28	0.10	0.04	08/19/11	08/21/11
Uranium 238	24.6		2.3	0.1	0.03	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001

Radiochemistry

Lab Sample ID: F1H120447-009
Work Order: MLLPA
Matrix: WATER

Date Collected: 08/11/11 1410
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1231165		Yld % 67
Uranium 234	7.18		0.81	0.10	0.07	08/19/11	08/21/11
Uranium 235/236	0.31		0.13	0.10	0.08	08/19/11	08/21/11
Uranium 238	7.03		0.79	0.10	0.09	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002

Radiochemistry

Lab Sample ID: F1H120447-010
Work Order: MLLPE
Matrix: WATER

Date Collected: 08/11/11 0000
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1231165		Yld % 73
Uranium 234	7.03		0.78	0.10	0.06	08/19/11	08/21/11
Uranium 235/236	0.50		0.16	0.10	0.05	08/19/11	08/21/11
Uranium 238	7.39		0.81	0.10	0.06	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H120447
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1231165		Yld % 91	F1H190000-165B
Uranium 234	0.013	U	0.021	0.100	0.034	08/19/11	08/21/11
Uranium 235/236	0.009	U	0.018	0.100	0.025	08/19/11	08/21/11
Uranium 238	-0.0037	U	0.0053	0.100	0.039	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F1H120447
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ +/-)	% Yld	% Rec	QC Control Limits	Lab Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	A-01-R MOD			F1H190000-165C		
Uranium 234		3.26	2.97	0.40	89	91	(76 - 136)		
	Spk 2	3.26	3.27	0.43	80	100	(76 - 136)	10	%RPD
Uranium 238		3.39	3.32	0.43	89	98	(76 - 134)		
	Spk 2	3.39	3.60	0.46	80	106	(76 - 134)	8	%RPD
		Batch #:	1231165		Analysis Date:		08/21/11		

NOTE(S)
Calculations are performed before rounding to avoid round-off error in calculated results

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R262-3

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 10

Date Received: 2011-08-12

Analytical Due Date: 2011-08-19

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A04MW602D0001 DISSOLVED			2011-08-11 / 915	MLLNJ	WATER

SAMPLE COMMENTS:

	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
D	MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R262-3

Project Manager: LMF Quote #: 89251 SDG:

Project: Y40415 Guteryl Steel

PO#: 697886 Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-12

Analytical Due Date: 2011-08-19

Report Due Date: 2011-08-22

Report Type: B Standard Report

#SMPS in LOT: 10 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

D	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R262-3

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-12

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
Report Type: B Standard Report

#SMPS in LOT: 10
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A04MW702DD0001 DISSOLVED			2011-08-11 / 1015	MLLNT	WATER

SAMPLE COMMENTS:

SE	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MN	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MG	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CR	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846 6020A		WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A03AMW13D0001 DISSOLVED			2011-08-11 / 1200	MLLNV	WATER

SAMPLE COMMENTS:

MN	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R262-3

Project Manager: LMF
Quote #: 89251 SDG:
Project: Y40415 Guteryl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-12
Analytical Due Date: 2011-08-19
Report Due Date: 2011-08-22
Report Type: B Standard Report
#SMPS In LOT: 10 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	A04DMW708DD0001 DISSOLVED			2011-08-11 / 1410	MLLNW	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R262-3

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-12

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 10
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	A04DMW9002 DISSOLVED			2011-08-11 / 0	MLLNX	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R262-3

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-12

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
Report Type: B Standard Report

#SMPS In LOT: 10
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	A04MW602D0001			2011-08-11 / 915	MLLN1	WATER

SAMPLE COMMENTS:

FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R262-3,2-45

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-12

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 10
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	A04MW702DD0001			2011-08-11 / 1015	MLLN7	WATER

SAMPLE COMMENTS:

SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06 TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R262-3,2-45

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-12

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 10
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	A03AMW13D0001			2011-08-11 / 1200	MLLN9	WATER

SAMPLE COMMENTS:

PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R262-3,2-45

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-12

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 10
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
9	A04DMW708DD0001			2011-08-11 / 1410	MLLPA	WATER

SAMPLE COMMENTS:

FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R262-3,2-45

Project Manager: LMF
Quote #: 89251 SDG:
Date Received: 2011-08-12

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 10
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
10	A04DMW9002			2011-08-11 / 0	MLLPE	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

715 Rider Trail North

rth City, MO 63045

ne 314.298.8566 fax 314.298.8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/11/2011	COC No: 007
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
ncinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below ____			SDG No.
3) 782-4807 FAX	☒ 2 weeks			
oject Name: Former Guterl Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
4MW602D0001	8/11/2011	0915	Grab	GW	10	X		X	X	X	X	X	X	X		2xLP, 250P			Filtered
4AMW702DD0001	8/11/2011	1015	Grab	GW	10	X		X	X	X	X	X	X	X					
3AMW13D0001	8/11/2011	1200	Grab	GW	7	X		X	X	X	X	X	X			2xLP 250P 500P, 3x40 Total			
4DMW708DD0001	8/11/2011	1410	Grab	GW	10	X		X	X	X	X	X	X	X					
4DMW9002	8/11/2011	---	Grab	GW	10	X		X	X	X	X	X	X	X					

eservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

sible Hazard Identification

☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* ____ *Months*

ecial Instructions/QC Requirements & Comments:

inquished by: Lynn Cronin	Company: Shaw E & I. Inc.	Date/Time: 8/11/11 1635	Received by:	Company: BFLO	Date/Time: 08-11-11 16:35	
inquished by:	Company: BFLO	Date/Time: 08-11-11 17:00	Received by:	Company: TASL	Date/Time: 8.12.11 0920	
inquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:	

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F1H120447 TestAmerica St. Louis

CUR Form #: 1 4 4

CONDITION UPON RECEIPT FORM

Client: Shaw

Quote No: 89251

COC/RFA No: 007

Initiated By: [illegible] Date: 8.12.11 Time: 0920

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*

1. 4485 0258 3734 45
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Sample Temperature (s):**

1. ambient
2. 4
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 8/15/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. Y40415

Guteryl Steel

Lot #: F1H130407

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 25, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H130407

This report contains the analytical results for the 10 samples received under chain of custody by TestAmerica in St. Louis on August 13, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1230199
Tertahydrofuran was removed from the initial calibration lowest point due to poor response. Isobutanol, n-Butanol, 2-Chloroethylvinyl ether, 4-Methyl-2-pentanone and 2-Hexanone were removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration. The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

There was insufficient sample volume to perform MS/MSD analysis. An LCS/LCSD was performed to demonstrate accuracy and replicate precision.

The samples were analyzed at a dilution due to high concentrations of target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

The sample surrogate recovery is outside established QC limits. This excursion is attributed to a matrix interference which is physically evident in the sample. These samples foamed at the 1X and at a 5X dilution. The samples are reported at 5X as the lowest RL. The samples were also analyzed at a 50X dilution for analytes with high concentrations. The original analysis had similar surrogate failures.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (5): A04BMW9003

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1227139
The MS (MSD) recovery for calcium and sodium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery. No further action is required.

Strontium was observed in the CCB above the reporting limit. Associated samples which exhibit concentrations greater than ten (10) times the concentrations observed in the CCB, do not require re-analysis. Original results are reported.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (2): A02MW060001
F1H130407 (3): A02MW100001
F1H130407 (4): A02MW070001
F1H130407 (5): A04BMW9003
F1H130407 (6): A04BMW250001 DISSOLVED
F1H130407 (7): A02MW060001 DISSOLVED
F1H130407 (8): A02MW100001 DISSOLVED
F1H130407 (9): A02MW070001 DISSOLVED
F1H130407 (10): A04BMW9003 DISSOLVED

Nitrite as N (MCAWW 300.0A)

Batch: 1227060
The following samples were reported ND at dilution for Nitrite, due to interference with Chloride in the undiluted runs. The reporting limit has been adjusted only for those targets reported from the dilution run.

The samples were received in hold on 8/13/11 for IC analysis, but were re-run out of 48 hour hold for Nitrite in batch 1227060 on 8/15/11, due to a failed bracketing CCV in the 8/13/11 in-hold run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (2): A02MW060001
F1H130407 (3): A02MW100001
F1H130407 (4): A02MW070001
F1H130407 (5): A04BMW9003

Chloride (MCAWW 300.0A)

Batch: 1227179
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for chloride are attributed to matrix interference.

The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (2): A02MW060001
F1H130407 (3): A02MW100001
F1H130407 (4): A02MW070001
F1H130407 (5): A04BMW9003

Fluoride (MCAWW 300.0A)

Batch: 1225019
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (2): A02MW060001
F1H130407 (5): A04BMW9003

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1225022
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (2): A02MW060001
F1H130407 (3): A02MW100001
F1H130407 (4): A02MW070001
F1H130407 (5): A04BMW9003

Sulfate (MCAWW 300.0A)

Batch: 1230226
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (2): A02MW060001
F1H130407 (3): A02MW100001
F1H130407 (4): A02MW070001
F1H130407 (5): A04BMW9003

Total Dissolvee Solids (MCAWW 160.1)
The samples were analyzed at a dilution based on high concentrations of target analytes. The reporting limit has been adjusted accordingly.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (5): A04BMW9003

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)
There was insufficient sample provided to perform the sample duplicate, an LCS duplicate was used instead.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (2): A02MW060001
F1H130407 (3): A02MW100001
F1H130407 (4): A02MW070001
F1H130407 (5): A04BMW9003
F1H130407 (6): A04BMW250001 DISSOLVED
F1H130407 (7): A02MW060001 DISSOLVED
F1H130407 (8): A02MW100001 DISSOLVED
F1H130407 (9): A02MW070001 DISSOLVED
F1H130407 (10): A04BMW9003 DISSOLVED

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H130407

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H130407

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLL89	001	A04BMW250001	08/12/11	08:45
MLL9A	002	A02MW060001	08/12/11	10:00
MLL9C	003	A02MW100001	08/12/11	10:55
MLL9D	004	A02MW070001	08/12/11	11:35
MLL9E	005	A04BMW9003	08/12/11	
MLL9F	006	A04BMW250001 DISSOLVED	08/12/11	08:45
MLL9G	007	A02MW060001 DISSOLVED	08/12/11	10:00
MLL9H	008	A02MW100001 DISSOLVED	08/12/11	10:55
MLL9J	009	A02MW070001 DISSOLVED	08/12/11	11:35
MLL9K	010	A04BMW9003 DISSOLVED	08/12/11	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001

GC/MS Volatiles

Lot-Sample #...: F1H130407-001 **Work Order #...:** MLL893AC **Matrix.....:** WATER
Date Sampled...: 08/12/11 08:45 **Date Received..:** 08/13/11
Prep Date.....: 08/18/11 **Analysis Date..:** 08/18/11
Prep Batch #...: 1230199 **Analysis Time..:** 14:14
Dilution Factor: 5
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	25	ug/L
Acetone	ND	10	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Carbon disulfide	ND	10	ug/L
Carbon tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	10	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chloroethane	**17 D**	**10**	**ug/L**
Chloroform	ND	5.0	ug/L
1,2-Dichlorobenzene	ND	5.0	ug/L
1,3-Dichlorobenzene	ND	5.0	ug/L
1,4-Dichlorobenzene	ND	5.0	ug/L
1,1-Dichloroethane	**190 D**	**5.0**	**ug/L**
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	**44 D**	**5.0**	**ug/L**
1,2-Dichloropropane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	5.0	ug/L
2-Hexanone	ND	25	ug/L
Methylene chloride	ND D	5.0	ug/L
4-Methyl-2-pentanone	ND	25	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	**3.4 J,D**	**5.0**	**ug/L**
Toluene	**1.3 J,D**	**5.0**	**ug/L**
1,1,2-Trichloroethane	**1.3 J,D**	**5.0**	**ug/L**
Trichloroethene	**150 D**	**5.0**	**ug/L**
Xylenes (total)	ND	25	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	101	(85 - 120)
Dibromofluoromethane	117 *	(85 - 115)
1,2-Dichloroethane-d4	105	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001

GC/MS Volatiles

Lot-Sample #...: F1H130407-001 Work Order #...: MLL893AC Matrix.....: WATER

NOTE(S):

* Surrogate recovery is outside stated control limits.

D Result was obtained from the analysis of a dilution.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001

GC/MS Volatiles

Lot-Sample #...: F1H130407-001 Work Order #...: MLL894AC Matrix.....: WATER
Date Sampled...: 08/12/11 08:45 Date Received..: 08/13/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 07:34
Dilution Factor: 50
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethane	190 D	50	ug/L
1,2-Dichloroethene (total)	1600 D	100	ug/L
Vinyl chloride	770 D	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001

TOTAL Metals

Lot-Sample #...: F1H130407-001 **Matrix.....:** WATER
Date Sampled...: 08/12/11 08:45 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**175**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL891A5**
		Dilution Factor: 1		Analysis Time..: 19:45		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AF
		Dilution Factor: 1		Analysis Time..: 11:56		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL891AG
		Dilution Factor: 1		Analysis Time..: 11:56		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AE
		Dilution Factor: 1		Analysis Time..: 11:56		
Barium	**109**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891AH**
		Dilution Factor: 1		Analysis Time..: 11:56		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AJ
		Dilution Factor: 1		Analysis Time..: 11:56		
Calcium	**146000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891AK**
		Dilution Factor: 1		Analysis Time..: 11:56		
Cadmium	**1.7 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891AL**
		Dilution Factor: 1		Analysis Time..: 11:56		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AM
		Dilution Factor: 1		Analysis Time..: 11:56		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AN
		Dilution Factor: 1		Analysis Time..: 11:56		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AP
		Dilution Factor: 1		Analysis Time..: 11:56		
Iron	**61.6 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891AQ**
		Dilution Factor: 1		Analysis Time..: 11:56		
Magnesium	**47800**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891AR**
		Dilution Factor: 1		Analysis Time..: 11:56		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001

TOTAL Metals

Lot-Sample #...: F1H130407-001 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**863**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891AT**
		Dilution Factor: 1		Analysis Time..: 11:56		
Sodium	**888000 B**	**20000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL891AU**
		Dilution Factor: 20		Analysis Time..: 14:44		
Nickel	**103**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891AV**
		Dilution Factor: 1		Analysis Time..: 11:56		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AW
		Dilution Factor: 1		Analysis Time..: 11:56		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AX
		Dilution Factor: 1		Analysis Time..: 11:56		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891A0
		Dilution Factor: 1		Analysis Time..: 11:56		
Strontium	**892 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891A1**
		Dilution Factor: 1		Analysis Time..: 11:56		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891A2
		Dilution Factor: 1		Analysis Time..: 11:56		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891A3
		Dilution Factor: 1		Analysis Time..: 11:56		
Zinc	**192**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891A4**
		Dilution Factor: 1		Analysis Time..: 11:56		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001

General Chemistry

Lot-Sample #...: F1H130407-001 Work Order #...: MLL89 Matrix.....: WATER
Date Sampled...: 08/12/11 08:45 Date Received..: 08/13/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	1490	100	mg/L	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 500		Analysis Time..: 04:03		
Fluoride	2.1	1.0	mg/L	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 10		Analysis Time..: 03:34		
Nitrate	0.090	0.020	mg/L	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1		Analysis Time..: 03:19		
Nitrite	ND	1.0	mg/L	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 50		Analysis Time..: 05:50		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1		Analysis Time..: 03:19		
Sulfate	82.9	5.0	mg/L	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 10		Analysis Time..: 07:53		
Total Alkalinity	255	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	3170	100	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 10		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW060001

TOTAL Metals

Lot-Sample #...: F1H130407-002 **Matrix.....:** WATER
Date Sampled...: 08/12/11 10:00 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**3.6**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9A1A4**
		Dilution Factor: 1		Analysis Time..: 19:52		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AE
		Dilution Factor: 1		Analysis Time..: 12:02		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AF
		Dilution Factor: 1		Analysis Time..: 12:02		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AD
		Dilution Factor: 1		Analysis Time..: 12:02		
Barium	**23.3 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9A1AG**
		Dilution Factor: 1		Analysis Time..: 12:02		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AH
		Dilution Factor: 1		Analysis Time..: 12:02		
Calcium	**116000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9A1AJ**
		Dilution Factor: 1		Analysis Time..: 12:02		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AK
		Dilution Factor: 1		Analysis Time..: 12:02		
Cobalt	**4.4 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9A1AL**
		Dilution Factor: 1		Analysis Time..: 12:02		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AM
		Dilution Factor: 1		Analysis Time..: 12:02		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AN
		Dilution Factor: 1		Analysis Time..: 12:02		
Iron	**53.6 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9A1AP**
		Dilution Factor: 1		Analysis Time..: 12:02		
Magnesium	**47200**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9A1AQ**
		Dilution Factor: 1		Analysis Time..: 12:02		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW060001

TOTAL Metals

Lot-Sample #...: F1H130407-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	673	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AR
		Dilution Factor: 1		Analysis Time..: 12:02		
Sodium	16900 B	5000	ug/L	SW846 6010C	08/15-08/19/11	MLL9A1AT
		Dilution Factor: 5		Analysis Time..: 14:50		
Nickel	259	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AU
		Dilution Factor: 1		Analysis Time..: 12:02		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AV
		Dilution Factor: 1		Analysis Time..: 12:02		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AW
		Dilution Factor: 1		Analysis Time..: 12:02		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AX
		Dilution Factor: 1		Analysis Time..: 12:02		
Strontium	347 B	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1A0
		Dilution Factor: 1		Analysis Time..: 12:02		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1A1
		Dilution Factor: 1		Analysis Time..: 12:02		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1A2
		Dilution Factor: 1		Analysis Time..: 12:02		
Zinc	425	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1A3
		Dilution Factor: 1		Analysis Time..: 12:02		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW060001

General Chemistry

Lot-Sample #...: F1H130407-002 Work Order #...: MLL9A Matrix.....: WATER
Date Sampled...: 08/12/11 10:00 Date Received..: 08/13/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	31.2	2.0	mg/L	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 10		Analysis Time..: 07:10		
Fluoride	2.9	0.50	mg/L	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 5		Analysis Time..: 06:56		
Nitrate	0.056	0.020	mg/L	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1		Analysis Time..: 06:41		
Nitrite	ND	0.040	mg/L	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 2		Analysis Time..: 06:30		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1		Analysis Time..: 06:41		
Sulfate	115	5.0	mg/L	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 10		Analysis Time..: 08:33		
Total Alkalinity	358	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	641	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW100001

TOTAL Metals

Lot-Sample #...: F1H130407-003 **Matrix.....:** WATER
Date Sampled...: 08/12/11 10:55 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**1.6**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9C1A4**
		Dilution Factor: 1		Analysis Time..: 19:59		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AE
		Dilution Factor: 1		Analysis Time..: 12:09		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AF
		Dilution Factor: 1		Analysis Time..: 12:09		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AD
		Dilution Factor: 1		Analysis Time..: 12:09		
Barium	**52.0**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1AG**
		Dilution Factor: 1		Analysis Time..: 12:09		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AH
		Dilution Factor: 1		Analysis Time..: 12:09		
Calcium	**124000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1AJ**
		Dilution Factor: 1		Analysis Time..: 12:09		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AK
		Dilution Factor: 1		Analysis Time..: 12:09		
Cobalt	**13.9 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1AL**
		Dilution Factor: 1		Analysis Time..: 12:09		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AM
		Dilution Factor: 1		Analysis Time..: 12:09		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AN
		Dilution Factor: 1		Analysis Time..: 12:09		
Iron	**3710**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1AP**
		Dilution Factor: 1		Analysis Time..: 12:09		
Magnesium	**25800**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1AQ**
		Dilution Factor: 1		Analysis Time..: 12:09		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW100001

TOTAL Metals

Lot-Sample #...: F1H130407-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**955**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1AR**
		Dilution Factor: 1		Analysis Time..: 12:09		
Sodium	**7070 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9C1AT**
		Dilution Factor: 5		Analysis Time..: 14:56		
Nickel	**566**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1AU**
		Dilution Factor: 1		Analysis Time..: 12:09		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AV
		Dilution Factor: 1		Analysis Time..: 12:09		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AW
		Dilution Factor: 1		Analysis Time..: 12:09		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AX
		Dilution Factor: 1		Analysis Time..: 12:09		
Strontium	**475 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1A0**
		Dilution Factor: 1		Analysis Time..: 12:09		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1A1
		Dilution Factor: 1		Analysis Time..: 12:09		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1A2
		Dilution Factor: 1		Analysis Time..: 12:09		
Zinc	**207**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1A3**
		Dilution Factor: 1		Analysis Time..: 12:09		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW100001

General Chemistry

Lot-Sample #...: F1H130407-003 Work Order #...: MLL9C Matrix.....: WATER
Date Sampled...: 08/12/11 10:55 Date Received..: 08/13/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	25.6	2.0	mg/L	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 10		Analysis Time..: 08:08		
Fluoride	1.4	0.10	mg/L	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 1		Analysis Time..: 07:39		
Nitrate	0.030	0.020	mg/L	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1		Analysis Time..: 07:39		
Nitrite	ND	0.040	mg/L	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 2		Analysis Time..: 06:44		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1		Analysis Time..: 07:39		
Sulfate	90.2	2.5	mg/L	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 5		Analysis Time..: 08:47		
Total Alkalinity	316	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	529	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW070001

TOTAL Metals

Lot-Sample #...: F1H130407-004 **Matrix.....:** WATER
Date Sampled...: 08/12/11 11:35 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**33.4**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9D1AF**
		Dilution Factor: 1		Analysis Time..: 20:05		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1AQ
		Dilution Factor: 1		Analysis Time..: 12:15		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1AR
		Dilution Factor: 1		Analysis Time..: 12:15		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1AP
		Dilution Factor: 1		Analysis Time..: 12:15		
Barium	**97.3**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1AT**
		Dilution Factor: 1		Analysis Time..: 12:15		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1AU
		Dilution Factor: 1		Analysis Time..: 12:15		
Calcium	**92000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1AV**
		Dilution Factor: 1		Analysis Time..: 12:15		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1AW
		Dilution Factor: 1		Analysis Time..: 12:15		
Cobalt	**7.0 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1AX**
		Dilution Factor: 1		Analysis Time..: 12:15		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1A0
		Dilution Factor: 1		Analysis Time..: 12:15		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1A1
		Dilution Factor: 1		Analysis Time..: 12:15		
Iron	**2880**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1A2**
		Dilution Factor: 1		Analysis Time..: 12:15		
Magnesium	**27300**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1A3**
		Dilution Factor: 1		Analysis Time..: 12:15		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW070001

TOTAL Metals

Lot-Sample #...: F1H130407-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**387**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1A4**
		Dilution Factor: 1		Analysis Time..: 12:15		
Sodium	**49400 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9D1A5**
		Dilution Factor: 5		Analysis Time..: 15:03		
Nickel	**237**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1A6**
		Dilution Factor: 1		Analysis Time..: 12:15		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1A7
		Dilution Factor: 1		Analysis Time..: 12:15		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1A8
		Dilution Factor: 1		Analysis Time..: 12:15		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1A9
		Dilution Factor: 1		Analysis Time..: 12:15		
Strontium	**325 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1AA**
		Dilution Factor: 1		Analysis Time..: 12:15		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1AC
		Dilution Factor: 1		Analysis Time..: 12:15		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1AD
		Dilution Factor: 1		Analysis Time..: 12:15		
Zinc	**35.3**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1AE**
		Dilution Factor: 1		Analysis Time..: 12:15		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW070001

General Chemistry

Lot-Sample #...: F1H130407-004 Work Order #...: MLL9D Matrix.....: WATER
Date Sampled...: 08/12/11 11:35 Date Received..: 08/13/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	45.8	20.0	mg/L	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 100		Analysis Time..: 09:49		
Fluoride	2.3	0.10	mg/L	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 1		Analysis Time..: 09:05		
Nitrate	0.013 B	0.020	mg/L	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1		Analysis Time..: 09:05		
Nitrite	ND	0.040	mg/L	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 2		Analysis Time..: 06:57		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1		Analysis Time..: 09:05		
Sulfate	82.2	2.5	mg/L	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 5		Analysis Time..: 09:00		
Total Alkalinity	301	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	495	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003

GC/MS Volatiles

Lot-Sample #...: F1H130407-005 Work Order #...: MLL9E3AN Matrix.....: WATER
Date Sampled...: 08/12/11 Date Received..: 08/13/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 14:41
Dilution Factor: 5

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	25	ug/L
Acetone	ND	10	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Carbon disulfide	ND	10	ug/L
Carbon tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	10	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chloroethane	**17 D**	**10**	**ug/L**
Chloroform	ND	5.0	ug/L
1,2-Dichlorobenzene	ND	5.0	ug/L
1,3-Dichlorobenzene	ND	5.0	ug/L
1,4-Dichlorobenzene	ND	5.0	ug/L
1,1-Dichloroethane	**190 D**	**5.0**	**ug/L**
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	**40 D**	**5.0**	**ug/L**
1,2-Dichloropropane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	5.0	ug/L
2-Hexanone	ND	25	ug/L
Methylene chloride	**2.4 J,D**	**5.0**	**ug/L**
4-Methyl-2-pentanone	ND	25	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	**3.4 J,D**	**5.0**	**ug/L**
Toluene	**1.6 J,D**	**5.0**	**ug/L**
1,1,2-Trichloroethane	**1.6 J,D**	**5.0**	**ug/L**
Trichloroethene	**160 D**	**5.0**	**ug/L**
Xylenes (total)	ND	25	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	117 *	(85 - 115)
1,2-Dichloroethane-d4	110	(70 - 120)
4-Bromofluorobenzene	106	(75 - 120)

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003

GC/MS Volatiles

Lot-Sample #...: F1H130407-005 Work Order #...: MLL9E3AN Matrix.....: WATER

NOTE(S):

* Surrogate recovery is outside stated control limits.

D Result was obtained from the analysis of a dilution.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003

GC/MS Volatiles

Lot-Sample #...: F1H130407-005 Work Order #...: MLL9E4AN Matrix.....: WATER
Date Sampled...: 08/12/11 Date Received..: 08/13/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 15:07
Dilution Factor: 50
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,2-Dichloroethene (total)	1600 D	100	ug/L
1,1,1-Trichloroethane	600 D	50	ug/L
Vinyl chloride	680 D	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
1,2-Dichloroethane-d4	102	(70 - 120)
4-Bromofluorobenzene	103	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003

TOTAL Metals

Lot-Sample #...: F1H130407-005 **Matrix.....:** WATER
Date Sampled...: 08/12/11 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**176**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9E1AG**
		Dilution Factor: 1		Analysis Time..: 20:25		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1AR
		Dilution Factor: 1		Analysis Time..: 12:35		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1AT
		Dilution Factor: 1		Analysis Time..: 12:35		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1AQ
		Dilution Factor: 1		Analysis Time..: 12:35		
Barium	**110**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1AU**
		Dilution Factor: 1		Analysis Time..: 12:35		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1AV
		Dilution Factor: 1		Analysis Time..: 12:35		
Calcium	**145000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1AW**
		Dilution Factor: 1		Analysis Time..: 12:35		
Cadmium	**1.6 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1AX**
		Dilution Factor: 1		Analysis Time..: 12:35		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1A0
		Dilution Factor: 1		Analysis Time..: 12:35		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1A1
		Dilution Factor: 1		Analysis Time..: 12:35		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1A2
		Dilution Factor: 1		Analysis Time..: 12:35		
Iron	**54.3 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1A3**
		Dilution Factor: 1		Analysis Time..: 12:35		
Magnesium	**47100**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1A4**
		Dilution Factor: 1		Analysis Time..: 12:35		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003

TOTAL Metals

Lot-Sample #...: F1H130407-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**856**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1A5**
		Dilution Factor: 1		Analysis Time..: 12:35		
Sodium	**885000 B**	**20000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9E1A6**
		Dilution Factor: 20		Analysis Time..: 15:22		
Nickel	**103**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1A7**
		Dilution Factor: 1		Analysis Time..: 12:35		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1A8
		Dilution Factor: 1		Analysis Time..: 12:35		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1A9
		Dilution Factor: 1		Analysis Time..: 12:35		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1AA
		Dilution Factor: 1		Analysis Time..: 12:35		
Strontium	**892 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1AC**
		Dilution Factor: 1		Analysis Time..: 12:35		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1AD
		Dilution Factor: 1		Analysis Time..: 12:35		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1AE
		Dilution Factor: 1		Analysis Time..: 12:35		
Zinc	**193**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1AF**
		Dilution Factor: 1		Analysis Time..: 12:35		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003

General Chemistry

Lot-Sample #...: F1H130407-005 Work Order #...: MLL9E Matrix.....: WATER
Date Sampled...: 08/12/11 Date Received..: 08/13/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	1490	100	mg/L	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 500		Analysis Time..: 10:46		
Fluoride	2.0	1.0	mg/L	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 10		Analysis Time..: 10:18		
Nitrate	0.087	0.020	mg/L	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1		Analysis Time..: 10:03		
Nitrite	ND	1.0	mg/L	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 50		Analysis Time..: 07:11		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1		Analysis Time..: 10:03		
Sulfate	83.6	5.0	mg/L	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 10		Analysis Time..: 09:13		
Total Alkalinity	254	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	3020	100	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 10		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-006 **Matrix.....:** WATER
Date Sampled...: 08/12/11 08:45 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	171	1.0	ug/L	SW846 6020A	08/15-08/17/11	MLL9F1A2
		Dilution Factor: 1		Analysis Time..: 20:32		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AC
		Dilution Factor: 1		Analysis Time..: 12:41		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AD
		Dilution Factor: 1		Analysis Time..: 12:41		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AA
		Dilution Factor: 1		Analysis Time..: 12:41		
Barium	**108**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AE**
		Dilution Factor: 1		Analysis Time..: 12:41		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AF
		Dilution Factor: 1		Analysis Time..: 12:41		
Calcium	**146000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AG**
		Dilution Factor: 1		Analysis Time..: 12:41		
Cadmium	**1.5 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AH**
		Dilution Factor: 1		Analysis Time..: 12:41		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AJ
		Dilution Factor: 1		Analysis Time..: 12:41		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AK
		Dilution Factor: 1		Analysis Time..: 12:41		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AL
		Dilution Factor: 1		Analysis Time..: 12:41		
Iron	**72.9 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AM**
		Dilution Factor: 1		Analysis Time..: 12:41		
Magnesium	**48300**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AN**
		Dilution Factor: 1		Analysis Time..: 12:41		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**865**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AP**
		Dilution Factor: 1		Analysis Time..: 12:41		
Sodium	**836000 B**	**20000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9F1AQ**
		Dilution Factor: 20		Analysis Time..: 15:28		
Nickel	**103**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AR**
		Dilution Factor: 1		Analysis Time..: 12:41		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AT
		Dilution Factor: 1		Analysis Time..: 12:41		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AU
		Dilution Factor: 1		Analysis Time..: 12:41		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AV
		Dilution Factor: 1		Analysis Time..: 12:41		
Strontium	**868 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AW**
		Dilution Factor: 1		Analysis Time..: 12:41		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AX
		Dilution Factor: 1		Analysis Time..: 12:41		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1A0
		Dilution Factor: 1		Analysis Time..: 12:41		
Zinc	**196**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1A1**
		Dilution Factor: 1		Analysis Time..: 12:41		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW060001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-007 **Matrix.....:** WATER
Date Sampled...: 08/12/11 10:00 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**3.6**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9G1AD**
		Dilution Factor: 1		Analysis Time..: 20:39		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AG
		Dilution Factor: 1		Analysis Time..: 12:47		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AH
		Dilution Factor: 1		Analysis Time..: 12:47		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AF
		Dilution Factor: 1		Analysis Time..: 12:47		
Barium	**19.2 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9G1AJ**
		Dilution Factor: 1		Analysis Time..: 12:47		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AK
		Dilution Factor: 1		Analysis Time..: 12:47		
Calcium	**114000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9G1AL**
		Dilution Factor: 1		Analysis Time..: 12:47		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AM
		Dilution Factor: 1		Analysis Time..: 12:47		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AN
		Dilution Factor: 1		Analysis Time..: 12:47		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AP
		Dilution Factor: 1		Analysis Time..: 12:47		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AQ
		Dilution Factor: 1		Analysis Time..: 12:47		
Iron	ND	100	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AR
		Dilution Factor: 1		Analysis Time..: 12:47		
Magnesium	**46500**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9G1AT**
		Dilution Factor: 1		Analysis Time..: 12:47		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW060001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**305**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9G1AU**
		Dilution Factor: 1		Analysis Time..: 12:47		
Sodium	**17400 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9G1AV**
		Dilution Factor: 5		Analysis Time..: 15:35		
Nickel	**223**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9G1AW**
		Dilution Factor: 1		Analysis Time..: 12:47		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AX
		Dilution Factor: 1		Analysis Time..: 12:47		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1A0
		Dilution Factor: 1		Analysis Time..: 12:47		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1A1
		Dilution Factor: 1		Analysis Time..: 12:47		
Strontium	**338 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9G1A2**
		Dilution Factor: 1		Analysis Time..: 12:47		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1A3
		Dilution Factor: 1		Analysis Time..: 12:47		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AA
		Dilution Factor: 1		Analysis Time..: 12:47		
Zinc	**382**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9G1AC**
		Dilution Factor: 1		Analysis Time..: 12:47		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW100001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-008 Matrix.....: WATER
Date Sampled...: 08/12/11 10:55 Date Received..: 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**1.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9H1AH**
		Dilution Factor: 1		Analysis Time..: 20:45		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AL
		Dilution Factor: 1		Analysis Time..: 12:54		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AM
		Dilution Factor: 1		Analysis Time..: 12:54		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AK
		Dilution Factor: 1		Analysis Time..: 12:54		
Barium	**54.6**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1AN**
		Dilution Factor: 1		Analysis Time..: 12:54		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AP
		Dilution Factor: 1		Analysis Time..: 12:54		
Calcium	**128000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1AQ**
		Dilution Factor: 1		Analysis Time..: 12:54		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AR
		Dilution Factor: 1		Analysis Time..: 12:54		
Cobalt	**14.6 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1AT**
		Dilution Factor: 1		Analysis Time..: 12:54		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AU
		Dilution Factor: 1		Analysis Time..: 12:54		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AV
		Dilution Factor: 1		Analysis Time..: 12:54		
Iron	**3600**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1AW**
		Dilution Factor: 1		Analysis Time..: 12:54		
Magnesium	**27200**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1AX**
		Dilution Factor: 1		Analysis Time..: 12:54		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW100001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**998**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1A0**
		Dilution Factor: 1		Analysis Time..: 12:54		
Sodium	**7270 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9H1A1**
		Dilution Factor: 5		Analysis Time..: 15:41		
Nickel	**577**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1A2**
		Dilution Factor: 1		Analysis Time..: 12:54		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1A3
		Dilution Factor: 1		Analysis Time..: 12:54		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AA
		Dilution Factor: 1		Analysis Time..: 12:54		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AC
		Dilution Factor: 1		Analysis Time..: 12:54		
Strontium	**479 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1AD**
		Dilution Factor: 1		Analysis Time..: 12:54		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AE
		Dilution Factor: 1		Analysis Time..: 12:54		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AF
		Dilution Factor: 1		Analysis Time..: 12:54		
Zinc	**208**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1AG**
		Dilution Factor: 1		Analysis Time..: 12:54		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW070001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-009 **Matrix.....:** WATER
Date Sampled...: 08/12/11 11:35 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**32.4**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9J1AM**
		Dilution Factor: 1		Analysis Time..: 20:52		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AQ
		Dilution Factor: 1		Analysis Time..: 13:00		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AR
		Dilution Factor: 1		Analysis Time..: 13:00		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AP
		Dilution Factor: 1		Analysis Time..: 13:00		
Barium	**100**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1AT**
		Dilution Factor: 1		Analysis Time..: 13:00		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AU
		Dilution Factor: 1		Analysis Time..: 13:00		
Calcium	**96300**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1AV**
		Dilution Factor: 1		Analysis Time..: 13:00		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AW
		Dilution Factor: 1		Analysis Time..: 13:00		
Cobalt	**7.1 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1AX**
		Dilution Factor: 1		Analysis Time..: 13:00		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1A0
		Dilution Factor: 1		Analysis Time..: 13:00		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1A1
		Dilution Factor: 1		Analysis Time..: 13:00		
Iron	**1080**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1A2**
		Dilution Factor: 1		Analysis Time..: 13:00		
Magnesium	**28600**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1A3**
		Dilution Factor: 1		Analysis Time..: 13:00		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW070001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**379**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1AA**
		Dilution Factor: 1		Analysis Time..: 13:00		
Sodium	**49700 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9J1AC**
		Dilution Factor: 5		Analysis Time..: 15:48		
Nickel	**238**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1AD**
		Dilution Factor: 1		Analysis Time..: 13:00		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AE
		Dilution Factor: 1		Analysis Time..: 13:00		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AF
		Dilution Factor: 1		Analysis Time..: 13:00		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AG
		Dilution Factor: 1		Analysis Time..: 13:00		
Strontium	**340 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1AH**
		Dilution Factor: 1		Analysis Time..: 13:00		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AJ
		Dilution Factor: 1		Analysis Time..: 13:00		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AK
		Dilution Factor: 1		Analysis Time..: 13:00		
Zinc	**22.0**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1AL**
		Dilution Factor: 1		Analysis Time..: 13:00		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-010 Matrix.....: WATER
Date Sampled...: 08/12/11 Date Received..: 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**174**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9K1AM**
		Dilution Factor: 1		Analysis Time..: 20:59		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AQ
		Dilution Factor: 1		Analysis Time..: 13:07		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AR
		Dilution Factor: 1		Analysis Time..: 13:07		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AP
		Dilution Factor: 1		Analysis Time..: 13:07		
Barium	**105**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1AT**
		Dilution Factor: 1		Analysis Time..: 13:07		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AU
		Dilution Factor: 1		Analysis Time..: 13:07		
Calcium	**143000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1AV**
		Dilution Factor: 1		Analysis Time..: 13:07		
Cadmium	**1.5 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1AW**
		Dilution Factor: 1		Analysis Time..: 13:07		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AX
		Dilution Factor: 1		Analysis Time..: 13:07		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1A0
		Dilution Factor: 1		Analysis Time..: 13:07		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1A1
		Dilution Factor: 1		Analysis Time..: 13:07		
Iron	**58.6 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1A2**
		Dilution Factor: 1		Analysis Time..: 13:07		
Magnesium	**47300**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1A3**
		Dilution Factor: 1		Analysis Time..: 13:07		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-010 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**846**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1AA**
		Dilution Factor: 1		Analysis Time..: 13:07		
Sodium	**854000 B**	**20000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9K1AC**
		Dilution Factor: 20		Analysis Time..: 15:54		
Nickel	**101**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1AD**
		Dilution Factor: 1		Analysis Time..: 13:07		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AE
		Dilution Factor: 1		Analysis Time..: 13:07		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AF
		Dilution Factor: 1		Analysis Time..: 13:07		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AG
		Dilution Factor: 1		Analysis Time..: 13:07		
Strontium	**841 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1AH**
		Dilution Factor: 1		Analysis Time..: 13:07		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AJ
		Dilution Factor: 1		Analysis Time..: 13:07		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AK
		Dilution Factor: 1		Analysis Time..: 13:07		
Zinc	**190**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1AL**
		Dilution Factor: 1		Analysis Time..: 13:07		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 **Work Order #...:** MLTVV1AA **Matrix.....:** WATER
MB Lot-Sample #: F1H180000-199

Prep Date.....: 08/18/11 **Analysis Time..:** 11:50
Analysis Date..: 08/18/11 **Prep Batch #...:** 1230199
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	107	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 Work Order #...: MLTVV1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	106	(70 - 120)		
4-Bromofluorobenzene	100	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 Work Order #...: MLTXM1AA Matrix.....: WATER
MB Lot-Sample #: F1H190000-041

Prep Date.....: 08/19/11 Analysis Time..: 05:48
Analysis Date..: 08/19/11 Prep Batch #...: 1231041
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	103	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H150000-138 **Prep Batch #...:** 1227138						
Uranium	ND	1.0	ug/L	SW846 6020A	08/15-08/17/11	MLM771AA
		Dilution Factor: 1				
		Analysis Time..: 17:46				
MB Lot-Sample #: F1H150000-139 **Prep Batch #...:** 1227139						
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLM781A4
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CK
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A2
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Barium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A5
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Beryllium	**0.87 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLM781A6**
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A8
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Calcium	ND	1000	ug/L	SW846 6010C	08/15-08/20/11	MLM781A7
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CA
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A9
		Dilution Factor: 1				
		Analysis Time..: 10:00				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CC
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Iron	ND	100	ug/L	SW846 6010C	08/15-08/20/11	MLM781CD
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CJ
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Magnesium	ND	1000	ug/L	SW846 6010C	08/15-08/20/11	MLM781CE
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Manganese	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CF
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CH
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CL
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A3
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Sodium	**399 J**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLM781CG**
		Dilution Factor: 1				
		Analysis Time..: 12:49				
Strontium	**0.80 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLM781CM**
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CN
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CP
		Dilution Factor: 1				
		Analysis Time..: 10:00				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CQ

Dilution Factor: 1
Analysis Time..: 10:00

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H130407 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLTJ01AA		MB Lot-Sample #:	F1H130000-018	
	ND	0.20	mg/L	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 1				
		Analysis Time..: 03:05				
Fluoride		Work Order #: MLTJ11AA		MB Lot-Sample #:	F1H130000-019	
	ND	0.10	mg/L	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 1				
		Analysis Time..: 03:05				
Nitrate		Work Order #: MLTJ21AA		MB Lot-Sample #:	F1H130000-020	
	ND	0.020	mg/L	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1				
		Analysis Time..: 03:05				
Nitrite		Work Order #: MLQD41AA		MB Lot-Sample #:	F1H150000-060	
	ND	0.020	mg/L	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 1				
		Analysis Time..: 05:37				
Phosphate as P, Ortho		Work Order #: MLTJ41AA		MB Lot-Sample #:	F1H130000-022	
	ND	0.50	mg/L	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1				
		Analysis Time..: 03:05				
Sulfate		Work Order #: MLVDK1AA		MB Lot-Sample #:	F1H180000-226	
	ND	0.50	mg/L	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 1				
		Analysis Time..: 04:45				
Total Alkalinity		Work Order #: MLWW41AC		MB Lot-Sample #:	F1H220000-085	
	ND	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLQ6P1AA		MB Lot-Sample #:	F1H170000-114	
	ND	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 Work Order #...: MLTVV1AC Matrix.....: WATER
LCS Lot-Sample#: F1H180000-199
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 10:30
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichloroethane	97	(70 - 130)	SW846 8260B
Benzene	95	(80 - 120)	SW846 8260B
Trichloroethene	90	(70 - 125)	SW846 8260B
1,2-Dichloropropane	91	(75 - 125)	SW846 8260B
Bromodichloromethane	98	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	98	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	107	(55 - 140)	SW846 8260B
Toluene	103	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	102	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	96	(75 - 125)	SW846 8260B
2-Hexanone	95	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	103	(60 - 135)	SW846 8260B
Chlorobenzene	96	(80 - 120)	SW846 8260B
Bromoform	108	(70 - 130)	SW846 8260B
Ethylbenzene	101	(75 - 125)	SW846 8260B
Styrene	109	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	93	(65 - 130)	SW846 8260B
Tetrachloroethene	101	(45 - 150)	SW846 8260B
1,2-Dichlorobenzene	100	(70 - 120)	SW846 8260B
cis-1,3-Dichloropropene	104	(70 - 130)	SW846 8260B
Dibromochloromethane	104	(60 - 135)	SW846 8260B
Vinyl chloride	87	(50 - 145)	SW846 8260B
Bromomethane	99	(30 - 145)	SW846 8260B
Chloroethane	90	(60 - 135)	SW846 8260B
Acetone	93	(40 - 140)	SW846 8260B
1,1-Dichloroethene	95	(70 - 130)	SW846 8260B
Methylene chloride	88	(55 - 140)	SW846 8260B
Carbon disulfide	84	(35 - 160)	SW846 8260B
1,1-Dichloroethane	93	(70 - 135)	SW846 8260B
2-Butanone	88	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	96	(85 - 115)	SW846 8260B
Chloroform	93	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	99	(65 - 130)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 Work Order #...: MLTVV1AC Matrix.....: WATER
LCS Lot-Sample#: F1H180000-199

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Carbon tetrachloride	**99**	**(65 - 140)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	101	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control paramcters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 Work Order #...: MLTXM1AC Matrix.....: WATER
LCS Lot-Sample#: F1H190000-041
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 04:55
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Vinyl chloride	**83**	**(50 - 145)**	**SW846 8260B**
1,1-Dichloroethane	**94**	**(70 - 135)**	**SW846 8260B**
1,2-Dichloroethene (total)	**97**	**(85 - 115)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H150000-138 **Prep Batch #...:** 1227138					
Uranium	105	(80 - 120)	SW846 6020A	08/15-08/17/11	MLM771AC
		Dilution Factor: 1		Analysis Time..: 17:52	
LCS Lot-Sample#: F1H150000-139 **Prep Batch #...:** 1227139					
Arsenic	106	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AA
		Dilution Factor: 1		Analysis Time..: 10:06	
Silver	95	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AC
		Dilution Factor: 1		Analysis Time..: 10:06	
Aluminum	104	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AD
		Dilution Factor: 1		Analysis Time..: 10:06	
Barium	103	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AE
		Dilution Factor: 1		Analysis Time..: 10:06	
Beryllium	108	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AF
		Dilution Factor: 1		Analysis Time..: 10:06	
Calcium	106	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AG
		Dilution Factor: 1		Analysis Time..: 10:06	
Cadmium	107	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AH
		Dilution Factor: 1		Analysis Time..: 10:06	
Cobalt	101	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AJ
		Dilution Factor: 1		Analysis Time..: 10:06	
Chromium	100	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AK
		Dilution Factor: 1		Analysis Time..: 10:06	
Copper	99	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AL
		Dilution Factor: 1		Analysis Time..: 10:06	
Iron	104	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AM
		Dilution Factor: 1		Analysis Time..: 10:06	
Magnesium	102	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AN
		Dilution Factor: 1		Analysis Time..: 10:06	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	103	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AP
		Dilution Factor: 1	Analysis Time..: 10:06		
Sodium	108	(80 - 120)	SW846 6010C	08/15-08/19/11	MLM781AQ
		Dilution Factor: 1	Analysis Time..: 12:55		
Nickel	104	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AR
		Dilution Factor: 1	Analysis Time..: 10:06		
Lead	103	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AT
		Dilution Factor: 1	Analysis Time..: 10:06		
Antimony	105	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AU
		Dilution Factor: 1	Analysis Time..: 10:06		
Selenium	110	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AV
		Dilution Factor: 1	Analysis Time..: 10:06		
Strontium	113	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AW
		Dilution Factor: 1	Analysis Time..: 10:06		
Thallium	101	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AX
		Dilution Factor: 1	Analysis Time..: 10:06		
Vanadium	100	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781A0
		Dilution Factor: 1	Analysis Time..: 10:06		
Zinc	115	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781A1
		Dilution Factor: 1	Analysis Time..: 10:06		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H130407 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLTJ01AC LCS Lot-Sample#: F1H130000-018			
	92	(90 - 110)	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 1	Analysis Time..: 02:51		
Fluoride		Work Order #: MLTJ11AC LCS Lot-Sample#: F1H130000-019			
	96	(90 - 110)	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 1	Analysis Time..: 02:51		
Nitrate		Work Order #: MLTJ21AC LCS Lot-Sample#: F1H130000-020			
	94	(90 - 110)	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1	Analysis Time..: 02:51		
Nitrite		Work Order #: MLQD41AC LCS Lot-Sample#: F1H150000-060			
	96	(90 - 110)	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 1	Analysis Time..: 05:23		
Phosphate as P, Ortho		Work Order #: MLTJ41AC LCS Lot-Sample#: F1H130000-022			
	96	(90 - 110)	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1	Analysis Time..: 02:51		
Sulfate		Work Order #: MLVDK1AC LCS Lot-Sample#: F1H180000-226			
	99	(90 - 110)	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 1	Analysis Time..: 04:32		
Total Alkalinity		Work Order #: MLWW41AA LCS Lot-Sample#: F1H220000-085			
	93	(90 - 110)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLWW41AD LCS Lot-Sample#: F1H220000-085			
	94	(90 - 110)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLQ6P1AC LCS Lot-Sample#: F1H170000-114			
	98	(90 - 113)	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 Work Order #...: MLLN11CV-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-006 MLLN11CW-MSD
Date Sampled...: 08/11/11 09:15 Date Received..: 08/12/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 19:05
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	86	(70 - 130)			SW846 8260B
	98	(70 - 130)	13	(0-20)	SW846 8260B
Dibromochloromethane	94	(60 - 135)			SW846 8260B
	103	(60 - 135)	8.5	(0-20)	SW846 8260B
Vinyl chloride	78	(50 - 145)			SW846 8260B
	91	(50 - 145)	15	(0-20)	SW846 8260B
Bromomethane	87	(30 - 145)			SW846 8260B
	95	(30 - 145)	9.2	(0-20)	SW846 8260B
Chloroethane	87	(60 - 135)			SW846 8260B
	97	(60 - 135)	11	(0-20)	SW846 8260B
Acetone	94	(40 - 140)			SW846 8260B
	96	(40 - 140)	2.0	(0-20)	SW846 8260B
1,1-Dichloroethene	97	(70 - 130)			SW846 8260B
	105	(70 - 130)	7.2	(0-20)	SW846 8260B
Methylene chloride	88	(55 - 140)			SW846 8260B
	95	(55 - 140)	7.3	(0-20)	SW846 8260B
Carbon disulfide	91	(35 - 160)			SW846 8260B
	96	(35 - 160)	5.6	(0-20)	SW846 8260B
1,1-Dichloroethane	92	(70 - 135)			SW846 8260B
	100	(70 - 135)	8.3	(0-20)	SW846 8260B
2-Butanone	88	(30 - 150)			SW846 8260B
	94	(30 - 150)	7.1	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	91	(85 - 115)			SW846 8260B
	100	(85 - 115)	9.8	(0-20)	SW846 8260B
Chloroform	89	(65 - 135)			SW846 8260B
	97	(65 - 135)	8.4	(0-20)	SW846 8260B
1,1,1-Trichloroethane	95	(65 - 130)			SW846 8260B
	103	(65 - 130)	8.8	(0-20)	SW846 8260B
Carbon tetrachloride	95	(65 - 140)			SW846 8260B
	103	(65 - 140)	8.2	(0-20)	SW846 8260B
1,2-Dichloroethane	89	(70 - 130)			SW846 8260B
	100	(70 - 130)	12	(0-20)	SW846 8260B
Benzene	92	(80 - 120)			SW846 8260B
	100	(80 - 120)	8.3	(0-20)	SW846 8260B
Trichloroethene	89	(70 - 125)			SW846 8260B
	93	(70 - 125)	4.5	(0-20)	SW846 8260B
1,2-Dichloropropane	89	(75 - 125)			SW846 8260B
	96	(75 - 125)	8.4	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 Work Order #...: MLLN11CV-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-006 MLLN11CW-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	94	(75 - 120)			SW846 8260B
	102	(75 - 120)	8.1	(0-20)	SW846 8260B
1,1,2-Trichloroethane	92	(75 - 125)			SW846 8260B
	102	(75 - 125)	11	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	96	(55 - 140)			SW846 8260B
	106	(55 - 140)	9.7	(0-20)	SW846 8260B
Toluene	100	(75 - 120)			SW846 8260B
	103	(75 - 120)	3.2	(0-20)	SW846 8260B
1,3-Dichlorobenzene	98	(75 - 125)			SW846 8260B
	102	(75 - 125)	3.4	(0-20)	SW846 8260B
1,4-Dichlorobenzene	94	(75 - 125)			SW846 8260B
	99	(75 - 125)	4.5	(0-20)	SW846 8260B
2-Hexanone	82	(55 - 130)			SW846 8260B
	98	(55 - 130)	17	(0-20)	SW846 8260B
4-Methyl-2-pentanone	88	(60 - 135)			SW846 8260B
	102	(60 - 135)	15	(0-20)	SW846 8260B
Chlorobenzene	93	(80 - 120)			SW846 8260B
	98	(80 - 120)	5.5	(0-20)	SW846 8260B
Bromoform	100	(70 - 130)			SW846 8260B
	108	(70 - 130)	7.6	(0-20)	SW846 8260B
Ethylbenzene	98	(75 - 125)			SW846 8260B
	104	(75 - 125)	5.7	(0-20)	SW846 8260B
Styrene	106	(65 - 135)			SW846 8260B
	112	(65 - 135)	6.0	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	90	(65 - 130)			SW846 8260B
	99	(65 - 130)	9.1	(0-20)	SW846 8260B
Tetrachloroethene	96	(45 - 150)			SW846 8260B
	101	(45 - 150)	5.7	(0-20)	SW846 8260B
1,2-Dichlorobenzene	95	(70 - 120)			SW846 8260B
	100	(70 - 120)	5.3	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
	105	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
	108	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
	105	(70 - 120)
4-Bromofluorobenzene	97	(75 - 120)
	98	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 **Work Order #...:** MLLN71CF-MS **Matrix.....:** WATER
MS Lot-Sample #: F1H120447-007 MLLN71CG-MSD
Date Sampled...: 08/11/11 10:15 **Date Received..:** 08/12/11
Prep Date.....: 08/19/11 **Analysis Date..:** 08/19/11
Prep Batch #...: 1231041 **Analysis Time..:** 09:20
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Vinyl chloride	**93**	**(50 - 145)**			**SW846 8260B**
	96	**(50 - 145)**	**2.4**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethane	**100**	**(70 - 135)**			**SW846 8260B**
	95	**(70 - 135)**	**4.6**	**(0-20)**	**SW846 8260B**
1,2-Dichloroethene (total)	**100**	**(85 - 115)**			**SW846 8260B**
	98	**(85 - 115)**	**2.4**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
	102	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
	102	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)
	100	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H120447-001 **Prep Batch #...:** 1227138							
Uranium	107	(80 - 120)			SW846 6020A	08/15-08/17/11	MLLNJ1A5
	109	(80 - 120)	1.4	(0-20)	SW846 6020A	08/15-08/17/11	MLLNJ1A6
		Dilution Factor: 1					
		Analysis Time..: 18:12					
MS Lot-Sample #: F1H120447-001 **Prep Batch #...:** 1227139							
Aluminum	103	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CC
	97	(80 - 120)	5.6	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CD
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Antimony	101	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C9
	96	(80 - 120)	5.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DA
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Arsenic	104	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1A7
	98	(80 - 120)	5.8	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1A8
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Barium	101	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CE
	96	(80 - 120)	4.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CF
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Beryllium	105	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CG
	101	(80 - 120)	3.9	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CH
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Cadmium	101	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CL
	96	(80 - 120)	5.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CM
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Calcium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CJ
	63 N	(80 - 120)	3.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CK
		Dilution Factor: 1					
		Analysis Time..: 10:19					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CQ
	92	(80 - 120)	4.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CR
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Cobalt	95	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CN
	90	(80 - 120)	4.9	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CP
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Copper	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CT
	92	(80 - 120)	4.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CU
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Iron	99	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CV
	94	(80 - 120)	4.6	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CW
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Lead	97	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C7
	92	(80 - 120)	5.8	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C8
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Magnesium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CX
	80	(80 - 120)	3.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C0
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Manganese	98	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C1
	94	(80 - 120)	4.0	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C2
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Nickel	97	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C5
	91	(80 - 120)	5.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C6
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Selenium	105	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DC
	98	(80 - 120)	7.1	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DD
		Dilution Factor: 1					
		Analysis Time..: 10:19					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	92	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1A9
	88	(80 - 120)	4.6	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CA
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Sodium	104	(80 - 120)			SW846 6010C	08/15-08/19/11	MLLNJ1C3
	161 N	(80 - 120)	6.3	(0-20)	SW846 6010C	08/15-08/19/11	MLLNJ1C4
		Dilution Factor: 5					
		Analysis Time..: 13:08					
Strontium	109	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DE
	101	(80 - 120)	4.9	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DF
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Thallium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DG
	91	(80 - 120)	5.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DH
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Vanadium	97	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DJ
	93	(80 - 120)	3.8	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DK
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Zinc	110	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DL
	103	(80 - 120)	6.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DM
		Dilution Factor: 1					
		Analysis Time..: 10:19					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H130407 **Matrix.....:** WATER
Date Sampled...: 08/12/11 08:45 **Date Received..:** 08/13/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLL891CH		MS Lot-Sample #: F1H130407-001	
	105	(90 - 110)	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 500	Analysis Time..: 04:03		
Fluoride		Work Order #...: MLL891CK		MS Lot-Sample #: F1H130407-001	
	100	(90 - 110)	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 10	Analysis Time..: 03:34		
Nitrate		Work Order #...: MLL891CM		MS Lot-Sample #: F1H130407-001	
	97	(90 - 110)	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1	Analysis Time..: 03:19		
Nitrite		Work Order #...: MLL891CF		MS Lot-Sample #: F1H130407-001	
	53 N	(90 - 110)	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 50	Analysis Time..: 05:50		
Phosphate as P, Ortho		Work Order #...: MLL891CR		MS Lot-Sample #: F1H130407-001	
	54 N	(90 - 110)	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1	Analysis Time..: 03:19		
Sulfate		Work Order #...: MLL891CW		MS Lot-Sample #: F1H130407-001	
	102	(90 - 110)	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 10	Analysis Time..: 07:53		
Total Alkalinity		Work Order #...: MLKJ51CF		MS Lot-Sample #: F1H110460-009	
	96	(80 - 120)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H130407 **Work Order #...:** MLL89-SMP MLL89-DUP **Matrix.....:** WATER

Date Sampled...: 08/12/11 08:45 **Date Received..:** 08/13/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H130407-001		
	1490	1460	mg/L	2.0	(0-20)	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 500				Analysis Time..: 04:03		
Fluoride						SD Lot-Sample #: F1H130407-001		
	2.1	1.9	mg/L	7.2	(0-20)	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 10				Analysis Time..: 03:34		
Nitrate						SD Lot-Sample #: F1H130407-001		
	0.090	0.088	mg/L	2.3	(0-20)	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1				Analysis Time..: 03:19		
Nitrite						SD Lot-Sample #: F1H130407-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 50				Analysis Time..: 05:50		
Phosphate as P, Ortho						SD Lot-Sample #: F1H130407-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1				Analysis Time..: 03:19		
Sulfate						SD Lot-Sample #: F1H130407-001		
	82.9	81.8	mg/L	1.3	(0-20)	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 10				Analysis Time..: 07:53		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H130407 **Work Order #...:** MLLN1-SMP MLLN1-DUP **Matrix.....:** WATER

Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H120447-006		
	645	665	mg/L	3.1	(0-0.0)	MCAWW 160.1	08/17-08/22/11	1229114
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H130407 **Work Order #...:** MLKJ5-SMP MLKJ5-DUP **Matrix.....:** WATER

Date Sampled...: 08/10/11 09:30 **Date Received..:** 08/11/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #: F1H110460-009		
	256	257	mg/L	0.31	(0-20)	MCAWW 310.1	08/22/11	1234085

Dilution Factor: 1 Analysis Time..: 00:00

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001

Radiochemistry

Lab Sample ID: F1H130407-001
Work Order: MLL89
Matrix: WATER

Date Collected: 08/12/11 0845
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 39
Uranium 234	55.7		5.1	0.1	0.1	08/19/11	08/21/11
Uranium 235/236	3.22		0.60	0.10	0.06	08/19/11	08/21/11
Uranium 238	56.4		5.2	0.1	0.08	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW060001

Radiochemistry

Lab Sample ID: F1H130407-002
Work Order: MLL9A
Matrix: WATER

Date Collected: 08/12/11 1000
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 75
Uranium 234	1.77		0.29	0.10	0.02	08/19/11	08/21/11
Uranium 235/236	0.034		0.039	0.100	0.031	08/19/11	08/21/11
Uranium 238	1.16		0.23	0.10	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW100001

Radiochemistry

Lab Sample ID: F1H130407-003
Work Order: MLL9C
Matrix: WATER

Date Collected: 08/12/11 1055
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 89
Uranium 234	0.58		0.14	0.10	0.04	08/19/11	08/21/11
Uranium 235/236	0.029		0.034	0.100	0.026	08/19/11	08/21/11
Uranium 238	0.41		0.12	0.10	0.02	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW070001

Radiochemistry

Lab Sample ID: F1H130407-004
Work Order: MLL9D
Matrix: WATER

Date Collected: 08/12/11 1135
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 60
Uranium 234	11.8		1.2	0.1	0.03	08/19/11	08/21/11
Uranium 235/236	0.67		0.20	0.10	0.04	08/19/11	08/21/11
Uranium 238	12.1		1.3	0.1	0.03	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003

Radiochemistry

Lab Sample ID: F1H130407-005
Work Order: MLL9E
Matrix: WATER

Date Collected: 08/12/11 0000
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 44
Uranium 234	49.9		4.5	0.1	0.04	08/19/11	08/21/11
Uranium 235/236	2.69		0.51	0.10	0.05	08/19/11	08/21/11
Uranium 238	50.5		4.6	0.1	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H130407-006
Work Order: MLL9F
Matrix: WATER

Date Collected: 08/12/11 0845
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 37
Uranium 234	58.5		5.3	0.1	0.1	08/19/11	08/21/11
Uranium 235/236	3.28		0.61	0.10	0.06	08/19/11	08/21/11
Uranium 238	60.5		5.5	0.1	0.05	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW060001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H130407-007
Work Order: MLL9G
Matrix: WATER

Date Collected: 08/12/11 1000
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 71
Uranium 234	1.57		0.28	0.10	0.04	08/19/11	08/21/11
Uranium 235/236	0.107		0.074	0.100	0.056	08/19/11	08/21/11
Uranium 238	1.04		0.22	0.10	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW100001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H130407-008
Work Order: MLL9H
Matrix: WATER

Date Collected: 08/12/11 1055
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1231165		Yld % 79
Uranium 234	0.65		0.16	0.10	0.02	08/19/11	08/21/11
Uranium 235/236	0.011	U	0.021	0.100	0.028	08/19/11	08/21/11
Uranium 238	0.53		0.14	0.10	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW070001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H130407-009
Work Order: MLL9J
Matrix: WATER

Date Collected: 08/12/11 1135
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 74
Uranium 234	10.5		1.1	0.1	0.03	08/19/11	08/21/11
Uranium 235/236	0.54		0.17	0.10	0.05	08/19/11	08/21/11
Uranium 238	10.6		1.1	0.1	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003 DISSOLVED

Radiochemistry

Lab Sample ID: F1H130407-010
Work Order: MLL9K
Matrix: WATER

Date Collected: 08/12/11 0000
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 c+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 41
Uranium 234	55.2		5.0	0.1	0.09	08/19/11	08/21/11
Uranium 235/236	2.96		0.56	0.10	0.06	08/19/11	08/21/11
Uranium 238	56.6		5.1	0.1	0.05	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H130407
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1231165		Yld % 91	F1H190000-165B
Uranium 234	0.013	U	0.021	0.100	0.034	08/19/11	08/21/11
Uranium 235/236	0.009	U	0.018	0.100	0.025	08/19/11	08/21/11
Uranium 238	-0.0037	U	0.0053	0.100	0.039	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F1H130407
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ +/-)	% Yld	% Rec	QC Control Limits	Lab Sample ID Precision	
Iso URANIUM (LONG CT)	DOE A-01-R MOD		pCi/L	A-01-R MOD				F1H190000-165C	
Uranium 234		3.26	2.97	0.40	89	91	(76 - 136)		
	Spk 2	3.26	3.27	0.43	80	100	(76 - 136)	10	%RPD
Uranium 238		3.39	3.32	0.43	89	98	(76 - 134)		
	Spk 2	3.39	3.60	0.46	80	106	(76 - 134)	8	%RPD
		Batch #:	1231165		Analysis Date:		08/21/11		

NOTE(S): F1H130407

Calculations are performed before rounding to avoid round-off error in calculated results

F1H130407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R268,2-50,V13

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-13

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-22

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-25

Client: 622706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 0
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A04BMW260001			2011-08-12 / 845	MLL89	WATER

SAMPLE COMMENTS:

FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of8	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 5of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H130407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R268,2-50,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 0

Date Received: 2011-08-13

Analytical Due Date: 2011-08-22

Report Due Date: 2011-08-25

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A02MW060001			2011-08-12 / 1000	MLL9A	WATER

SAMPLE COMMENTS:

SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I

F1H130407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R268,2-50,METS

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-13

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-22

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-25

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 0
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

3 A02MW100001 2011-08-12 / 1055 MLL9C WATER

SAMPLE COMMENTS:

BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER

F1H130407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R268,2-50,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-13

Analytical Due Date: 2011-08-22

Report Due Date: 2011-08-25

Report Type: B Standard Report

#SMPS in LOT: 0 | EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

4 A02MW070001 2011-08-12 / 1135 MLL9D WATER

SAMPLE COMMENTS:

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE # | CLIENT SAMPLE ID | Site ID | Client Matrix | DATE/TIME SAMPLED | WORKORDER |

F1H130407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R268,2-50,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-13

Analytical Due Date: 2011-08-22

Report Due Date: 2011-08-25

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

5 A04BMW9003 2011-08-12 / 0 MLL9E WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

SAMPLE # | CLIENT SAMPLE ID | Site ID | Client Matrix | DATE/TIME SAMPLED | WORKORDER

F1H130407

CLIENT ANALYSIS SUMMARY

Storage Loc: TestAmerica St. Louis R265,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40416 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-13

Analytical Due Date: 2011-08-22

Report Due Date: 2011-08-25

Report Type: B Standard Report

EDD Code: 00

#SMPS In LOT: 0

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

6 A04BMW250001 DISSOLVED 2011-08-12 / 845 MLL9F WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LCT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
7	A02MW060001 DISSOLVED			2011-08-12 / 1000	MLL9G	WATER

SAMPLE COMMENTS:

TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

Storage Loc: R268,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 0

Date Received: 2011-08-13

Analytical Due Date: 2011-08-22

Report Due Date: 2011-08-25

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LCT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	A02MW100001 DISSOLVED			2011-08-12 / 1055	MLL9H	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H130407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R268,METS

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-13

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-22

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-25

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 0
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium latead of 200.8

BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE # | CLIENT SAMPLE ID | Site ID | Client Matrix | DATE/TIME SAMPLED | WORKORDER | I

9 A02MW070001 DISSOLVED 2011-08-12 / 1135 MLL9J WATER

SAMPLE COMMENTS:

MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE # | CLIENT SAMPLE ID | Site ID | Client Matrix | DATE/TIME SAMPLED | WORKORDER | I

10 A04BMW9003 DISSOLVED 2011-08-12 / 0 MLL9K WATER

SAMPLE COMMENTS:

MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06

F1H130407

CLIENT ANALYSIS SUMMARY

Storage Loc: TestAmerica St. Louis R288,METS

Project Manager: LMF
Quote #: 89251
SDG:
Project: Y40415
Guteryl Steel
PO#: 697886
Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 0

Date Received: 2011-08-13
Analytical Due Date: 2011-08-22
Report Due Date: 2011-08-25
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

...stAmerica St. Louis
15 Rider Trail North
...h City, MO 63045
...ne 314.298.8566 fax 314.298.8757

CUK 018

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/12/2011	COC No: 008
...w Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
...0 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
...cinnati, Ohio 45212	Calendar (C) or Work Days (W)			
...3) 782-4700 Phone	TAT if different from Below ____			
...3) 782-4807 FAX	[X] 2 weeks			SDG No.
...ject Name: Former Guteri Specialty Steel Corporation FUSRA	[ ] 1 week			
...: Lockport, NY	[ ] 2 days			
...#	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury		Sample Specific Notes:
BMW250001	8/12/2011	0845	Grab	GW	10	X		X	X	X	X	X	X	X					3X VIA	4 VLP 2x250 1x500
MW060001	8/12/2011	1000	Grab	GW	7	X		X	X	X	X	X	X							
MW100001	8/12/2011	1055	Grab	GW	7	X		X	X	X	X	X	X							
MW070001	8/12/2011	1135	Grab	GW	7	X		X	X	X	X	X	X							
BMW9003	8/12/2011	—	Grab	GW	10	X		X	X	X	X	X	X	X					3X VIAL	

...servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

...sible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [X] Disposal By Lab [ ] Archive For ____ Months

...cial Instructions/QC Requirements & Comments:

...nquished by: [signature]	Company: Shaw E & I. Inc.	Date/Time: 8/12/11 1635	Received by: [signature]	Company: TAL	Date/Time: 8/12/2011 @ 16:35
...nquished by: [signature]	Company: TAL	Date/Time: 8/12/2011 17:02	Received by: [signature]	Company: TA STL	Date/Time: 8/13/11 0910
...nquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F1H130407 TestAmerica St. Louis

CUR Form #: 0 1 8

CONDITION UPON RECEIPT FORM

Client: SHAW

Quote No: 89251

COC/RFA No: 008

Initiated By: NVD Date: 8/13/11 Time: 0910

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*

1. 4485 0258 3870
2. 4485 0258 3859
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Sample Temperature (s):**

1. 4
2. AMBIENT
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/15/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. Y40415

Guterl Steel

Lot #: F1H160430

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 26, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H160430

This report contains the analytical results for the six samples received under chain of custody by TestAmerica St. Louis on August 16, 2011. These samples are associated with your Guterl Steel project.

All applicable quality control procedures met method-specified acceptance criteria except as noted on the following page.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. **TestAmerica St. Louis' Florida certification number is E87689.** The case narrative is an integral part of this report.

This report shall not be reproduced, except in full, without the written approval of the laboratory.

This report is incomplete without the case narrative. All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

Observations/Nonconformances

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1231041
Tertahydrofuran was removed from the initial calibration lowest point due to poor response. Isobutanol, n-Butanol, 2-Chloroethylvinyl ether, 4-Methyl-2-pentanone and 2-Hexanone were removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration. The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001
F1H160430 (5): A04CMW711DD0001
F1H160430 (6): TRIP BLANK #1

The internal standard recoveries are within QC limits as compared to the IS limits set by the CCV for this 12 hour clock. However, the client requirement for DOD4.1 has the IS limits set to the mid-point of the ICAL as requested. The internal standard(s) recovery is outside the lower QC limit, indicating a potential positive bias. There were no target analytes associated with this internal standard observed above the reporting limit in the sample; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001
F1H160430 (6): TRIP BLANK #1

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1229104
Strontium was observed in the CCB above the acceptable QC limit (>3X MDL). Associated samples which are either non-detect for the contaminant or exhibit concentrations greater than ten (10) times the concentrations observed in the CCB, do not require re-analysis.

Affected Samples:
F1H160430 (1): A04BMW706D0001 DISSOLVED
F1H160430 (3): A04BMW706D0001

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

The MS (MSD) recovery for calcium, magnesium and sodium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:
F1H160430 (1): A04BMW706D0001 DISSOLVED
F1H160430 (2): A04DMW710D0001 DISSOLVED
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001

Chloride (MCAWW 300.0A)

Batch: 1228144
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001
F1H160430 (5): A04CMW711DD0001

Fluoride (MCAWW 300.0A)

Batch: 1228145
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H160430 (3): A04BMW706D0001

The sample was reported ND at dilution, due to high concentrations of other analytes, which masked the retention times for these anions in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H160430 (5): A04CMW711DD0001

Sulfate (MCAWW 300.0A)

Batch: 1228149
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001
F1H160430 (5): A04CMW711DD0001

Nitrite as N (MCAWW 300.0A)

Batch: 1228147
The sample was reported ND at dilution, due to high concentrations of other analytes, which masked the retention times for these anions in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001
F1H160430 (5): A04CMW711DD0001

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1228148
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001
F1H160430 (5): A04CMW711DD0001

The samples were reported ND at dilution, due to high concentrations of other analytes, which masked the retention times for these anions in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (5): A04CMW711DD0001

Total Dissolved Solids (MCAWW 160.1)
The samples were analyzed at a dilution based on high concentrations of target analytes. The reporting limit has been adjusted accordingly.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (5): A04CMW711DD0001

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)
There was insufficient sample provided to perform the sample duplicate, an LCS duplicate was used instead.

Affected Samples:
F1H160430 (1): A04BMW706D0001 DISSOLVED
F1H160430 (2): A04DMW710D0001 DISSOLVED
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001

There were no other nonconformances or observations noted with any analysis on this lot.

METHODS SUMMARY

F1H160430

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H160430

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLPER	001	A04BMW706D0001 DISSOLVED	08/15/11	08:40
MLPE0	002	A04DMW710D0001 DISSOLVED	08/15/11	09:55
MLPE4	003	A04BMW706D0001	08/15/11	08:40
MLPE8	004	A04DMW710D0001	08/15/11	09:55
MLPE9	005	A04CMW711DD0001	08/15/11	12:00
MLPHA	006	TRIP BLANK #1	08/15/11	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H160430-001 **Matrix.....:** WATER
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**1.7**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLPER1A4**
		Dilution Factor: 1		Analysis Time..: 08:26		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AE
		Dilution Factor: 1		Analysis Time..: 18:57		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AF
		Dilution Factor: 1		Analysis Time..: 18:57		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLPER1AD
		Dilution Factor: 1		Analysis Time..: 12:51		
Barium	**15.4 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPER1AG**
		Dilution Factor: 1		Analysis Time..: 18:57		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AH
		Dilution Factor: 1		Analysis Time..: 18:57		
Calcium	**560000**	**20000**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLPER1AJ**
		Dilution Factor: 20		Analysis Time..: 13:24		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AK
		Dilution Factor: 1		Analysis Time..: 18:57		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AL
		Dilution Factor: 1		Analysis Time..: 18:57		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AM
		Dilution Factor: 1		Analysis Time..: 18:57		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AN
		Dilution Factor: 1		Analysis Time..: 18:57		
Iron	**340**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPER1AP**
		Dilution Factor: 1		Analysis Time..: 18:57		
Magnesium	**127000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPER1AQ**
		Dilution Factor: 5		Analysis Time..: 09:29		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H160430-001 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**102**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPER1AR**
		Dilution Factor: 1		Analysis Time..: 18:57		
Sodium	**170000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPER1AT**
		Dilution Factor: 5		Analysis Time..: 09:29		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AU
		Dilution Factor: 1		Analysis Time..: 18:57		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AV
		Dilution Factor: 1		Analysis Time..: 18:57		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AW
		Dilution Factor: 1		Analysis Time..: 18:57		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLPER1AX
		Dilution Factor: 1		Analysis Time..: 12:51		
Strontium	**7700**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLPER1A0**
		Dilution Factor: 20		Analysis Time..: 13:24		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1A1
		Dilution Factor: 1		Analysis Time..: 18:57		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1A2
		Dilution Factor: 1		Analysis Time..: 18:57		
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLPER1A3
		Dilution Factor: 1		Analysis Time..: 12:51		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H160430-002 **Matrix.....:** WATER
Date Sampled...: 08/15/11 09:55 **Date Received..:** 08/16/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**66.1**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLPE01AF**
		Dilution Factor: 1		Analysis Time..: 08:52		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AL
		Dilution Factor: 1		Analysis Time..: 19:16		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AM
		Dilution Factor: 1		Analysis Time..: 19:16		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE01AK
		Dilution Factor: 1		Analysis Time..: 13:11		
Barium	**47.6 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE01AN**
		Dilution Factor: 1		Analysis Time..: 19:16		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AP
		Dilution Factor: 1		Analysis Time..: 19:16		
Calcium	**113000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE01AQ**
		Dilution Factor: 5		Analysis Time..: 09:48		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AR
		Dilution Factor: 1		Analysis Time..: 19:16		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AT
		Dilution Factor: 1		Analysis Time..: 19:16		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AU
		Dilution Factor: 1		Analysis Time..: 19:16		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AV
		Dilution Factor: 1		Analysis Time..: 19:16		
Iron	**150**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE01AW**
		Dilution Factor: 1		Analysis Time..: 19:16		
Magnesium	**31400**	**1000**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLPE01AX**
		Dilution Factor: 1		Analysis Time..: 12:39		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H160430-002 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**26.4**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE01A0**
		Dilution Factor: 1		Analysis Time..: 19:16		
Sodium	**205000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE01A1**
		Dilution Factor: 5		Analysis Time..: 09:48		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01A2
		Dilution Factor: 1		Analysis Time..: 19:16		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01A3
		Dilution Factor: 1		Analysis Time..: 19:16		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01A4
		Dilution Factor: 1		Analysis Time..: 19:16		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE01A5
		Dilution Factor: 1		Analysis Time..: 13:11		
Strontium	**584**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE01AA**
		Dilution Factor: 5		Analysis Time..: 09:48		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AC
		Dilution Factor: 1		Analysis Time..: 19:16		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AD
		Dilution Factor: 1		Analysis Time..: 19:16		
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE01AE
		Dilution Factor: 1		Analysis Time..: 13:11		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001

GC/MS Volatiles

Lot-Sample #...: F1H160430-003 Work Order #...: MLPE41AC Matrix.....: WATER
Date Sampled...: 08/15/11 08:40 Date Received..: 08/16/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 11:31
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethane	**0.38 J**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.55 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.12 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	**0.12 J**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.32 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001

GC/MS Volatiles

Lot-Sample #...: F1H160430-003 Work Order #...: MLPE41AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	103	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001

TOTAL Metals

Lot-Sample #...: F1H160430-003 Matrix.....: WATER
Date Sampled...: 08/15/11 08:40 Date Received..: 08/16/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	1.8	1.0	ug/L	SW846 6020A	08/17-08/19/11	MLPE41A6
		Dilution Factor: 1		Analysis Time..: 09:06		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AG
		Dilution Factor: 1		Analysis Time..: 19:29		
Aluminum	126 J	200	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AH
		Dilution Factor: 1		Analysis Time..: 19:29		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE41AF
		Dilution Factor: 1		Analysis Time..: 13:24		
Barium	16.0 J	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AJ
		Dilution Factor: 1		Analysis Time..: 19:29		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AK
		Dilution Factor: 1		Analysis Time..: 19:29		
Calcium	520000	20000	ug/L	SW846 6010C	08/17-08/23/11	MLPE41AL
		Dilution Factor: 20		Analysis Time..: 13:56		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AM
		Dilution Factor: 1		Analysis Time..: 19:29		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AN
		Dilution Factor: 1		Analysis Time..: 19:29		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AP
		Dilution Factor: 1		Analysis Time..: 19:29		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AQ
		Dilution Factor: 1		Analysis Time..: 19:29		
Iron	393	100	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AR
		Dilution Factor: 1		Analysis Time..: 19:29		
Magnesium	112000	5000	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AT
		Dilution Factor: 5		Analysis Time..: 10:01		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001

TOTAL Metals

Lot-Sample #...: F1H160430-003 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**105**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE41AU**
		Dilution Factor: 1		Analysis Time..: 19:29		
Sodium	**166000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE41AV**
		Dilution Factor: 5		Analysis Time..: 10:01		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AW
		Dilution Factor: 1		Analysis Time..: 19:29		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AX
		Dilution Factor: 1		Analysis Time..: 19:29		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41A0
		Dilution Factor: 1		Analysis Time..: 19:29		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE41A1
		Dilution Factor: 1		Analysis Time..: 13:24		
Strontium	**7350**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLPE41A2**
		Dilution Factor: 20		Analysis Time..: 13:56		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41A3
		Dilution Factor: 1		Analysis Time..: 19:29		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41A4
		Dilution Factor: 1		Analysis Time..: 19:29		
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE41A5
		Dilution Factor: 1		Analysis Time..: 13:24		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001

General Chemistry

Lot-Sample #...: F1H160430-003 Work Order #...: MLPE4 Matrix.....: WATER
Date Sampled...: 08/15/11 08:40 Date Received..: 08/16/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	247	40.0	mg/L	MCAWW 300.0A	08/16/11	1228144
		Dilution Factor: 200		Analysis Time..: 06:31		
Fluoride	0.72	0.50	mg/L	MCAWW 300.0A	08/16/11	1228145
		Dilution Factor: 5		Analysis Time..: 06:04		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/16/11	1228146
		Dilution Factor: 1		Analysis Time..: 05:51		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/16/11	1228147
		Dilution Factor: 10		Analysis Time..: 06:18		
Phosphate as P, Ortho	ND	5.0	mg/L	MCAWW 300.0A	08/16/11	1228148
		Dilution Factor: 10		Analysis Time..: 06:18		
Sulfate	1200	100	mg/L	MCAWW 300.0A	08/16/11	1228149
		Dilution Factor: 200		Analysis Time..: 06:31		
Total Alkalinity	234	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	2660	50.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 5		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001

GC/MS Volatiles

Lot-Sample #...: F1H160430-004 Work Order #...: MLPE81AN Matrix.....: WATER
Date Sampled...: 08/15/11 09:55 Date Received..: 08/16/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 15:33
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethane	23	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	9.8	1.0	ug/L
1,2-Dichloroethene (total)	20	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	0.51 J	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	0.21 J	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	10	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	12	1.0	ug/L
Vinyl chloride	0.86 J	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	1.1 J	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001

GC/MS Volatiles

Lot-Sample #...: F1H160430-004 **Work Order #...:** MLPE81AN **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	104	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001

TOTAL Metals

Lot-Sample #...: F1H160430-004 **Matrix.....:** WATER
Date Sampled...: 08/15/11 09:55 **Date Received..:** 08/16/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**67.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLPE81AH**
		Dilution Factor: 1		Analysis Time..: 09:12		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81AT
		Dilution Factor: 1		Analysis Time..: 19:42		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLPE81AU
		Dilution Factor: 1		Analysis Time..: 19:42		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE81AR
		Dilution Factor: 1		Analysis Time..: 13:49		
Barium	**30.6 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE81AV**
		Dilution Factor: 1		Analysis Time..: 19:42		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81AW
		Dilution Factor: 1		Analysis Time..: 19:42		
Calcium	**117000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE81AX**
		Dilution Factor: 5		Analysis Time..: 10:14		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81A0
		Dilution Factor: 1		Analysis Time..: 19:42		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81A1
		Dilution Factor: 1		Analysis Time..: 19:42		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81A2
		Dilution Factor: 1		Analysis Time..: 19:42		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81A3
		Dilution Factor: 1		Analysis Time..: 19:42		
Iron	**94.0 J**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE81A4**
		Dilution Factor: 1		Analysis Time..: 19:42		
Magnesium	**32100**	**1000**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLPE81A5**
		Dilution Factor: 1		Analysis Time..: 12:52		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001

TOTAL Metals

Lot-Sample #...: F1H160430-004 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**25.2**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE81A6**
		Dilution Factor: 1		Analysis Time..: 19:42		
Sodium	**214000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE81A7**
		Dilution Factor: 5		Analysis Time..: 10:14		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81A8
		Dilution Factor: 1		Analysis Time..: 19:42		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81A9
		Dilution Factor: 1		Analysis Time..: 19:42		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81AA
		Dilution Factor: 1		Analysis Time..: 19:42		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE81AC
		Dilution Factor: 1		Analysis Time..: 13:49		
Strontium	**615**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE81AD**
		Dilution Factor: 5		Analysis Time..: 10:14		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81AE
		Dilution Factor: 1		Analysis Time..: 19:42		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81AF
		Dilution Factor: 1		Analysis Time..: 19:42		
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE81AG
		Dilution Factor: 1		Analysis Time..: 13:49		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001

General Chemistry

Lot-Sample #...: F1H160430-004 Work Order #...: MLPE8 Matrix.....: WATER
Date Sampled...: 08/15/11 09:55 Date Received..: 08/16/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	314	20.0	mg/L	MCAWW 300.0A	08/16/11	1228144
		Dilution Factor: 100		Analysis Time..: 02:03		
Fluoride	1.0	0.10	mg/L	MCAWW 300.0A	08/16/11	1228145
		Dilution Factor: 1		Analysis Time..: 01:23		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/16/11	1228146
		Dilution Factor: 1		Analysis Time..: 01:23		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/16/11	1228147
		Dilution Factor: 10		Analysis Time..: 01:49		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/16/11	1228148
		Dilution Factor: 1		Analysis Time..: 01:23		
Sulfate	73.4	2.5	mg/L	MCAWW 300.0A	08/16/11	1228149
		Dilution Factor: 5		Analysis Time..: 01:36		
Total Alkalinity	272	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	960	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001

GC/MS Volatiles

Lot-Sample #...: F1H160430-005 Work Order #...: MLPE91AA Matrix.....: WATER
Date Sampled...: 08/15/11 12:00 Date Received..: 08/16/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 14:40
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**5.4**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**0.64 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.33 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.50 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.16 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001

GC/MS Volatiles

Lot-Sample #...: F1H160430-005 Work Order #...: MLPE91AA Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	110	(85 - 115)
1,2-Dichloroethane-d4	111	(70 - 120)
4-Bromofluorobenzene	106	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001

General Chemistry

Lot-Sample #...: F1H160430-005 Work Order #...: MLPE9 Matrix.....: WATER
Date Sampled...: 08/15/11 12:00 Date Received..: 08/16/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	806	100	mg/L	MCAWW 300.0A	08/16/11	1228144
		Dilution Factor: 500		Analysis Time..: 05:11		
Fluoride	0.64 B	1.0	mg/L	MCAWW 300.0A	08/16/11	1228145
		Dilution Factor: 10		Analysis Time..: 04:44		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/16/11	1228146
		Dilution Factor: 1		Analysis Time..: 04:31		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/16/11	1228147
		Dilution Factor: 10		Analysis Time..: 04:44		
Phosphate as P, Ortho	ND	5.0	mg/L	MCAWW 300.0A	08/16/11	1228148
		Dilution Factor: 10		Analysis Time..: 04:44		
Sulfate	2170	250	mg/L	MCAWW 300.0A	08/16/11	1228149
		Dilution Factor: 500		Analysis Time..: 05:11		
Total Alkalinity	34.4	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	5030	100	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 10		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #1

GC/MS Volatiles

Lot-Sample #...: F1H160430-006 Work Order #...: MLPHA1AA Matrix.....: WATER
Date Sampled...: 08/15/11 Date Received..: 08/16/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 10:39
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**4.8**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #1

GC/MS Volatiles

Lot-Sample #...: F1H160430-006 Work Order #...: MLPHA1AA Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	105	(85 - 115)
1,2-Dichloroethane-d4	101	(70 - 120)
4-Bromofluorobenzene	103	(75 - 120)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H160430 Work Order #...: MLTXM1AA Matrix.....: WATER
MB Lot-Sample #: F1H190000-041

Prep Date.....: 08/19/11 Analysis Time..: 05:48
Analysis Date..: 08/19/11 Prep Batch #...: 1231041
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	106	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H160430 **Work Order #...:** MLTXM1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	103	(70 - 120)		
4-Bromofluorobenzene	103	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H170000-103 **Prep Batch #...:** 1229103						
Uranium	ND	1.0	ug/L	SW846 6020A	08/17-08/19/11	MLQNA1AA
		Dilution Factor: 1				
		Analysis Time..: 08:13				
MB Lot-Sample #: F1H170000-104 **Prep Batch #...:** 1229104						
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AD
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AU
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQNE1AA
		Dilution Factor: 1				
		Analysis Time..: 12:39				
Barium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AE
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AF
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AH
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Calcium	ND	1000	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AG
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AK
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AJ
		Dilution Factor: 1				
		Analysis Time..: 18:44				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AL
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Iron	ND	100	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AM
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AT
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Magnesium	ND	1000	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AN
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Manganese	ND	15.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AP
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AR
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQNE1AV
		Dilution Factor: 1				
		Analysis Time..: 12:39				
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AC
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Sodium	ND	1000	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AQ
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Strontium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AW
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AX
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1A0
		Dilution Factor: 1				
		Analysis Time..: 18:44				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLQNE1A1

Dilution Factor: 1
Analysis Time..: 12:39

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H160430 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLXXH1AA		MB Lot-Sample #:	F1H160000-144	
	ND	0.20	mg/L	MCAWW 300.0A	08/16/11	1228144
		Dilution Factor: 1				
		Analysis Time..: 01:09				
Fluoride		Work Order #: MLXXM1AA		MB Lot-Sample #:	F1H160000-145	
	ND	0.10	mg/L	MCAWW 300.0A	08/16/11	1228145
		Dilution Factor: 1				
		Analysis Time..: 01:09				
Nitrate		Work Order #: MLXXQ1AA		MB Lot-Sample #:	F1H160000-146	
	ND	0.020	mg/L	MCAWW 300.0A	08/16/11	1228146
		Dilution Factor: 1				
		Analysis Time..: 01:09				
Nitrite		Work Order #: MLXXV1AA		MB Lot-Sample #:	F1H160000-147	
	ND	0.020	mg/L	MCAWW 300.0A	08/16/11	1228147
		Dilution Factor: 1				
		Analysis Time..: 01:09				
Phosphate as P, Ortho		Work Order #: MLXX01AA		MB Lot-Sample #:	F1H160000-148	
	ND	0.50	mg/L	MCAWW 300.0A	08/16/11	1228148
		Dilution Factor: 1				
		Analysis Time..: 01:09				
Sulfate		Work Order #: MLXX31AA		MB Lot-Sample #:	F1H160000-149	
	ND	0.50	mg/L	MCAWW 300.0A	08/16/11	1228149
		Dilution Factor: 1				
		Analysis Time..: 01:09				
Total Alkalinity		Work Order #: MLX1P1AA		MB Lot-Sample #:	F1H230000-125	
	ND	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLQ6P1AA		MB Lot-Sample #:	F1H170000-114	
	ND	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H160430 Work Order #...: MLTXM1AC Matrix.....: WATER
LCS Lot-Sample#: F1H190000-041
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 04:55
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Styrene	110	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	101	(65 - 130)	SW846 8260B
Tetrachloroethene	101	(45 - 150)	SW846 8260B
1,2-Dichlorobenzene	100	(70 - 120)	SW846 8260B
cis-1,3-Dichloropropene	106	(70 - 130)	SW846 8260B
Dibromochloromethane	103	(60 - 135)	SW846 8260B
Vinyl chloride	83	(50 - 145)	SW846 8260B
Bromomethane	101	(30 - 145)	SW846 8260B
Chloroethane	90	(60 - 135)	SW846 8260B
Acetone	93	(40 - 140)	SW846 8260B
1,1-Dichloroethene	99	(70 - 130)	SW846 8260B
Methylene chloride	92	(55 - 140)	SW846 8260B
Carbon disulfide	90	(35 - 160)	SW846 8260B
1,1-Dichloroethane	94	(70 - 135)	SW846 8260B
2-Butanone	101	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	97	(85 - 115)	SW846 8260B
Chloroform	94	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	100	(65 - 130)	SW846 8260B
Carbon tetrachloride	100	(65 - 140)	SW846 8260B
1,2-Dichloroethane	96	(70 - 130)	SW846 8260B
Benzene	95	(80 - 120)	SW846 8260B
Trichloroethene	91	(70 - 125)	SW846 8260B
1,2-Dichloropropane	95	(75 - 125)	SW846 8260B
Bromodichloromethane	100	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	96	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	106	(55 - 140)	SW846 8260B
Toluene	104	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	103	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	99	(75 - 125)	SW846 8260B
2-Hexanone	96	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	108	(60 - 135)	SW846 8260B
Chlorobenzene	95	(80 - 120)	SW846 8260B
Bromoform	109	(70 - 130)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H160430 **Work Order #...:** MLTXM1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H190000-041

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Ethylbenzene	**102**	**(75 - 125)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H170000-103 **Prep Batch #...:** 1229103					
Uranium	109	(80 - 120)	SW846 6020A	08/17-08/19/11	MLQNA1AC
		Dilution Factor: 1		Analysis Time..: 08:19	
LCS Lot-Sample#: F1H170000-104 **Prep Batch #...:** 1229104					
Arsenic	105	(80 - 120)	SW846 6010C	08/17-08/24/11	MLQNE1A2
		Dilution Factor: 1		Analysis Time..: 12:45	
Silver	93	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A3
		Dilution Factor: 1		Analysis Time..: 18:50	
Aluminum	106	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A4
		Dilution Factor: 1		Analysis Time..: 18:50	
Barium	104	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A5
		Dilution Factor: 1		Analysis Time..: 18:50	
Beryllium	112	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A6
		Dilution Factor: 1		Analysis Time..: 18:50	
Calcium	110	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A7
		Dilution Factor: 1		Analysis Time..: 09:23	
Cadmium	106	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A8
		Dilution Factor: 1		Analysis Time..: 18:50	
Cobalt	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A9
		Dilution Factor: 1		Analysis Time..: 18:50	
Chromium	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CA
		Dilution Factor: 1		Analysis Time..: 18:50	
Copper	100	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CC
		Dilution Factor: 1		Analysis Time..: 18:50	
Iron	106	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CD
		Dilution Factor: 1		Analysis Time..: 18:50	
Magnesium	101	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CE
		Dilution Factor: 1		Analysis Time..: 09:23	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	105	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CF
		Dilution Factor: 1	Analysis Time..: 18:50		
Sodium	104	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CG
		Dilution Factor: 1	Analysis Time..: 09:23		
Nickel	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CH
		Dilution Factor: 1	Analysis Time..: 18:50		
Lead	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CJ
		Dilution Factor: 1	Analysis Time..: 18:50		
Antimony	103	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CK
		Dilution Factor: 1	Analysis Time..: 18:50		
Selenium	105	(80 - 120)	SW846 6010C	08/17-08/24/11	MLQNE1CL
		Dilution Factor: 1	Analysis Time..: 12:45		
Strontium	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CM
		Dilution Factor: 1	Analysis Time..: 09:23		
Thallium	100	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CN
		Dilution Factor: 1	Analysis Time..: 18:50		
Vanadium	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CP
		Dilution Factor: 1	Analysis Time..: 18:50		
Zinc	112	(80 - 120)	SW846 6010C	08/17-08/24/11	MLQNE1CQ
		Dilution Factor: 1	Analysis Time..: 12:45		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H160430 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLXXH1AC	LCS Lot-Sample#: F1H160000-144		
	92	(90 - 110)	MCAWW 300.0A	08/16/11	1228144
		Dilution Factor: 1	Analysis Time..: 12:56		
Fluoride		Work Order #: MLXXM1AC	LCS Lot-Sample#: F1H160000-145		
	96	(90 - 110)	MCAWW 300.0A	08/16/11	1228145
		Dilution Factor: 1	Analysis Time..: 12:56		
Nitrate		Work Order #: MLXXQ1AC	LCS Lot-Sample#: F1H160000-146		
	97	(90 - 110)	MCAWW 300.0A	08/16/11	1228146
		Dilution Factor: 1	Analysis Time..: 12:56		
Nitrite		Work Order #: MLXXV1AC	LCS Lot-Sample#: F1H160000-147		
	95	(90 - 110)	MCAWW 300.0A	08/16/11	1228147
		Dilution Factor: 1	Analysis Time..: 12:56		
Phosphate as P, Ortho		Work Order #: MLXX01AC	LCS Lot-Sample#: F1H160000-148		
	99	(90 - 110)	MCAWW 300.0A	08/16/11	1228148
		Dilution Factor: 1	Analysis Time..: 12:56		
Sulfate		Work Order #: MLXX31AC	LCS Lot-Sample#: F1H160000-149		
	95	(90 - 110)	MCAWW 300.0A	08/16/11	1228149
		Dilution Factor: 1	Analysis Time..: 12:56		
Total Alkalinity		Work Order #: MLX1P1AC	LCS Lot-Sample#: F1H230000-125		
	94	(90 - 110)	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLX1P1AD	LCS Lot-Sample#: F1H230000-125		
	94	(90 - 110)	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLQ6P1AC	LCS Lot-Sample#: F1H170000-114		
	98	(90 - 113)	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H160430 Work Order #...: MLLN71CF-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-007 MLLN71CG-MSD
Date Sampled...: 08/11/11 10:15 Date Received..: 08/12/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 09:20
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	101	(70 - 130)			SW846 8260B
	103	(70 - 130)	2.4	(0-20)	SW846 8260B
Dibromochloromethane	104	(60 - 135)			SW846 8260B
	102	(60 - 135)	1.6	(0-20)	SW846 8260B
Vinyl chloride	93	(50 - 145)			SW846 8260B
	96	(50 - 145)	2.4	(0-20)	SW846 8260B
Bromomethane	107	(30 - 145)			SW846 8260B
	102	(30 - 145)	5.0	(0-20)	SW846 8260B
Chloroethane	100	(60 - 135)			SW846 8260B
	97	(60 - 135)	3.2	(0-20)	SW846 8260B
Acetone	111	(40 - 140)			SW846 8260B
	95	(40 - 140)	15	(0-20)	SW846 8260B
1,1-Dichloroethene	107	(70 - 130)			SW846 8260B
	96	(70 - 130)	11	(0-20)	SW846 8260B
Methylene chloride	133	(55 - 140)			SW846 8260B
	135	(55 - 140)	1.7	(0-20)	SW846 8260B
Carbon disulfide	97	(35 - 160)			SW846 8260B
	86	(35 - 160)	12	(0-20)	SW846 8260B
1,1-Dichloroethane	100	(70 - 135)			SW846 8260B
	95	(70 - 135)	4.6	(0-20)	SW846 8260B
2-Butanone	91	(30 - 150)			SW846 8260B
	97	(30 - 150)	6.4	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	100	(85 - 115)			SW846 8260B
	98	(85 - 115)	2.4	(0-20)	SW846 8260B
Chloroform	99	(65 - 135)			SW846 8260B
	94	(65 - 135)	5.1	(0-20)	SW846 8260B
1,1,1-Trichloroethane	108	(65 - 130)			SW846 8260B
	102	(65 - 130)	5.6	(0-20)	SW846 8260B
Carbon tetrachloride	108	(65 - 140)			SW846 8260B
	102	(65 - 140)	5.4	(0-20)	SW846 8260B
1,2-Dichloroethane	99	(70 - 130)			SW846 8260B
	100	(70 - 130)	0.19	(0-20)	SW846 8260B
Benzene	100	(80 - 120)			SW846 8260B
	98	(80 - 120)	2.2	(0-20)	SW846 8260B
Trichloroethene	93	(70 - 125)			SW846 8260B
	94	(70 - 125)	0.16	(0-20)	SW846 8260B
1,2-Dichloropropane	99	(75 - 125)			SW846 8260B
	98	(75 - 125)	0.89	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H160430 Work Order #...: MLLN71CF-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-007 MLLN71CG-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	103	(75 - 120)			SW846 8260B
	102	(75 - 120)	0.87	(0-20)	SW846 8260B
1,1,2-Trichloroethane	102	(75 - 125)			SW846 8260B
	97	(75 - 125)	5.2	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	107	(55 - 140)			SW846 8260B
	107	(55 - 140)	0.56	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	102	(75 - 120)	3.8	(0-20)	SW846 8260B
1,3-Dichlorobenzene	107	(75 - 125)			SW846 8260B
	105	(75 - 125)	2.2	(0-20)	SW846 8260B
1,4-Dichlorobenzene	100	(75 - 125)			SW846 8260B
	101	(75 - 125)	1.0	(0-20)	SW846 8260B
2-Hexanone	96	(55 - 130)			SW846 8260B
	91	(55 - 130)	5.8	(0-20)	SW846 8260B
4-Methyl-2-pentanone	96	(60 - 135)			SW846 8260B
	98	(60 - 135)	2.8	(0-20)	SW846 8260B
Chlorobenzene	100	(80 - 120)			SW846 8260B
	98	(80 - 120)	1.7	(0-20)	SW846 8260B
Bromoform	107	(70 - 130)			SW846 8260B
	111	(70 - 130)	3.0	(0-20)	SW846 8260B
Ethylbenzene	105	(75 - 125)			SW846 8260B
	104	(75 - 125)	1.2	(0-20)	SW846 8260B
Styrene	114	(65 - 135)			SW846 8260B
	110	(65 - 135)	3.6	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	97	(65 - 130)			SW846 8260B
	96	(65 - 130)	1.5	(0-20)	SW846 8260B
Tetrachloroethene	104	(45 - 150)			SW846 8260B
	101	(45 - 150)	2.3	(0-20)	SW846 8260B
1,2-Dichlorobenzene	104	(70 - 120)			SW846 8260B
	103	(70 - 120)	1.2	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
	102	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
	102	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)
	100	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes QC parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H160430-001 **Prep Batch #...:** 1229103							
Uranium	112	(80 - 120)			SW846 6020A	08/17-08/19/11	MLPER1A6
	112	(80 - 120)	0.11	(0-20)	SW846 6020A	08/17-08/19/11	MLPER1A7
		Dilution Factor: 1					
		Analysis Time..: 08:39					
MS Lot-Sample #: F1H160430-001 **Prep Batch #...:** 1229104							
Aluminum	108	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CD
	104	(80 - 120)	3.7	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CE
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Antimony	104	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1DA
	101	(80 - 120)	3.1	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1DC
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Arsenic	108	(80 - 120)			SW846 6010C	08/17-08/24/11	MLPER1A8
	105	(80 - 120)	2.7	(0-20)	SW846 6010C	08/17-08/24/11	MLPER1A9
		Dilution Factor: 1					
		Analysis Time..: 12:58					
Barium	104	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CF
	101	(80 - 120)	3.0	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CG
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Beryllium	108	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CH
	105	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CJ
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Cadmium	98	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CM
	95	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CN
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Calcium	180 N	(80 - 120)			SW846 6010C	08/17-08/23/11	MLPER1CK
	188 N	(80 - 120)	0.13	(0-20)	SW846 6010C	08/17-08/23/11	MLPER1CL
		Dilution Factor: 20					
		Analysis Time..: 13:30					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	97	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CR
	94	(80 - 120)	2.4	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CT
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Cobalt	95	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CP
	92	(80 - 120)	2.5	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CQ
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Copper	101	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CU
	98	(80 - 120)	3.6	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CV
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Iron	100	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CW
	97	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CX
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Lead	93	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C8
	92	(80 - 120)	2.1	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C9
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Magnesium	122 N	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C0
	105	(80 - 120)	1.2	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C1
		Dilution Factor: 5					
		Analysis Time..: 09:35					
Manganese	100	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C2
	98	(80 - 120)	2.6	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C3
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Nickel	94	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C6
	92	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C7
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Selenium	109	(80 - 120)			SW846 6010C	08/17-08/24/11	MLPER1DD
	106	(80 - 120)	2.9	(0-20)	SW846 6010C	08/17-08/24/11	MLPER1DE
		Dilution Factor: 1					
		Analysis Time..: 12:58					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	95	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CA
	92	(80 - 120)	2.6	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CC
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Sodium	130 N	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C4
	113	(80 - 120)	0.94	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C5
		Dilution Factor: 5					
		Analysis Time..: 09:35					
Strontium	109	(80 - 120)			SW846 6010C	08/17-08/23/11	MLPER1DF
	109	(80 - 120)	0.0	(0-20)	SW846 6010C	08/17-08/23/11	MLPER1DG
		Dilution Factor: 20					
		Analysis Time..: 13:30					
Thallium	92	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1DH
	89	(80 - 120)	2.8	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1DJ
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Vanadium	99	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1DK
	97	(80 - 120)	2.6	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1DL
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Zinc	113	(80 - 120)			SW846 6010C	08/17-08/24/11	MLPER1DM
	110	(80 - 120)	2.4	(0-20)	SW846 6010C	08/17-08/24/11	MLPER1DN
		Dilution Factor: 1					
		Analysis Time..: 12:58					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H160430 **Matrix.....:** WATER
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLPE81CG		MS Lot-Sample #: F1H160430-004	
	115 N	(90 - 110)	MCAWW 300.0A	08/16/11	1228144
		Dilution Factor: 100	Analysis Time..: 02:03		
Fluoride		Work Order #...: MLPE81CJ		MS Lot-Sample #: F1H160430-004	
	97	(90 - 110)	MCAWW 300.0A	08/16/11	1228145
		Dilution Factor: 1	Analysis Time..: 01:23		
Nitrate		Work Order #...: MLPE81CL		MS Lot-Sample #: F1H160430-004	
	92	(90 - 110)	MCAWW 300.0A	08/16/11	1228146
		Dilution Factor: 1	Analysis Time..: 01:23		
Nitrite		Work Order #...: MLPE81CN		MS Lot-Sample #: F1H160430-004	
	51 N	(90 - 110)	MCAWW 300.0A	08/16/11	1228147
		Dilution Factor: 10	Analysis Time..: 01:49		
Phosphate as P, Ortho		Work Order #...: MLPE81CQ		MS Lot-Sample #: F1H160430-004	
	104	(90 - 110)	MCAWW 300.0A	08/16/11	1228148
		Dilution Factor: 1	Analysis Time..: 01:23		
Sulfate		Work Order #...: MLPE81CT		MS Lot-Sample #: F1H160430-004	
	106	(90 - 110)	MCAWW 300.0A	08/16/11	1228149
		Dilution Factor: 5	Analysis Time..: 01:36		
Total Alkalinity		Work Order #...: MLPE41CG		MS Lot-Sample #: F1H160430-003	
	110	(80 - 120)	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H160430 **Work Order #...:** MLPE8-SMP MLPE8-DUP **Matrix.....:** WATER

Date Sampled...: 08/15/11 09:55 **Date Received..:** 08/16/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H160430-004		
	314	314	mg/L	0.011	(0-20)	MCAWW 300.0A	08/16/11	1228144
		Dilution Factor: 100				Analysis Time..: 02:03		
Fluoride						SD Lot-Sample #: F1H160430-004		
	1.0	1.0	mg/L	0.59	(0-20)	MCAWW 300.0A	08/16/11	1228145
		Dilution Factor: 1				Analysis Time..: 01:23		
Nitrate						SD Lot-Sample #: F1H160430-004		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/16/11	1228146
		Dilution Factor: 1				Analysis Time..: 01:23		
Nitrite						SD Lot-Sample #: F1H160430-004		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/16/11	1228147
		Dilution Factor: 10				Analysis Time..: 01:49		
Phosphate as P, Ortho						SD Lot-Sample #: F1H160430-004		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/16/11	1228148
		Dilution Factor: 1				Analysis Time..: 01:23		
Sulfate						SD Lot-Sample #: F1H160430-004		
	73.4	72.6	mg/L	1.2	(0-20)	MCAWW 300.0A	08/16/11	1228149
		Dilution Factor: 5				Analysis Time..: 01:36		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H160430 **Work Order #...:** MLLN1-SMP MLLN1-DUP **Matrix.....:** WATER

Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H120447-006		
	645	665	mg/L	3.1	(0-0.0)	MCAWW 160.1	08/17-08/22/11	1229114
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H160430 **Work Order #...:** MLPE4-SMP **Matrix.....:** WATER
MLPE4-DUP
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total	Alkalinity					SD Lot-Sample #:	F1H160430-003	
	234	236	mg/L	0.68	(0-20)	MCAWW 310.1	08/23/11	1235125
			Dilution Factor: 1			Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H160430-001
Work Order: MLPER
Matrix: WATER

Date Collected: 08/15/11 0840
Date Received: 08/16/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 73
Uranium 234	0.95		0.20	0.10	0.06	08/22/11	08/23/11
Uranium 235/236	0.012	U	0.023	0.100	0.031	08/22/11	08/23/11
Uranium 238	0.42		0.13	0.10	0.03	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H160430-002
Work Order: MLPE0
Matrix: WATER

Date Collected: 08/15/11 0955
Date Received: 08/16/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 49
Uranium 234	24.0		2.3	0.1	0.06	08/22/11	08/23/11
Uranium 235/236	1.20		0.31	0.10	0.08	08/22/11	08/23/11
Uranium 238	23.8		2.3	0.1	0.06	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001

Radiochemistry

Lab Sample ID: F1H160430-003
Work Order: MLPE4
Matrix: WATER

Date Collected: 08/15/11 0840
Date Received: 08/16/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 58
Uranium 234	0.98		0.23	0.10	0.03	08/22/11	08/23/11
Uranium 235/236	0.029	U	0.041	0.100	0.039	08/22/11	08/23/11
Uranium 238	0.48		0.16	0.10	0.06	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001

Radiochemistry

Lab Sample ID: F1H160430-004
Work Order: MLPE8
Matrix: WATER

Date Collected: 08/15/11 0955
Date Received: 08/16/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 57
Uranium 234	19.1		1.9	0.1	0.03	08/22/11	08/23/11
Uranium 235/236	1.02		0.26	0.10	0.07	08/22/11	08/23/11
Uranium 238	19.9		1.9	0.1	0.06	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H160430
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID / Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1234168		Yld % 93	F1H220000-168B
Uranium 234	0.019	U	0.027	0.100	0.041	08/22/11	08/23/11
Uranium 235/236	-0.0024	U	0.0048	0.100	0.043	08/22/11	08/23/11
Uranium 238	-0.0019	U	0.0038	0.100	0.035	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F1H160430
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ+/-)	% Yld	% Rec	QC Control Limits	Lab Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	A-01-R MOD			F1H220000-168C		
Uranium 234		3.26	3.09	0.40	91	95	(76 - 136)		
	Spk 2	3.27	3.11	0.41	86	95	(76 - 136)	0.8	%RPD
Uranium 238		3.39	3.39	0.43	91	100	(76 - 134)		
	Spk 2	3.39	3.23	0.42	86	95	(76 - 134)	5	%RPD
		Batch #:	1234168		Analysis Date:		08/23/11		

NOTE(S):F1H160430

Calculations are performed before rounding to avoid round-off error in calculated results

TestAmerica St. Louis

F1H160430

CLIENT ANALYSIS SUMMARY

Storage Loc: R274

Date Received: 2011-08-16

Analytical Due Date: 2011-08-24

Report Due Date: 2011-08-26

Project Manager: LMF

Quote #: 89251 SDG:

Project: Y40415 Guterl Steel

PO#: 697886 Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 6

Raport Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A04BMW706D0001 DISSOLVED			2011-08-15 / 840	MLPER	WATER

SAMPLE COMMENTS:

SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A04DMW710D0001 DISSOLVED			2011-08-15 / 956	MLPE0	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H160430

CLIENT ANALYSIS SUMMARY

Storage Loc: R274

Project Manager: LMF | Quote #: 89251 | SDG: | Date Received: 2011-08-16

Project: Y40415 | Guterl Steel | Analytical Due Date: 2011-08-24

PO#: 697886 | Report to: Kevin Cronin | Report Due Date: 2011-08-26

Client: 522706 | Shaw Environmental & Infrastructure Inc | #SMPS In LOT: 6 | Report Type: B Standard Report | EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A04BMW706D0001			2011-08-15 / 840	MLPE4	WATER

SAMPLE COMMENTS:

CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H160430

CLIENT ANALYSIS SUMMARY

Storage Loc: 2-56,R274

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc | #SMPS In LOT: 6

Date Received: 2011-08-16

Analytical Due Date: 2011-08-24

Report Due Date: 2011-08-26

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 5of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
4	A04DMW710D0001			2011-08-15 / 955	MLPE8	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H160430 CLIENT ANALYSIS SUMMARY

Storage Loc: 2-56,R274
Date Received: 2011-08-16
Analytical Due Date: 2011-08-24
Report Due Date: 2011-08-26
Report Type: B Standard Report
EDD Code: 00

Project Manager: LMF Quote #: 89251 SDG:
Project: Y40415 Gutert Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc #SMPS in LOT: 6

DoD QSM 4.1 please use 6020 for total uranium listead of 200.8

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
5	A04CMW711DD0001			2011-08-15 / 1200	MLPE9	WATER

SAMPLE COMMENTS:

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
6	TRIP BLANK #1			2011-08-15 / 0	MLPHA	WATER

SAMPLE COMMENTS:

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	

estAmerica St. Louis
715 Rider Trail North
th City, MO 63045
one 314.298.8566 fax 314.298.8757

cur 78

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/15/2011	COC No: 009
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
ncinnati, Ohio 45212	Calendar (C) or Work Days (W)			
13) 782-4700 Phone	TAT if different from Below _____			
13) 782-4807 FAX	☒ 2 weeks			SDG No.
oject Name: Former Guterl Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
D #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
4BMW706D0001 2XLP, 250P 2XLP, 250P	8/15/2011	0840	Grab	GW	10	X		X	X	X	X	X	X	X	3X40		500P		
4DMW710D0001	8/15/2011	0955	Grab	GW	10	X		X	X	X	X	X	X	X					
4CMW711DD0001	8/15/2011	1200	Grab	GW	4						X	X	X	X					
RIP BLANK #1	8/15/11	–			1									X	40mL				

706DD on label SW 8.16.11

eservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

ssible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

ecial Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Shaw E & I. Inc.	8/15/11	[signature]	BFLO	08-15-11 16:30
[signature]	BFLO	08-15-11 17:00	[signature]	TASL	8-16-11 0915

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F1H160430

TestAmerica St. Louis

CUR Form #: 0 7 8

CONDITION UPON RECEIPT FORM

Client: Shaw

Quote No: 89251

COC/RFA No: 009

Initiated By: SV Date: 8.16.11 Time: 0915

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: Y (N)

Shipping # (s):*

1. 4485 0258 4101
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Sample Temperature (s):**

1. 5
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/17/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. Y40415

Guterl Steel

Lot #: F1H170425

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 30, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H170425

This report contains the analytical results for the 13 samples received under chain of custody by TestAmerica in St. Louis on August 17, 2011. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1231041
Tertahydrofuran was removed from the initial calibration lowest point due to poor response. Isobutanol, n-Butanol, 2-Chloroethylvinyl ether, 4-Methyl-2-pentanone and 2-Hexanone were removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration. The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

The internal standard recoveries are within QC limits as compared to the IS limits set by the CCV for this 12 hour clock. However, the client requirement for DOD4.1 has the IS limits set to the mid-point of the ICAL as requested. The internal standard(s) recovery is outside the lower QC limit, indicating a potential positive bias. There were no target analytes associated with this internal standard observed above the reporting limit in the sample; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1H170425 (7): A03MW606D0001
F1H170425 (13): TRIP BLANK #2

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1229104
Strontium was observed in the CCB above the acceptable QC limit (>3X MDL). Associated samples which are either non-detect for the contaminant or exhibit concentrations greater than ten (10) times the concentrations observed in the CCB, do not require re-analysis.

Affected Samples:
F1H170425 (12): A04CMW711DD0001

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

The MS (MSD) recovery for calcium, magnesium, and sodium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:
F1H170425 (1): A03MW606D0001 DISSOLVED
F1H170425 (2): A03MW14D0001 DISSOLVED
F1H170425 (3): A03MW606DR0001 DISSOLVED
F1H170425 (4): A03MW15D0001 DISSOLVED
F1H170425 (5): A03MW17D0001 DISSOLVED
F1H170425 (6): A04CMW711DD0001 DISSOLVED
F1H170425 (7): A03MW606D0001
F1H170425 (8): A03MW14D0001
F1H170425 (9): A03MW606DR0001
F1H170425 (10): A03MW15D0001
F1H170425 (11): A03MW17D0001
F1H170425 (12): A04CMW711DD0001

Chloride (MCAWW 300.0A)

Batch: 1229091
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H170425 (7): A03MW606D0001
F1H170425 (8): A03MW14D0001
F1H170425 (9): A03MW606DR0001
F1H170425 (10): A03MW15D0001
F1H170425 (11): A03MW17D0001

Fluoride (MCAWW 300.0A)

Batch: 1329092
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H170425 (7): A03MW606D0001
F1H170425 (8): A03MW14D0001
F1H170425 (9): A03MW606DR0001
F1H170425 (10): A03MW15D0001

Nitrite (MCAWW 300.0A)

Batch: 1229094
The following samples were reported ND at dilution for Nitrite, due to a matrix interference with Chloride, which masked the Nitrite retention time in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for are attributed to matrix interference.

Affected Samples:
F1H170425 (7): A03MW606D0001
F1H170425 (8): A03MW14D0001
F1H170425 (9): A03MW606DR0001
F1H170425 (10): A03MW15D0001
F1H170425 (11): A03MW17D0001

Orthophosphate as P (MCAWW 300.0A)

Batch: 1229095
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H170425 (7): A03MW606D0001
F1H170425 (8): A03MW14D0001
F1H170425 (9): A03MW606DR0001
F1H170425 (10): A03MW15D0001
F1H170425 (11): A03MW17D0001

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)
There was insufficient sample provided to perform the sample duplicate, an LCS duplicate was used instead.

Affected Samples:
F1H170425 (1): A03MW606D0001 DISSOLVED
F1H170425 (2): A03MW14D0001 DISSOLVED
F1H170425 (3): A03MW606DR0001 DISSOLVED
F1H170425 (4): A03MW15D0001 DISSOLVED
F1H170425 (5): A03MW17D0001 DISSOLVED
F1H170425 (6): A04CMW711DD0001 DISSOLVED
F1H170425 (7): A03MW606D0001
F1H170425 (8): A03MW14D0001
F1H170425 (9): A03MW606DR0001
F1H170425 (10): A03MW15D0001
F1H170425 (11): A03MW17D0001
F1H170425 (12): A04CMW711DD0001

The Uranium samples have tracer recoveries below the 30% QC limit. The samples were re-extracted. The re-extracted samples results will be reported with this narrative.

Affected Samples:
F1H170425 (2): A03MW14D0001 DISSOLVED
F1H170425 (6): A04CMW711DD0001 DISSOLVED
F1H170425 (11): A03MW17D0001

The reporting limit for Uranium was not met due to reduced tracer recovery. The tracer recovery is within acceptance criteria. Analytical results are reported.

Affected Samples:
F1H170425 (3): A03MW606DR0001 DISSOLVED
F1H170425 (12): A04CMW711DD0001

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H170425

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H170425

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLQGL	001	A03MW606D0001 DISSOLVED	08/16/11	08:45
MLQG0	002	A03MW14D0001 DISSOLVED	08/16/11	09:15
MLQG2	003	A03MW606DR0001 DISSOLVED	08/15/11	09:55
MLQG8	004	A03MW15D0001 DISSOLVED	08/16/11	10:35
MLQG9	005	A03MW17D0001 DISSOLVED	08/16/11	13:00
MLQHA	006	A04CMW711DD0001 DISSOLVED	08/15/11	12:00
MLQHH	007	A03MW606D0001	08/16/11	08:45
MLQJK	008	A03MW14D0001	08/16/11	09:15
MLQJL	009	A03MW606DR0001	08/15/11	09:55
MLQJP	010	A03MW15D0001	08/16/11	10:35
MLQJQ	011	A03MW17D0001	08/16/11	13:00
MLQJR	012	A04CMW711DD0001	08/15/11	12:00
MLQJ3	013	TRIP BLANK #2	08/16/11	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-001 **Matrix.....:** WATER
Date Sampled...: 08/16/11 08:45 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**7.4**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQGL1A3**
		Dilution Factor: 1		Analysis Time..: 09:33		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AD
		Dilution Factor: 1		Analysis Time..: 20:01		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AE
		Dilution Factor: 1		Analysis Time..: 20:01		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQGL1AC
		Dilution Factor: 1		Analysis Time..: 13:56		
Barium	**155**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQGL1AF**
		Dilution Factor: 1		Analysis Time..: 20:01		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AG
		Dilution Factor: 1		Analysis Time..: 20:01		
Calcium	**44300**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQGL1AH**
		Dilution Factor: 5		Analysis Time..: 10:33		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AJ
		Dilution Factor: 1		Analysis Time..: 20:01		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AK
		Dilution Factor: 1		Analysis Time..: 20:01		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AL
		Dilution Factor: 1		Analysis Time..: 20:01		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AM
		Dilution Factor: 1		Analysis Time..: 20:01		
Iron	**1420**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQGL1AN**
		Dilution Factor: 1		Analysis Time..: 20:01		
Magnesium	**135000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQGL1AP**
		Dilution Factor: 5		Analysis Time..: 10:33		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-001 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**176**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQGL1AQ**
		Dilution Factor: 1		Analysis Time..: 20:01		
Sodium	**109000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQGL1AR**
		Dilution Factor: 5		Analysis Time..: 10:33		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AT
		Dilution Factor: 1		Analysis Time..: 20:01		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AU
		Dilution Factor: 1		Analysis Time..: 20:01		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AV
		Dilution Factor: 1		Analysis Time..: 20:01		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQGL1AW
		Dilution Factor: 1		Analysis Time..: 13:56		
Strontium	**213**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQGL1AX**
		Dilution Factor: 5		Analysis Time..: 10:33		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1A0
		Dilution Factor: 1		Analysis Time..: 20:01		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1A1
		Dilution Factor: 1		Analysis Time..: 20:01		
Zinc	**184**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQGL1A2**
		Dilution Factor: 1		Analysis Time..: 13:56		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-002 **Matrix.....:** WATER
Date Sampled...: 08/16/11 09:15 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**8.0**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQG01AE**
		Dilution Factor: 1		Analysis Time..: 09:39		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AJ
		Dilution Factor: 1		Analysis Time..: 20:07		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AK
		Dilution Factor: 1		Analysis Time..: 20:07		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG01AH
		Dilution Factor: 1		Analysis Time..: 14:02		
Barium	**151**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01AL**
		Dilution Factor: 1		Analysis Time..: 20:07		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AM
		Dilution Factor: 1		Analysis Time..: 20:07		
Calcium	**41900**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01AN**
		Dilution Factor: 5		Analysis Time..: 10:39		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AP
		Dilution Factor: 1		Analysis Time..: 20:07		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AQ
		Dilution Factor: 1		Analysis Time..: 20:07		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AR
		Dilution Factor: 1		Analysis Time..: 20:07		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AT
		Dilution Factor: 1		Analysis Time..: 20:07		
Iron	**1260**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01AU**
		Dilution Factor: 1		Analysis Time..: 20:07		
Magnesium	**144000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01AV**
		Dilution Factor: 5		Analysis Time..: 10:39		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-002 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**223**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01AW**
		Dilution Factor: 1		Analysis Time..: 20:07		
Sodium	**105000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01AX**
		Dilution Factor: 5		Analysis Time..: 10:39		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01A0
		Dilution Factor: 1		Analysis Time..: 20:07		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01A1
		Dilution Factor: 1		Analysis Time..: 20:07		
Antimony	**4.0 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01A2**
		Dilution Factor: 1		Analysis Time..: 20:07		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG01A3
		Dilution Factor: 1		Analysis Time..: 14:02		
Strontium	**193**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01A4**
		Dilution Factor: 5		Analysis Time..: 10:39		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AA
		Dilution Factor: 1		Analysis Time..: 20:07		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AC
		Dilution Factor: 1		Analysis Time..: 20:07		
Zinc	**264**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQG01AD**
		Dilution Factor: 1		Analysis Time..: 14:02		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606DR0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-003 **Matrix.....:** WATER
Date Sampled...: 08/15/11 09:55 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**12.4**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQG21AE**
		Dilution Factor: 1		Analysis Time..: 09:46		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AJ
		Dilution Factor: 1		Analysis Time..: 20:14		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AK
		Dilution Factor: 1		Analysis Time..: 20:14		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG21AH
		Dilution Factor: 1		Analysis Time..: 14:09		
Barium	**75.4**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG21AL**
		Dilution Factor: 1		Analysis Time..: 20:14		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AM
		Dilution Factor: 1		Analysis Time..: 20:14		
Calcium	**138000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG21AN**
		Dilution Factor: 5		Analysis Time..: 10:45		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AP
		Dilution Factor: 1		Analysis Time..: 20:14		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AQ
		Dilution Factor: 1		Analysis Time..: 20:14		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AR
		Dilution Factor: 1		Analysis Time..: 20:14		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AT
		Dilution Factor: 1		Analysis Time..: 20:14		
Iron	**584**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG21AU**
		Dilution Factor: 1		Analysis Time..: 20:14		
Magnesium	**84300**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG21AV**
		Dilution Factor: 5		Analysis Time..: 10:45		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606DR0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**163**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG21AW**
		Dilution Factor: 1		Analysis Time..: 20:14		
Sodium	**200000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG21AX**
		Dilution Factor: 5		Analysis Time..: 10:45		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21A0
		Dilution Factor: 1		Analysis Time..: 20:14		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21A1
		Dilution Factor: 1		Analysis Time..: 20:14		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21A2
		Dilution Factor: 1		Analysis Time..: 20:14		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG21A3
		Dilution Factor: 1		Analysis Time..: 14:09		
Strontium	**1830**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG21A4**
		Dilution Factor: 5		Analysis Time..: 10:45		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AA
		Dilution Factor: 1		Analysis Time..: 20:14		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AC
		Dilution Factor: 1		Analysis Time..: 20:14		
Zinc	**13.3 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQG21AD**
		Dilution Factor: 1		Analysis Time..: 14:09		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW15D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-004 **Matrix.....:** WATER
Date Sampled...: 08/16/11 10:35 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**1.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQG81AE**
		Dilution Factor: 1		Analysis Time..: 09:53		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AJ
		Dilution Factor: 1		Analysis Time..: 20:20		
Aluminum	**121 J**	**200**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG81AK**
		Dilution Factor: 1		Analysis Time..: 20:20		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG81AH
		Dilution Factor: 1		Analysis Time..: 14:15		
Barium	**23.0 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG81AL**
		Dilution Factor: 1		Analysis Time..: 20:20		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AM
		Dilution Factor: 1		Analysis Time..: 20:20		
Calcium	**6410**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG81AN**
		Dilution Factor: 5		Analysis Time..: 10:52		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AP
		Dilution Factor: 1		Analysis Time..: 20:20		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AQ
		Dilution Factor: 1		Analysis Time..: 20:20		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AR
		Dilution Factor: 1		Analysis Time..: 20:20		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AT
		Dilution Factor: 1		Analysis Time..: 20:20		
Iron	**36.3 J**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG81AU**
		Dilution Factor: 1		Analysis Time..: 20:20		
Magnesium	**1290**	**1000**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLQG81AV**
		Dilution Factor: 1		Analysis Time..: 12:58		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW15D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	ND	15.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AW
		Dilution Factor: 1		Analysis Time..: 20:20		
Sodium	**151000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG81AX**
		Dilution Factor: 5		Analysis Time..: 10:52		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81A0
		Dilution Factor: 1		Analysis Time..: 20:20		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81A1
		Dilution Factor: 1		Analysis Time..: 20:20		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81A2
		Dilution Factor: 1		Analysis Time..: 20:20		
Selenium	**16.2**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQG81A3**
		Dilution Factor: 1		Analysis Time..: 14:15		
Strontium	**61.8**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG81A4**
		Dilution Factor: 5		Analysis Time..: 10:52		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AA
		Dilution Factor: 1		Analysis Time..: 20:20		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AC
		Dilution Factor: 1		Analysis Time..: 20:20		
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG81AD
		Dilution Factor: 1		Analysis Time..: 14:15		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW17D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-005 Matrix.....: WATER
Date Sampled...: 08/16/11 13:00 Date Received..: 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	8.3	1.0	ug/L	SW846 6020A	08/17-08/19/11	MLQG91AE
		Dilution Factor: 1		Analysis Time..: 09:59		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AJ
		Dilution Factor: 1		Analysis Time..: 20:27		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AK
		Dilution Factor: 1		Analysis Time..: 20:27		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG91AH
		Dilution Factor: 1		Analysis Time..: 14:22		
Barium	80.8	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AL
		Dilution Factor: 1		Analysis Time..: 20:27		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AM
		Dilution Factor: 1		Analysis Time..: 20:27		
Calcium	69400	5000	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AN
		Dilution Factor: 5		Analysis Time..: 10:58		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AP
		Dilution Factor: 1		Analysis Time..: 20:27		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AQ
		Dilution Factor: 1		Analysis Time..: 20:27		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AR
		Dilution Factor: 1		Analysis Time..: 20:27		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AT
		Dilution Factor: 1		Analysis Time..: 20:27		
Iron	293	100	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AU
		Dilution Factor: 1		Analysis Time..: 20:27		
Magnesium	20500	1000	ug/L	SW846 6010C	08/17-08/23/11	MLQG91AV
		Dilution Factor: 1		Analysis Time..: 13:05		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW17D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-005 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**11.0 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG91AW**
		Dilution Factor: 1		Analysis Time..: 20:27		
Sodium	**314000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG91AX**
		Dilution Factor: 5		Analysis Time..: 10:58		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91A0
		Dilution Factor: 1		Analysis Time..: 20:27		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91A1
		Dilution Factor: 1		Analysis Time..: 20:27		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91A2
		Dilution Factor: 1		Analysis Time..: 20:27		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG91A3
		Dilution Factor: 1		Analysis Time..: 14:22		
Strontium	**316**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG91A4**
		Dilution Factor: 5		Analysis Time..: 10:58		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AA
		Dilution Factor: 1		Analysis Time..: 20:27		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AC
		Dilution Factor: 1		Analysis Time..: 20:27		
Zinc	**17.8 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQG91AD**
		Dilution Factor: 1		Analysis Time..: 14:22		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-006 **Matrix.....:** WATER
Date Sampled...: 08/15/11 12:00 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**2.9**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQHA1AE**
		Dilution Factor: 1		Analysis Time..: 10:06		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AJ
		Dilution Factor: 1		Analysis Time..: 20:33		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AK
		Dilution Factor: 1		Analysis Time..: 20:33		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQHA1AH
		Dilution Factor: 1		Analysis Time..: 14:28		
Barium	**32.0 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHA1AL**
		Dilution Factor: 1		Analysis Time..: 20:33		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AM
		Dilution Factor: 1		Analysis Time..: 20:33		
Calcium	**483000**	**20000**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQHA1AN**
		Dilution Factor: 20		Analysis Time..: 10:24		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AP
		Dilution Factor: 1		Analysis Time..: 20:33		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AQ
		Dilution Factor: 1		Analysis Time..: 20:33		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AR
		Dilution Factor: 1		Analysis Time..: 20:33		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AT
		Dilution Factor: 1		Analysis Time..: 20:33		
Iron	ND	100	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AU
		Dilution Factor: 1		Analysis Time..: 20:33		
Magnesium	**238000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHA1AV**
		Dilution Factor: 5		Analysis Time..: 11:04		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-006 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**6.2 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHA1AW**
		Dilution Factor: 1		Analysis Time..: 20:33		
Sodium	**733000**	**20000**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQHA1AX**
		Dilution Factor: 20		Analysis Time..: 10:24		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1A0
		Dilution Factor: 1		Analysis Time..: 20:33		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1A1
		Dilution Factor: 1		Analysis Time..: 20:33		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1A2
		Dilution Factor: 1		Analysis Time..: 20:33		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQHA1A3
		Dilution Factor: 1		Analysis Time..: 14:28		
Strontium	**8640**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQHA1A4**
		Dilution Factor: 20		Analysis Time..: 10:24		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AA
		Dilution Factor: 1		Analysis Time..: 20:33		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AC
		Dilution Factor: 1		Analysis Time..: 20:33		
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLQHA1AD
		Dilution Factor: 1		Analysis Time..: 14:28		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001

GC/MS Volatiles

Lot-Sample #...: F1H170425-007 **Work Order #...:** MLQHH1AC **Matrix.....:** WATER
Date Sampled...: 08/16/11 08:45 **Date Received..:** 08/17/11
Prep Date.....: 08/19/11 **Analysis Date..:** 08/19/11
Prep Batch #...: 1231041 **Analysis Time..:** 15:06
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.51 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001

GC/MS Volatiles

Lot-Sample #...: F1H170425-007 Work Order #...: MLQHH1AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	112	(70 - 120)
4-Bromofluorobenzene	104	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001

TOTAL Metals

Lot-Sample #...: F1H170425-007 **Matrix.....:** WATER
Date Sampled...: 08/16/11 08:45 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**7.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQHH1A5**
		Dilution Factor: 1		Analysis Time..: 10:13		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AF
		Dilution Factor: 1		Analysis Time..: 20:40		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AG
		Dilution Factor: 1		Analysis Time..: 20:40		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQHH1AE
		Dilution Factor: 1		Analysis Time..: 14:34		
Barium	**158**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHH1AH**
		Dilution Factor: 1		Analysis Time..: 20:40		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AJ
		Dilution Factor: 1		Analysis Time..: 20:40		
Calcium	**45300**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHH1AK**
		Dilution Factor: 5		Analysis Time..: 11:10		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AL
		Dilution Factor: 1		Analysis Time..: 20:40		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AM
		Dilution Factor: 1		Analysis Time..: 20:40		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AN
		Dilution Factor: 1		Analysis Time..: 20:40		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AP
		Dilution Factor: 1		Analysis Time..: 20:40		
Iron	**1570**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHH1AQ**
		Dilution Factor: 1		Analysis Time..: 20:40		
Magnesium	**135000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHH1AR**
		Dilution Factor: 5		Analysis Time..: 11:10		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001

TOTAL Metals

Lot-Sample #...: F1H170425-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**177**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHH1AT**
		Dilution Factor: 1		Analysis Time..: 20:40		
Sodium	**109000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHH1AU**
		Dilution Factor: 5		Analysis Time..: 11:10		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AV
		Dilution Factor: 1		Analysis Time..: 20:40		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AW
		Dilution Factor: 1		Analysis Time..: 20:40		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AX
		Dilution Factor: 1		Analysis Time..: 20:40		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQHH1A0
		Dilution Factor: 1		Analysis Time..: 14:34		
Strontium	**240**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHH1A1**
		Dilution Factor: 5		Analysis Time..: 11:10		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1A2
		Dilution Factor: 1		Analysis Time..: 20:40		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1A3
		Dilution Factor: 1		Analysis Time..: 20:40		
Zinc	**269**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQHH1A4**
		Dilution Factor: 1		Analysis Time..: 14:34		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001

General Chemistry

Lot-Sample #...: F1H170425-007 Work Order #...: MLQHH Matrix.....: WATER
Date Sampled...: 08/16/11 08:45 Date Received..: 08/17/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	69.3	20.0	mg/L	MCAWW 300.0A	08/17/11	1229091
		Dilution Factor: 100		Analysis Time..: 06:59		
Fluoride	14.6	1.0	mg/L	MCAWW 300.0A	08/17/11	1229092
		Dilution Factor: 10		Analysis Time..: 06:46		
Nitrate	0.014 B	0.020	mg/L	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1		Analysis Time..: 06:19		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/17/11	1229094
		Dilution Factor: 10		Analysis Time..: 06:46		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1		Analysis Time..: 06:19		
Sulfate	35.2	2.5	mg/L	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 5		Analysis Time..: 06:32		
Total Alkalinity	688	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	848	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001

TOTAL Metals

Lot-Sample #...: F1H170425-008 **Matrix.....:** WATER
Date Sampled...: 08/16/11 09:15 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**8.0**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQJK1AG**
		Dilution Factor: 1		Analysis Time..: 10:19		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1AR
		Dilution Factor: 1		Analysis Time..: 20:46		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1AT
		Dilution Factor: 1		Analysis Time..: 20:46		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJK1AQ
		Dilution Factor: 1		Analysis Time..: 14:41		
Barium	**152**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJK1AU**
		Dilution Factor: 1		Analysis Time..: 20:46		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1AV
		Dilution Factor: 1		Analysis Time..: 20:46		
Calcium	**39300**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJK1AW**
		Dilution Factor: 5		Analysis Time..: 11:17		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1AX
		Dilution Factor: 1		Analysis Time..: 20:46		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1A0
		Dilution Factor: 1		Analysis Time..: 20:46		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1A1
		Dilution Factor: 1		Analysis Time..: 20:46		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1A2
		Dilution Factor: 1		Analysis Time..: 20:46		
Iron	**1610**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJK1A3**
		Dilution Factor: 1		Analysis Time..: 20:46		
Magnesium	**136000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJK1A4**
		Dilution Factor: 5		Analysis Time..: 11:17		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001

TOTAL Metals

Lot-Sample #...: F1H170425-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**224**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJK1A5**
		Dilution Factor: 1		Analysis Time..: 20:46		
Sodium	**98000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJK1A6**
		Dilution Factor: 5		Analysis Time..: 11:17		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1A7
		Dilution Factor: 1		Analysis Time..: 20:46		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1A8
		Dilution Factor: 1		Analysis Time..: 20:46		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1A9
		Dilution Factor: 1		Analysis Time..: 20:46		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJK1AA
		Dilution Factor: 1		Analysis Time..: 14:41		
Strontium	**182**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJK1AC**
		Dilution Factor: 5		Analysis Time..: 11:17		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1AD
		Dilution Factor: 1		Analysis Time..: 20:46		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1AE
		Dilution Factor: 1		Analysis Time..: 20:46		
Zinc	**273**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQJK1AF**
		Dilution Factor: 1		Analysis Time..: 14:41		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001

General Chemistry

Lot-Sample #...: F1H170425-008 Work Order #...: MLQJK Matrix.....: WATER
Date Sampled...: 08/16/11 09:15 Date Received..: 08/17/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	60.1	20.0	mg/L	MCAWW 300.0A	08/17/11	1229091
		Dilution Factor: 100		Analysis Time..: 10:07		
Fluoride	15.6	1.0	mg/L	MCAWW 300.0A	08/17/11	1229092
		Dilution Factor: 10		Analysis Time..: 09:54		
Nitrate	0.046	0.020	mg/L	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1		Analysis Time..: 09:27		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/17/11	1229094
		Dilution Factor: 10		Analysis Time..: 09:54		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1		Analysis Time..: 09:27		
Sulfate	33.1	2.5	mg/L	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 5		Analysis Time..: 09:40		
Total Alkalinity	698	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	833	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606DR0001

TOTAL Metals

Lot-Sample #...: F1H170425-009 **Matrix.....:** WATER
Date Sampled...: 08/15/11 09:55 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**12.8**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQJL1AT**
		Dilution Factor: 1		Analysis Time..: 10:26		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1A3
		Dilution Factor: 1		Analysis Time..: 20:53		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1A4
		Dilution Factor: 1		Analysis Time..: 20:53		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJL1A2
		Dilution Factor: 1		Analysis Time..: 15:00		
Barium	**74.4**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJL1A5**
		Dilution Factor: 1		Analysis Time..: 20:53		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1A6
		Dilution Factor: 1		Analysis Time..: 20:53		
Calcium	**134000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJL1A7**
		Dilution Factor: 5		Analysis Time..: 11:23		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1A8
		Dilution Factor: 1		Analysis Time..: 20:53		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AA
		Dilution Factor: 1		Analysis Time..: 20:53		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AC
		Dilution Factor: 1		Analysis Time..: 20:53		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AD
		Dilution Factor: 1		Analysis Time..: 20:53		
Iron	**727**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJL1AE**
		Dilution Factor: 1		Analysis Time..: 20:53		
Magnesium	**83000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJL1AF**
		Dilution Factor: 5		Analysis Time..: 11:23		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606DR0001

TOTAL Metals

Lot-Sample #...: F1H170425-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**170**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJL1AG**
		Dilution Factor: 1		Analysis Time..: 20:53		
Sodium	**197000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJL1AH**
		Dilution Factor: 5		Analysis Time..: 11:23		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AJ
		Dilution Factor: 1		Analysis Time..: 20:53		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AK
		Dilution Factor: 1		Analysis Time..: 20:53		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AL
		Dilution Factor: 1		Analysis Time..: 20:53		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJL1AM
		Dilution Factor: 1		Analysis Time..: 15:00		
Strontium	**1740**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJL1AN**
		Dilution Factor: 5		Analysis Time..: 11:23		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AP
		Dilution Factor: 1		Analysis Time..: 20:53		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AQ
		Dilution Factor: 1		Analysis Time..: 20:53		
Zinc	**61.0**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQJL1AR**
		Dilution Factor: 1		Analysis Time..: 15:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606DR0001

General Chemistry

Lot-Sample #...: F1H170425-009 Work Order #...: MLQJL Matrix.....: WATER
Date Sampled...: 08/15/11 09:55 Date Received..: 08/17/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	326	20.0	mg/L	MCAWW 300.0A	08/17/11	1229091
		Dilution Factor: 100		Analysis Time..: 11:01		
Fluoride	6.6	0.50	mg/L	MCAWW 300.0A	08/17/11	1229092
		Dilution Factor: 5		Analysis Time..: 10:34		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1		Analysis Time..: 10:21		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/17/11	1229094
		Dilution Factor: 10		Analysis Time..: 10:47		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1		Analysis Time..: 10:21		
Sulfate	96.1	5.0	mg/L	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 10		Analysis Time..: 10:47		
Total Alkalinity	405	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1200	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW15D0001

TOTAL Metals

Lot-Sample #...: F1H170425-010 **Matrix.....:** WATER
Date Sampled...: 08/16/11 10:35 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**2.0**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQJP1A5**
		Dilution Factor: 1		Analysis Time..: 10:33		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1AE
		Dilution Factor: 1		Analysis Time..: 20:59		
Aluminum	**313**	**200**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AF**
		Dilution Factor: 1		Analysis Time..: 20:59		
Arsenic	**6.0 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQJP1AD**
		Dilution Factor: 1		Analysis Time..: 15:07		
Barium	**26.8 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AG**
		Dilution Factor: 1		Analysis Time..: 20:59		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1AH
		Dilution Factor: 1		Analysis Time..: 20:59		
Calcium	**7090**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AJ**
		Dilution Factor: 5		Analysis Time..: 11:29		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1AK
		Dilution Factor: 1		Analysis Time..: 20:59		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1AM
		Dilution Factor: 1		Analysis Time..: 20:59		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1AN
		Dilution Factor: 1		Analysis Time..: 20:59		
Copper	**7.4 J**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AP**
		Dilution Factor: 1		Analysis Time..: 20:59		
Iron	**283**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AQ**
		Dilution Factor: 1		Analysis Time..: 20:59		
Magnesium	**2000**	**1000**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLQJP1AR**
		Dilution Factor: 1		Analysis Time..: 13:11		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW15D0001

TOTAL Metals

Lot-Sample #...: F1H170425-010 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**3.8 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AT**
		Dilution Factor: 1		Analysis Time..: 20:59		
Sodium	**143000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AU**
		Dilution Factor: 5		Analysis Time..: 11:29		
Nickel	**14.7 J**	**40.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AV**
		Dilution Factor: 1		Analysis Time..: 20:59		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1AW
		Dilution Factor: 1		Analysis Time..: 20:59		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1AX
		Dilution Factor: 1		Analysis Time..: 20:59		
Selenium	**11.2 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQJP1A0**
		Dilution Factor: 1		Analysis Time..: 15:07		
Strontium	**59.0**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1A1**
		Dilution Factor: 5		Analysis Time..: 11:29		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1A2
		Dilution Factor: 1		Analysis Time..: 20:59		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1A3
		Dilution Factor: 1		Analysis Time..: 20:59		
Zinc	**18.3 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQJP1A4**
		Dilution Factor: 1		Analysis Time..: 15:07		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW15D0001

General Chemistry

Lot-Sample #...: F1H170425-010 Work Order #...: MLQJP Matrix.....: WATER
Date Sampled...: 08/16/11 10:35 Date Received..: 08/17/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	79.9	20.0	mg/L	MCAWW 300.0A	08/18/11	1229091
		Dilution Factor: 100		Analysis Time..: 12:21		
Fluoride	13.6	1.0	mg/L	MCAWW 300.0A	08/18/11	1229092
		Dilution Factor: 10		Analysis Time..: 12:08		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1		Analysis Time..: 11:41		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/18/11	1229094
		Dilution Factor: 10		Analysis Time..: 12:08		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1		Analysis Time..: 11:41		
Sulfate	39.6	2.5	mg/L	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 5		Analysis Time..: 11:55		
Total Alkalinity	129	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	405	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW17D0001

TOTAL Metals

Lot-Sample #...: F1H170425-011 Matrix.....: WATER
Date Sampled...: 08/16/11 13:00 Date Received..: 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	8.5	1.0	ug/L	SW846 6020A	08/17-08/19/11	MLQJQ1A5
		Dilution Factor: 1		Analysis Time..: 10:53		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AE
		Dilution Factor: 1		Analysis Time..: 21:18		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AF
		Dilution Factor: 1		Analysis Time..: 21:18		
Arsenic	3.4 J	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJQ1AD
		Dilution Factor: 1		Analysis Time..: 15:13		
Barium	78.8	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AG
		Dilution Factor: 1		Analysis Time..: 21:18		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AH
		Dilution Factor: 1		Analysis Time..: 21:18		
Calcium	66400	5000	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AJ
		Dilution Factor: 5		Analysis Time..: 11:48		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AK
		Dilution Factor: 1		Analysis Time..: 21:18		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AM
		Dilution Factor: 1		Analysis Time..: 21:18		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AN
		Dilution Factor: 1		Analysis Time..: 21:18		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AP
		Dilution Factor: 1		Analysis Time..: 21:18		
Iron	1050	100	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AQ
		Dilution Factor: 1		Analysis Time..: 21:18		
Magnesium	20300	1000	ug/L	SW846 6010C	08/17-08/23/11	MLQJQ1AR
		Dilution Factor: 1		Analysis Time..: 13:17		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW17D0001

TOTAL Metals

Lot-Sample #...: F1H170425-011 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**11.2 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJQ1AT**
		Dilution Factor: 1		Analysis Time..: 21:18		
Sodium	**301000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJQ1AU**
		Dilution Factor: 5		Analysis Time..: 11:48		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AV
		Dilution Factor: 1		Analysis Time..: 21:18		
Lead	**1.6 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJQ1AW**
		Dilution Factor: 1		Analysis Time..: 21:18		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AX
		Dilution Factor: 1		Analysis Time..: 21:18		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJQ1A0
		Dilution Factor: 1		Analysis Time..: 15:13		
Strontium	**311**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJQ1A1**
		Dilution Factor: 5		Analysis Time..: 11:48		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1A2
		Dilution Factor: 1		Analysis Time..: 21:18		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1A3
		Dilution Factor: 1		Analysis Time..: 21:18		
Zinc	**17.2 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQJQ1A4**
		Dilution Factor: 1		Analysis Time..: 15:13		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW17D0001

General Chemistry

Lot-Sample #...: F1H170425-011 Work Order #...: MLQJQ Matrix.....: WATER
Date Sampled...: 08/16/11 13:00 Date Received..: 08/17/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	251	20.0	mg/L	MCAWW 300.0A	08/18/11	1229091
		Dilution Factor: 100		Analysis Time..: 01:15		
Fluoride	0.19	0.10	mg/L	MCAWW 300.0A	08/18/11	1229092
		Dilution Factor: 1		Analysis Time..: 12:35		
Nitrate	0.10	0.020	mg/L	MCAWW 300.0A	08/18/11	1229093
		Dilution Factor: 1		Analysis Time..: 12:35		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/18/11	1229094
		Dilution Factor: 10		Analysis Time..: 01:02		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/18/11	1229095
		Dilution Factor: 1		Analysis Time..: 12:35		
Sulfate	69.1	2.5	mg/L	MCAWW 300.0A	08/18/11	1229096
		Dilution Factor: 5		Analysis Time..: 12:48		
Total Alkalinity	410	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	975	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001

TOTAL Metals

Lot-Sample #...: F1H170425-012 **Matrix.....:** WATER
Date Sampled...: 08/15/11 12:00 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**1.7**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQJR1A3**
		Dilution Factor: 1		Analysis Time..: 10:59		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AD
		Dilution Factor: 1		Analysis Time..: 21:25		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AE
		Dilution Factor: 1		Analysis Time..: 21:25		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJR1AC
		Dilution Factor: 1		Analysis Time..: 15:20		
Barium	**39.4 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJR1AF**
		Dilution Factor: 1		Analysis Time..: 21:25		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AG
		Dilution Factor: 1		Analysis Time..: 21:25		
Calcium	**455000**	**20000**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLQJR1AH**
		Dilution Factor: 20		Analysis Time..: 14:15		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AJ
		Dilution Factor: 1		Analysis Time..: 21:25		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AK
		Dilution Factor: 1		Analysis Time..: 21:25		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AL
		Dilution Factor: 1		Analysis Time..: 21:25		
Copper	**7.6 J**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJR1AM**
		Dilution Factor: 1		Analysis Time..: 21:25		
Iron	**81.0 J**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJR1AN**
		Dilution Factor: 1		Analysis Time..: 21:25		
Magnesium	**225000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJR1AP**
		Dilution Factor: 5		Analysis Time..: 11:55		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001

TOTAL Metals

Lot-Sample #...: F1H170425-012 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**11.7 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJR1AQ**
		Dilution Factor: 1		Analysis Time..: 21:25		
Sodium	**673000**	**20000**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLQJR1AR**
		Dilution Factor: 20		Analysis Time..: 14:15		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AT
		Dilution Factor: 1		Analysis Time..: 21:25		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AU
		Dilution Factor: 1		Analysis Time..: 21:25		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AV
		Dilution Factor: 1		Analysis Time..: 21:25		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJR1AW
		Dilution Factor: 1		Analysis Time..: 15:20		
Strontium	**7690**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLQJR1AX**
		Dilution Factor: 20		Analysis Time..: 14:15		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1A0
		Dilution Factor: 1		Analysis Time..: 21:25		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1A1
		Dilution Factor: 1		Analysis Time..: 21:25		
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJR1A2
		Dilution Factor: 1		Analysis Time..: 15:20		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #2

GC/MS Volatiles

Lot-Sample #...: F1H170425-013 Work Order #...: MLQJ31AA Matrix.....: WATER
Date Sampled...: 08/16/11 Date Received..: 08/17/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 11:05
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**3.1**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #2

GC/MS Volatiles

Lot-Sample #...: F1H170425-013 Work Order #...: MLQJ31AA Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H170425 **Work Order #...:** MLTXM1AA **Matrix.....:** WATER
MB Lot-Sample #: F1H190000-041

Prep Date.....: 08/19/11 **Analysis Time..:** 05:48
Analysis Date..: 08/19/11 **Prep Batch #...:** 1231041
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	106	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H170425 Work Order #...: MLTXM1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	103	(70 - 120)		
4-Bromofluorobenzene	103	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H170425 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H170000-103 **Prep Batch #...:** 1229103						
Uranium	ND	1.0	ug/L	SW846 6020A	08/17-08/19/11	MLQNA1AA
		Dilution Factor: 1				
		Analysis Time..: 08:13				
MB Lot-Sample #: F1H170000-104 **Prep Batch #...:** 1229104						
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AD
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AU
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQNE1AA
		Dilution Factor: 1				
		Analysis Time..: 12:39				
Barium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AE
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AF
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AH
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Calcium	ND	1000	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AG
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AK
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AJ
		Dilution Factor: 1				
		Analysis Time..: 18:44				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H170425 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AL
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Iron	ND	100	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AM
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AT
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Magnesium	ND	1000	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AN
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Manganese	ND	15.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AP
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AR
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQNE1AV
		Dilution Factor: 1				
		Analysis Time..: 12:39				
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AC
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Sodium	ND	1000	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AQ
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Strontium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AW
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AX
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1A0
		Dilution Factor: 1				
		Analysis Time..: 18:44				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H170425 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLQNE1A1

Dilution Factor: 1
Analysis Time..: 12:39

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H170425 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLVHL1AA		MB Lot-Sample #:	F1H170000-091	
	ND	0.20	mg/L	MCAWW 300.0A	08/17/11	1229091
		Dilution Factor: 1				
		Analysis Time..: 06:06				
Fluoride		Work Order #: MLVHM1AA		MB Lot-Sample #:	F1H170000-092	
	ND	0.10	mg/L	MCAWW 300.0A	08/17/11	1229092
		Dilution Factor: 1				
		Analysis Time..: 06:06				
Nitrate		Work Order #: MLVHN1AA		MB Lot-Sample #:	F1H170000-093	
	ND	0.020	mg/L	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1				
		Analysis Time..: 06:06				
Nitrite		Work Order #: MLVHP1AA		MB Lot-Sample #:	F1H170000-094	
	ND	0.020	mg/L	MCAWW 300.0A	08/17/11	1229094
		Dilution Factor: 1				
		Analysis Time..: 06:06				
Phosphate as P, Ortho		Work Order #: MLVHQ1AA		MB Lot-Sample #:	F1H170000-095	
	ND	0.50	mg/L	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1				
		Analysis Time..: 06:06				
Sulfate		Work Order #: MLVHR1AA		MB Lot-Sample #:	F1H170000-096	
	ND	0.50	mg/L	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 1				
		Analysis Time..: 06:06				
Total Alkalinity		Work Order #: MLX1P1AA		MB Lot-Sample #:	F1H230000-125	
	ND	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLQ6P1AA		MB Lot-Sample #:	F1H170000-114	
	ND	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H170425 Work Order #...: MLTXM1AC Matrix.....: WATER
LCS Lot-Sample#: F1H190000-041
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 04:55
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Styrene	110	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	101	(65 - 130)	SW846 8260B
Tetrachloroethene	101	(45 - 150)	SW846 8260B
1,2-Dichlorobenzene	100	(70 - 120)	SW846 8260B
cis-1,3-Dichloropropene	106	(70 - 130)	SW846 8260B
Dibromochloromethane	103	(60 - 135)	SW846 8260B
Vinyl chloride	83	(50 - 145)	SW846 8260B
Bromomethane	101	(30 - 145)	SW846 8260B
Chloroethane	90	(60 - 135)	SW846 8260B
Acetone	93	(40 - 140)	SW846 8260B
1,1-Dichloroethene	99	(70 - 130)	SW846 8260B
Methylene chloride	92	(55 - 140)	SW846 8260B
Carbon disulfide	90	(35 - 160)	SW846 8260B
1,1-Dichloroethane	94	(70 - 135)	SW846 8260B
2-Butanone	101	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	97	(85 - 115)	SW846 8260B
Chloroform	94	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	100	(65 - 130)	SW846 8260B
Carbon tetrachloride	100	(65 - 140)	SW846 8260B
1,2-Dichloroethane	96	(70 - 130)	SW846 8260B
Benzene	95	(80 - 120)	SW846 8260B
Trichloroethene	91	(70 - 125)	SW846 8260B
1,2-Dichloropropane	95	(75 - 125)	SW846 8260B
Bromodichloromethane	100	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	96	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	106	(55 - 140)	SW846 8260B
Toluene	104	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	103	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	99	(75 - 125)	SW846 8260B
2-Hexanone	96	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	108	(60 - 135)	SW846 8260B
Chlorobenzene	95	(80 - 120)	SW846 8260B
Bromoform	109	(70 - 130)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H170425 **Work Order #...:** MLTXM1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H190000-041

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Ethylbenzene	**102**	**(75 - 125)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H170425 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H170000-103 **Prep Batch #...:** 1229103					
Uranium	109	(80 - 120)	SW846 6020A	08/17-08/19/11	MLQNA1AC
		Dilution Factor: 1		Analysis Time..: 08:19	
LCS Lot-Sample#: F1H170000-104 **Prep Batch #...:** 1229104					
Arsenic	105	(80 - 120)	SW846 6010C	08/17-08/24/11	MLQNE1A2
		Dilution Factor: 1		Analysis Time..: 12:45	
Silver	93	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A3
		Dilution Factor: 1		Analysis Time..: 18:50	
Aluminum	106	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A4
		Dilution Factor: 1		Analysis Time..: 18:50	
Barium	104	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A5
		Dilution Factor: 1		Analysis Time..: 18:50	
Beryllium	112	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A6
		Dilution Factor: 1		Analysis Time..: 18:50	
Calcium	110	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A7
		Dilution Factor: 1		Analysis Time..: 09:23	
Cadmium	106	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A8
		Dilution Factor: 1		Analysis Time..: 18:50	
Cobalt	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A9
		Dilution Factor: 1		Analysis Time..: 18:50	
Chromium	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CA
		Dilution Factor: 1		Analysis Time..: 18:50	
Copper	100	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CC
		Dilution Factor: 1		Analysis Time..: 18:50	
Iron	106	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CD
		Dilution Factor: 1		Analysis Time..: 18:50	
Magnesium	101	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CE
		Dilution Factor: 1		Analysis Time..: 09:23	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H170425 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	105	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CF
		Dilution Factor: 1	Analysis Time..: 18:50		
Sodium	104	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CG
		Dilution Factor: 1	Analysis Time..: 09:23		
Nickel	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CH
		Dilution Factor: 1	Analysis Time..: 18:50		
Lead	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CJ
		Dilution Factor: 1	Analysis Time..: 18:50		
Antimony	103	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CK
		Dilution Factor: 1	Analysis Time..: 18:50		
Selenium	105	(80 - 120)	SW846 6010C	08/17-08/24/11	MLQNE1CL
		Dilution Factor: 1	Analysis Time..: 12:45		
Strontium	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CM
		Dilution Factor: 1	Analysis Time..: 09:23		
Thallium	100	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CN
		Dilution Factor: 1	Analysis Time..: 18:50		
Vanadium	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CP
		Dilution Factor: 1	Analysis Time..: 18:50		
Zinc	112	(80 - 120)	SW846 6010C	08/17-08/24/11	MLQNE1CQ
		Dilution Factor: 1	Analysis Time..: 12:45		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H170425 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLVHL1AC LCS Lot-Sample#: F1H170000-091			
	93	(90 - 110)	MCAWW 300.0A	08/17/11	1229091
		Dilution Factor: 1	Analysis Time..: 05:52		
Fluoride		Work Order #: MLVHM1AC LCS Lot-Sample#: F1H170000-092			
	96	(90 - 110)	MCAWW 300.0A	08/17/11	1229092
		Dilution Factor: 1	Analysis Time..: 05:52		
Nitrate		Work Order #: MLVHN1AC LCS Lot-Sample#: F1H170000-093			
	95	(90 - 110)	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1	Analysis Time..: 05:52		
Nitrite		Work Order #: MLVHP1AC LCS Lot-Sample#: F1H170000-094			
	99	(90 - 110)	MCAWW 300.0A	08/17/11	1229094
		Dilution Factor: 1	Analysis Time..: 05:52		
Phosphate as P, Ortho		Work Order #: MLVHQ1AC LCS Lot-Sample#: F1H170000-095			
	99	(90 - 110)	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1	Analysis Time..: 05:52		
Sulfate		Work Order #: MLVHR1AC LCS Lot-Sample#: F1H170000-096			
	95	(90 - 110)	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 1	Analysis Time..: 05:52		
Total Alkalinity		Work Order #: MLX1P1AC LCS Lot-Sample#: F1H230000-125			
	94	(90 - 110)	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLX1P1AD LCS Lot-Sample#: F1H230000-125			
	94	(90 - 110)	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLQ6P1AC LCS Lot-Sample#: F1H170000-114			
	98	(90 - 113)	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H170425 Work Order #...: MLLN71CF-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-007 MLLN71CG-MSD
Date Sampled...: 08/11/11 10:15 Date Received..: 08/12/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 09:20
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	101	(70 - 130)			SW846 8260B
	103	(70 - 130)	2.4	(0-20)	SW846 8260B
Dibromochloromethane	104	(60 - 135)			SW846 8260B
	102	(60 - 135)	1.6	(0-20)	SW846 8260B
Vinyl chloride	93	(50 - 145)			SW846 8260B
	96	(50 - 145)	2.4	(0-20)	SW846 8260B
Bromomethane	107	(30 - 145)			SW846 8260B
	102	(30 - 145)	5.0	(0-20)	SW846 8260B
Chloroethane	100	(60 - 135)			SW846 8260B
	97	(60 - 135)	3.2	(0-20)	SW846 8260B
Acetone	111	(40 - 140)			SW846 8260B
	95	(40 - 140)	15	(0-20)	SW846 8260B
1,1-Dichloroethene	107	(70 - 130)			SW846 8260B
	96	(70 - 130)	11	(0-20)	SW846 8260B
Methylene chloride	133	(55 - 140)			SW846 8260B
	135	(55 - 140)	1.7	(0-20)	SW846 8260B
Carbon disulfide	97	(35 - 160)			SW846 8260B
	86	(35 - 160)	12	(0-20)	SW846 8260B
1,1-Dichloroethane	100	(70 - 135)			SW846 8260B
	95	(70 - 135)	4.6	(0-20)	SW846 8260B
2-Butanone	91	(30 - 150)			SW846 8260B
	97	(30 - 150)	6.4	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	100	(85 - 115)			SW846 8260B
	98	(85 - 115)	2.4	(0-20)	SW846 8260B
Chloroform	99	(65 - 135)			SW846 8260B
	94	(65 - 135)	5.1	(0-20)	SW846 8260B
1,1,1-Trichloroethane	108	(65 - 130)			SW846 8260B
	102	(65 - 130)	5.6	(0-20)	SW846 8260B
Carbon tetrachloride	108	(65 - 140)			SW846 8260B
	102	(65 - 140)	5.4	(0-20)	SW846 8260B
1,2-Dichloroethane	99	(70 - 130)			SW846 8260B
	100	(70 - 130)	0.19	(0-20)	SW846 8260B
Benzene	100	(80 - 120)			SW846 8260B
	98	(80 - 120)	2.2	(0-20)	SW846 8260B
Trichloroethene	93	(70 - 125)			SW846 8260B
	94	(70 - 125)	0.16	(0-20)	SW846 8260B
1,2-Dichloropropane	99	(75 - 125)			SW846 8260B
	98	(75 - 125)	0.89	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H170425 Work Order #...: MLLN71CF-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-007 MLLN71CG-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	103	(75 - 120)			SW846 8260B
	102	(75 - 120)	0.87	(0-20)	SW846 8260B
1,1,2-Trichloroethane	102	(75 - 125)			SW846 8260B
	97	(75 - 125)	5.2	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	107	(55 - 140)			SW846 8260B
	107	(55 - 140)	0.56	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	102	(75 - 120)	3.8	(0-20)	SW846 8260B
1,3-Dichlorobenzene	107	(75 - 125)			SW846 8260B
	105	(75 - 125)	2.2	(0-20)	SW846 8260B
1,4-Dichlorobenzene	100	(75 - 125)			SW846 8260B
	101	(75 - 125)	1.0	(0-20)	SW846 8260B
2-Hexanone	96	(55 - 130)			SW846 8260B
	91	(55 - 130)	5.8	(0-20)	SW846 8260B
4-Methyl-2-pentanone	96	(60 - 135)			SW846 8260B
	98	(60 - 135)	2.8	(0-20)	SW846 8260B
Chlorobenzene	100	(80 - 120)			SW846 8260B
	98	(80 - 120)	1.7	(0-20)	SW846 8260B
Bromoform	107	(70 - 130)			SW846 8260B
	111	(70 - 130)	3.0	(0-20)	SW846 8260B
Ethylbenzene	105	(75 - 125)			SW846 8260B
	104	(75 - 125)	1.2	(0-20)	SW846 8260B
Styrene	114	(65 - 135)			SW846 8260B
	110	(65 - 135)	3.6	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	97	(65 - 130)			SW846 8260B
	96	(65 - 130)	1.5	(0-20)	SW846 8260B
Tetrachloroethene	104	(45 - 150)			SW846 8260B
	101	(45 - 150)	2.3	(0-20)	SW846 8260B
1,2-Dichlorobenzene	104	(70 - 120)			SW846 8260B
	103	(70 - 120)	1.2	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
	102	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
	102	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)
	100	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H170425 **Matrix.....:** WATER
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H160430-001 **Prep Batch #...:** 1229103							
Uranium	112	(80 - 120)			SW846 6020A	08/17-08/19/11	MLPER1A6
	112	(80 - 120)	0.11	(0-20)	SW846 6020A	08/17-08/19/11	MLPER1A7
		Dilution Factor: 1					
		Analysis Time..: 08:39					
MS Lot-Sample #: F1H160430-001 **Prep Batch #...:** 1229104							
Aluminum	108	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CD
	104	(80 - 120)	3.7	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CE
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Antimony	104	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1DA
	101	(80 - 120)	3.1	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1DC
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Arsenic	108	(80 - 120)			SW846 6010C	08/17-08/24/11	MLPER1A8
	105	(80 - 120)	2.7	(0-20)	SW846 6010C	08/17-08/24/11	MLPER1A9
		Dilution Factor: 1					
		Analysis Time..: 12:58					
Barium	104	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CF
	101	(80 - 120)	3.0	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CG
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Beryllium	108	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CH
	105	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CJ
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Cadmium	98	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CM
	95	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CN
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Calcium	180 N	(80 - 120)			SW846 6010C	08/17-08/23/11	MLPER1CK
	188 N	(80 - 120)	0.13	(0-20)	SW846 6010C	08/17-08/23/11	MLPER1CL
		Dilution Factor: 20					
		Analysis Time..: 13:30					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H170425 **Matrix.....:** WATER
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	97	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CR
	94	(80 - 120)	2.4	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CT
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Cobalt	95	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CP
	92	(80 - 120)	2.5	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CQ
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Copper	101	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CU
	98	(80 - 120)	3.6	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CV
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Iron	100	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CW
	97	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CX
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Lead	93	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C8
	92	(80 - 120)	2.1	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C9
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Magnesium	122 N	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C0
	105	(80 - 120)	1.2	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C1
		Dilution Factor: 5					
		Analysis Time..: 09:35					
Manganese	100	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C2
	98	(80 - 120)	2.6	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C3
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Nickel	94	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C6
	92	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C7
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Selenium	109	(80 - 120)			SW846 6010C	08/17-08/24/11	MLPER1DD
	106	(80 - 120)	2.9	(0-20)	SW846 6010C	08/17-08/24/11	MLPER1DE
		Dilution Factor: 1					
		Analysis Time..: 12:58					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H170425 **Matrix.....:** WATER
Date Sampled...: 08/16/11 08:45 **Date Received..:** 08/17/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLQHH1CF		MS Lot-Sample #: F1H170425-007	
	96	(90 - 110)	MCAWW 300.0A	08/17/11	1229091
		Dilution Factor: 100	Analysis Time..: 06:59		
Fluoride		Work Order #...: MLQHH1CH		MS Lot-Sample #: F1H170425-007	
	106	(90 - 110)	MCAWW 300.0A	08/17/11	1229092
		Dilution Factor: 10	Analysis Time..: 06:46		
Nitrate		Work Order #...: MLQHH1CK		MS Lot-Sample #: F1H170425-007	
	114 N	(90 - 110)	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1	Analysis Time..: 06:19		
Nitrite		Work Order #...: MLQHH1CM		MS Lot-Sample #: F1H170425-007	
	53 N	(90 - 110)	MCAWW 300.0A	08/17/11	1229094
		Dilution Factor: 10	Analysis Time..: 06:46		
Phosphate as P, Ortho		Work Order #...: MLQHH1CP		MS Lot-Sample #: F1H170425-007	
	122 N	(90 - 110)	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1	Analysis Time..: 06:19		
Sulfate		Work Order #...: MLQHH1CR		MS Lot-Sample #: F1H170425-007	
	90	(90 - 110)	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 5	Analysis Time..: 06:32		
Total Alkalinity		Work Order #...: MLPE41CG		MS Lot-Sample #: F1H160430-003	
	110	(80 - 120)	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H170425 **Work Order #...:** MLQHH-SMP **Matrix.....:** WATER
MLQHH-DUP
Date Sampled...: 08/16/11 08:45 **Date Received..:** 08/17/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H170425-007		
	69.3	73.1	mg/L	5.4	(0-20)	MCAWW 300.0A	08/17/11	1229091
		Dilution Factor: 100				Analysis Time..: 06:59		
Fluoride						SD Lot-Sample #: F1H170425-007		
	14.6	14.7	mg/L	0.67	(0-20)	MCAWW 300.0A	08/17/11	1229092
		Dilution Factor: 10				Analysis Time..: 06:46		
Nitrate						SD Lot-Sample #: F1H170425-007		
	0.014 B	0.014 B	mg/L	3.8	(0-20)	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1				Analysis Time..: 06:19		
Nitrite						SD Lot-Sample #: F1H170425-007		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/17/11	1229094
		Dilution Factor: 10				Analysis Time..: 06:46		
Phosphate as P, Ortho						SD Lot-Sample #: F1H170425-007		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1				Analysis Time..: 06:19		
Sulfate						SD Lot-Sample #: F1H170425-007		
	35.2	36.6	mg/L	3.9	(0-20)	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 5				Analysis Time..: 06:32		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H170425 **Work Order #...:** MLLN1-SMP **Matrix.....:** WATER
MLLN1-DUP
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H120447-006		
	645	665	mg/L	3.1	(0-0.0)	MCAWW 160.1	08/17-08/22/11	1229114
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H170425 **Work Order #...:** MLPE4-SMP MLPE4-DUP **Matrix.....:** WATER

Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #:	F1H160430-003	
	234	236	mg/L	0.68	(0-20)	MCAWW 310.1	08/23/11	1235125

Dilution Factor: 1 Analysis Time..: 00:00

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H170425-001
Work Order: MLQGL
Matrix: WATER

Date Collected: 08/16/11 0845
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1234168		Yld % 38
Uranium 234	2.88		0.52	0.10	0.1	08/22/11	08/23/11
Uranium 235/236	0.068		0.079	0.100	0.062	08/22/11	08/23/11
Uranium 238	2.37		0.46	0.10	0.05	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H170425-002
Work Order: MLQG0
Matrix: WATER

Date Collected: 08/16/11 0915
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238036		Yld % 46
Uranium 234	2.49		0.82	0.10	0.39	08/26/11	08/28/11
Uranium 235/236	-0.038	U	0.054	0.100	0.40	08/26/11	08/28/11
Uranium 238	2.09		0.74	0.10	0.32	08/26/11	08/28/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001 DISSOLVED DUP

Radiochemistry

Lab Sample ID: F1H170425-002X
Work Order: MLQG0
Matrix: WATER

Date Collected: 08/16/11 0915
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238036		Yld % 70
Uranium 234	2.35		0.64	0.10	0.25	08/26/11	08/28/11
Uranium 235/236	0.049	U	0.097	0.100	0.13	08/26/11	08/28/11
Uranium 238	1.96		0.58	0.10	0.23	08/26/11	08/28/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606DR0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H170425-003
Work Order: MLQG2
Matrix: WATER

Date Collected: 08/15/11 0955
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1234168		Yld % 37
Uranium 234	4.20		0.67	0.10	0.09	08/22/11	08/23/11
Uranium 235/236	0.17		0.13	0.10	0.06	08/22/11	08/23/11
Uranium 238	4.54		0.71	0.10	0.15	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW15D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H170425-004
Work Order: MLQG8
Matrix: WATER

Date Collected: 08/16/11 1035
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1234168		Yld % 72
Uranium 234	0.48		0.14	0.10	0.07	08/22/11	08/23/11
Uranium 235/236	0.003	U	0.026	0.100	0.070	08/22/11	08/23/11
Uranium 238	0.58		0.16	0.10	0.06	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW17D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H170425-005
Work Order: MLQG9
Matrix: WATER

Date Collected: 08/16/11 1300
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1234168		Yld % 77
Uranium 234	2.39		0.35	0.10	0.05	08/22/11	08/23/11
Uranium 235/236	0.161		0.084	0.100	0.029	08/22/11	08/23/11
Uranium 238	2.30		0.34	0.10	0.05	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H170425-006
Work Order: MLQHA
Matrix: WATER

Date Collected: 08/15/11 1200
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1238036	Yld % 80
Uranium 234	1.29		0.44	0.10	0.23	08/26/11	08/28/11
Uranium 235/236	0.11	U	0.15	0.10	0.23	08/26/11	08/28/11
Uranium 238	0.55		0.30	0.10	0.26	08/26/11	08/28/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001

Radiochemistry

Lab Sample ID: F1H170425-007
Work Order: MLQHH
Matrix: WATER

Date Collected: 08/16/11 0845
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 37
Uranium 234	2.60		0.48	0.10	0.13	08/22/11	08/23/11
Uranium 235/236	0.19		0.13	0.10	0.12	08/22/11	08/23/11
Uranium 238	2.91		0.52	0.10	0.12	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001

Radiochemistry

Lab Sample ID: F1H170425-008
Work Order: MLQJK
Matrix: WATER

Date Collected: 08/16/11 0915
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 42
Uranium 234	2.49		0.46	0.10	0.13	08/22/11	08/23/11
Uranium 235/236	0.17		0.12	0.10	0.06	08/22/11	08/23/11
Uranium 238	2.08		0.41	0.10	0.05	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606DR0001

Radiochemistry

Lab Sample ID: F1H170425-009
Work Order: MLQJL
Matrix: WATER

Date Collected: 08/15/11 0955
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 50
Uranium 234	3.37		0.51	0.10	0.07	08/22/11	08/23/11
Uranium 235/236	0.23		0.13	0.10	0.08	08/22/11	08/23/11
Uranium 238	3.73		0.55	0.10	0.09	08/22/11	08/23/11

NOTE (S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW15D0001

Radiochemistry

Lab Sample ID: F1H170425-010
Work Order: MLQJP
Matrix: WATER

Date Collected: 08/16/11 1035
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 69
Uranium 234	0.37		0.13	0.10	0.08	08/22/11	08/23/11
Uranium 235/236	0.022	U	0.036	0.100	0.056	08/22/11	08/23/11
Uranium 238	0.61		0.17	0.10	0.08	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID:. A03MW17D0001

Radiochemistry

Lab Sample ID: F1H170425-011
Work Order: MLQJQ
Matrix: WATER

Date Collected: 08/16/11 1300
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1238036	Yld % 86
Uranium 234	2.27		0.56	0.10	0.21	08/26/11	08/28/11
Uranium 235/236	0.18		0.17	0.10	0.17	08/26/11	08/28/11
Uranium 238	1.82		0.50	0.10	0.19	08/26/11	08/28/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001

Radiochemistry

Lab Sample ID: F1H170425-012
Work Order: MLQJR
Matrix: WATER

Date Collected: 08/15/11 1200
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1234168		Yld % 31
Uranium 234	0.80		0.28	0.10	0.15	08/22/11	08/23/11
Uranium 235/236	-0.007	U	0.014	0.100	0.13	08/22/11	08/23/11
Uranium 238	0.71		0.26	0.10	0.10	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H170425
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	**Batch # 1238036**		**Yld % 95**		**F1H260000-036B**
Uranium 234	-0.002	U	0.017	0.100	0.051		08/26/11	08/28/11
Uranium 235/236	0.007	U	0.019	0.100	0.043		08/26/11	08/28/11
Uranium 238	-0.0038	U	0.0053	0.100	0.040		08/26/11	08/28/11
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	**Batch # 1234168**		**Yld % 93**		**F1H220000-168B**
Uranium 234	0.019	U	0.027	0.100	0.041		08/22/11	08/23/11
Uranium 235/236	-0.0024	U	0.0048	0.100	0.043		08/22/11	08/23/11
Uranium 238	-0.0019	U	0.0038	0.100	0.035		08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H170425
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/L		A-01-R MOD			F1H260000-036C
Uranium 234	3.26	3.18	0.42	0.05	83	97	(76 - 136)
Uranium 238	3.39	3.72	0.47	0.04	83	110	(76 - 134)
	Batch #:	1238036		Analysis Date:	08/28/11		

NOTE (S) F1H170425

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F1H170425
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ+/-)	% Yld	% Rec	QC Control Limits	Lab Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	A-01-R MOD			F1H220000-168C		
Uranium 234		3.26	3.09	0.40	91	95	(76 - 136)		
	Spk 2	3.27	3.11	0.41	86	95	(76 - 136)	0.8	%RPD
Uranium 238		3.39	3.39	0.43	91	100	(76 - 134)		
	Spk 2	3.39	3.23	0.42	86	95	(76 - 134)	5	%RPD
		Batch #:	1234168		Analysis Date:		08/23/11		

NOTE(S):

Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1H170425
Matrix: WATER

Date Sampled: 08/16/11
Date Received: 08/17/11

Parameter	SAMPLE Result		Total Uncert. (2σ+/-)	% Yld	DUPLICATE Result		Total Uncert. (2 σ+/-)	% Yld	QC Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**		**A-01-R MOD**				**F1H170425-002**	
Uranium 234	2.49		0.82	46	2.35		0.64	70	6	%RPD
Uranium 235/236	-0.038	U	0.054	46	0.049	U	0.097	70	1600	%RPD
Uranium 238	2.09		0.74	46	1.96		0.58	70	7	%RPD
	Batch #:		1238036 (Sample)		1238036 (Duplicate)					

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

U Result is less than the sample detection limit.

F1H170425

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R286,7

Date Received: 2011-08-17

Analytical Due Date: 2011-08-25

Report Due Date: 2011-08-29

Project Manager: LMF

Quote #: 89251 SDG:

Project: Y40415 Guterl Steel

PO#: 697886 Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 12

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A03MW606D0001 DISSOLVED			2011-08-16 / 846	MLQGL	WATER

SAMPLE COMMENTS:

SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A03MW14D0001 DISSOLVED			2011-08-16 / 915	MLQG0	WATER

SAMPLE COMMENTS:

MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R286,7

Project Manager: LMF
Quote #: 89251 SDG:
Project: Y40415 Guterl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-17
Analytical Due Date: 2011-08-25
Report Due Date: 2011-08-29
Report Type: B Standard Report
#SMPS in LOT: 12 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium listead of 200.8

PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Isc U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
3	A03MW606DR0001 DISSOLVED			2011-08-15 / 955	MLQG2	WATER

SAMPLE COMMENTS:

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R286,7

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-17

Project: Y40415
Guterl Steel
Analytical Due Date: 2011-08-25

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-29

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 12
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
4	A03MW15D0001 DISSOLVED			2011-08-16 / 1035	MLQG8	WATER

SAMPLE COMMENTS:

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

F1H170425

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R286,7

Date Received: 2011-08-17

Analytical Due Date: 2011-08-25

Report Due Date: 2011-08-29

Project Manager: LMF Quote #: 89251 SDG:

Project: Y40415 Guterl Steel

PO#: 697886 Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 12

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	A03MW17D0001 DISSOLVED			2011-08-16 / 1300	MLQG9	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	A04CMW711DD0001 DISSOLVED			2011-08-15 / 1200	MLQHA	WATER

SAMPLE COMMENTS:

AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R286,7

Project Manager: LMF
Quote #: 89251 SDG:
Project: Y40415 Guterl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 12

Date Received: 2011-08-17
Analytical Due Date: 2011-08-25
Report Due Date: 2011-08-29
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER
7	A03MW606D0001			2011-08-16 / 845	MLQHH WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R286,7,2-63

Date Received: 2011-08-17

Analytical Due Date: 2011-08-25

Report Due Date: 2011-08-29

Report Type: B Standard Report

EDD Code: 00

Project Manager: LMF Quote #: 89251 SDG:

Project: Y40415 Quterl Steel

PO#: 697886 Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc #SMPS in LOT: 12

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
8	A03MW14D0001			2011-08-16 / 915	MLQJK	WATER

SAMPLE COMMENTS:

SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	A03MW606DR0001			2011-08-15 / 955	MLQJL	WATER

SAMPLE COMMENTS:

ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R286,7,2-63

Date Received: 2011-08-17

Analytical Due Date: 2011-08-25

Report Due Date: 2011-08-29

Report Type: B Standard Report

EDD Code: 00

Project Manager: LMF Quote #: 89251 SDG:

Project: Y40415 Guterl Steel

PO#: 697886 Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc #SMPS in LOT: 12

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
10	A03MW15D0001			2011-08-16 / 1035	MLQJP	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H170425

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R286,7,2-63

Project Manager: LMF
Project: Y40415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 12

Date Received: 2011-08-17
Analytical Due Date: 2011-08-25
Report Due Date: 2011-08-29
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
11	A03MW17D0001			2011-08-16 / 1300	MLQJQ	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R286,7,2-63
Date Received: 2011-08-17
Analytical Due Date: 2011-08-25
Report Due Date: 2011-08-29
Report Type: B Standard Report
EDD Code: 00

Project Manager: LMF
Project: Y40415
PO#: 697886
Client: 522706 Shaw Environmental & Infrastructure Inc

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
#SMPS in LOT: 12

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
12	A04CMW711DD0001			2011-08-15 / 1200	MLQJR	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H170425

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R286,7

Project Manager: LMF
Quote #: 89251
SDG:
Project: Y40415
Guterl Steel
PO#: 697886
Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 12

Date Received: 2011-08-17
Analytical Due Date: 2011-08-25
Report Due Date: 2011-08-29
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium latood of 200.8

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
13	TRIP BLANK #2			2011-08-16 / 0	MLQJ3	WATER

SAMPLE COMMENTS:

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	

estAmerica St. Louis
'15 Rider Trail North
th City, MO 63045
ne 314.298.8566 fax 314.298.8757

LW 117

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/16/2011	COC No: 010
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
ncinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below ____			SDG No.
3) 782-4807 FAX	☒ 2 weeks			
oject Name: Former Guterl Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)		TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
3MW606D0001	8/16/2011	0845	Grab	GW	10	X		X	X	X	X	X	X	X	3 X 40					
3MW14D0001	8/16/2011	0915	Grab	GW	7	X		X	X	X	X	X	X							
3MW606DR0001	8/15/2011	0955	Grab	GW	7	X		X	X	X	X	X	X							
3MW15D0001	8/16/2011	1035	Grab	GW	7	X		X	X	X	X	X	X							
3MW17D0001	8/16/2011	1300	Grab	GW	7	X		X	X	X	X	X	X							
4CMW711DD0001	8/15/2011	1200	Grab	GW	6	X		X	X	X										
p Blank #2	8/16/2011	--	--	TB	1									X	40ml					

servation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other 1, 2, and 4

sible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For ____ Months*

cial Instructions/QC Requirements & Comments:

inquished by:	Company: Shaw E & I. Inc.	Date/Time: 8/16/11 1615	Received by:	Company: BFLO	Date/Time: 08-16-11 16:15
inquished by:	Company: BFLO	Date/Time: 08-16-11 16:40	Received by:	Company:	Date/Time:
inquished by:	Company: Buffalo	Date/Time: 8/16/11 17:00	Received by:	Company: TASTL	Date/Time: 8-17-11 0915

TestAmerica St.Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): FHH170425 TestAmerica St. Louis

CUR Form #: 1 1 3

CONDITION UPON RECEIPT FORM

Client: Shaw

Quote No: 89251

COC/RFA No: 010

Initiated By: EN Date: 8.17.11 Time: 0915

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*				Sample Temperature (s):**			
1.	4855 0258 4330	6.		1.	↑	6.	
2.	4329	7.		2.	ambient	7.	
3.	4318	8.		3.	3	8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	Y (N) N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

second sample - labels have ms "D"
4th
5th

perf logged per chain.

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/18/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

FHH170425

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. Y40415

Guterl Steel

Lot #: F1H190431

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 31, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H190431

This report contains the analytical results for the 14 samples received under chain of custody by TestAmerica in St. Louis on August 19, 2011. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1237141
The CCV recovery was outside the upper QC limit (greater than 20% D) for Vinyl acetate, Carbon Tetrachloride, 1,1,2,2-Tetrachloroethane, sec-Butylbenzene, Nonanal and 1,2-Dibromo-3-chlopropane indicating a potential high bias for those analytes in the samples associated with this CCV. These analytes were not detected above the reporting limit or were not target analytes in the associated samples.

The CCV recoveries are outside the lower QC limit (greater than 20% D) for Naphthalene indicating a potential low bias for those analytes in the samples associated with this CCV. This analyte is not a target analytes in the associated samples.

The LCS recovery for 1,1,2,2-Tetrachloroethane is outside the upper QC limit, indicating a potential positive bias for that analytes. This analyte was not observed above the reporting limit in the associated samples; therefore the sample data was not adversely affected by this excursion.

The MS ans MSD recoveries for 1,1,2,2-Tetrachloroethane are outside the upper QC limit, indicating a potential positive bias for that analytes. These analytes were not observed above the reporting limit in the associated samples; therefore the sample data was not adversely affected by this excursion.

The MSD recovery for 1,1,1-Trichloroethane, 1,2-Dichloroethene and 1,2-Dichloroethene (total) are outside the established QC limits. The RPD is within method acceptance criteria indicating matrix interference. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:
F1H190431 (7): A04DMW710DD0001
F1H190431 (8): A04DFB710DD0001
F1H190431 (9): A04DMW712DD0001
F1H190431 (10): A04BMW707DD0001
F1H190431 (14): TRIP BLANK #3

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1234136
The MS and MSD recoveries for calcium and sodium are outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H190431 (1): A04DMW710DD0001 DISSOLVED
F1H190431 (2): A04DFB710DD0001 DISSOLVED
F1H190431 (3): A04DMW712DD0001 DISSOLVED
F1H190431 (4): A04AMW610D0001 DISSOLVED
F1H190431 (5): A04AMW200001 DISSOLVED
F1H190431 (6): A04AM2100001 DISSOLVED
F1H190431 (7): A04DMW710DD0001
F1H190431 (8): A04DFB710DD0001
F1H190431 (9): A04DMW712DD0001
F1H190431 (11): A04AMW610D0001
F1H190431 (12): A04AMW200001
F1H190431 (13): A04AMW210001

Chloride (MCAWW 300.0A)

Batch: 1231100
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H190431 (7): A04DMW710DD0001
F1H190431 (9): A04DMW712DD0001
F1H190431 (11): A04AMW610D0001
F1H190431 (12): A04AMW200001
F1H190431 (13): A04AMW210001

Sulfate (MCAWW 300.0A)

Batch: 1231105
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H190431 (7): A04DMW710DD0001
F1H190431 (9): A04DMW712DD0001
F1H190431 (11): A04AMW610D0001
F1H190431 (12): A04AMW200001
F1H190431 (13): A04AMW210001

Nitrate (MCAWW 300.0A)

Batch: 1231102
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H190431 (12): A04AMW200001

Nitrite (MCAWW 300.0A)

Batch: 1231103
The following samples were reported ND at dilution for Nitrite, due to high concentrations of Chloride, which masked the retention time for Nitrite in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H190431 (9): A04DMW712DD0001
F1H190431 (11): A04AMW610D0001
F1H190431 (12): A04AMW200001
F1H190431 (13): A04AMW210001

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H190431 (7): A04DMW710DD0001
F1H190431 (8): A04DFB710DD0001
F1H190431 (9): A04DMW712DD0001
F1H190431 (11): A04AMW610D0001
F1H190431 (12): A04AMW200001
F1H190431 (13): A04AMW210001

Orthophosphate (MCAWW 033.0A)

Batch: 1231104
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries Ortho Phos in batch are attributed to matrix interference.

Affected Samples:
F1H190431 (7): A04DMW710DD0001
F1H190431 (8): A04DFB710DD0001
F1H190431 (9): A04DMW712DD0001
F1H190431 (11): A04AMW610D0001
F1H190431 (12): A04AMW200001
F1H190431 (13): A04AMW210001

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)
There was insufficient sample provided to perform the sample duplicate, an LCS duplicate was used instead.

Affected Samples:
F1H190431 (1): A04DMW710DD0001 DISSOLVED
F1H190431 (2): A04DFB710DD0001 DISSOLVED
F1H190431 (3): A04DMW712DD0001 DISSOLVED
F1H190431 (4): A04AMW610D0001 DISSOLVED
F1H190431 (5): A04AMW200001 DISSOLVED
F1H190431 (6): A04AM2100001 DISSOLVED
F1H190431 (7): A04DMW710DD0001
F1H190431 (8): A04DFB710DD0001
F1H190431 (9): A04DMW712DD0001
F1H190431 (11): A04AMW610D0001
F1H190431 (12): A04AMW200001
F1H190431 (13): A04AMW210001

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H190431

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H190431

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLT39	001	A04DMW710DD0001 DISSOLVED	08/18/11	08:25
MLT4E	002	A04DFB710DD0001 DISSOLVED	08/18/11	08:50
MLT4H	003	A04DMW712DD0001 DISSOLVED	08/18/11	09:35
MLT4K	004	A04AMW610D0001 DISSOLVED	08/18/11	11:10
MLT4V	005	A04AMW200001 DISSOLVED	08/18/11	12:05
MLT46	006	A04AM2100001 DISSOLVED	08/18/11	12:45
MLT47	007	A04DMW710DD0001	08/18/11	08:25
MLT5A	008	A04DFB710DD0001	08/18/11	08:50
MLT5D	009	A04DMW712DD0001	08/18/11	09:35
MLT5F	010	A04BMW707DD0001	08/18/11	10:30
MLT5H	011	A04AMW610D0001	08/18/11	11:10
MLT54	012	A04AMW200001	08/18/11	12:05
MLT6E	013	A04AMW210001	08/18/11	12:45
MLT6H	014	TRIP BLANK #3	08/18/11	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-001 **Matrix.....:** WATER
Date Sampled...: 08/18/11 08:25 **Date Received..:** 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	**67.0**	**1.0**	**ug/L**	**SW846 6020A**	**08/22-08/24/11**	**MLT391A3**
		Dilution Factor: 1		Analysis Time..: 03:50		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AD
		Dilution Factor: 1		Analysis Time..: 20:21		
Aluminum	ND	200	ug/L	SW846 6010C	08/22-08/27/11	MLT391AE
		Dilution Factor: 1		Analysis Time..: 20:21		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AC
		Dilution Factor: 1		Analysis Time..: 20:21		
Barium	**51.0**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT391AF**
		Dilution Factor: 1		Analysis Time..: 20:21		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AG
		Dilution Factor: 1		Analysis Time..: 20:21		
Calcium	**203000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT391AH**
		Dilution Factor: 10		Analysis Time..: 19:30		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AJ
		Dilution Factor: 1		Analysis Time..: 20:21		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AK
		Dilution Factor: 1		Analysis Time..: 20:21		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AL
		Dilution Factor: 1		Analysis Time..: 20:21		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AM
		Dilution Factor: 1		Analysis Time..: 20:21		
Iron	**167**	**100**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT391AN**
		Dilution Factor: 1		Analysis Time..: 17:36		
Magnesium	**34100**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT391AP**
		Dilution Factor: 1		Analysis Time..: 17:36		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**26.0**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT391AQ**
		Dilution Factor: 1		Analysis Time..: 20:21		
Sodium	**214000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT391AR**
		Dilution Factor: 10		Analysis Time..: 19:30		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AT
		Dilution Factor: 1		Analysis Time..: 20:21		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AU
		Dilution Factor: 1		Analysis Time..: 20:21		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AV
		Dilution Factor: 1		Analysis Time..: 20:21		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AW
		Dilution Factor: 1		Analysis Time..: 20:21		
Strontium	**1130**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT391AX**
		Dilution Factor: 10		Analysis Time..: 19:30		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT391A0
		Dilution Factor: 1		Analysis Time..: 14:48		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391A1
		Dilution Factor: 1		Analysis Time..: 20:21		
Zinc	**12.4 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT391A2**
		Dilution Factor: 1		Analysis Time..: 20:21		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-002 **Matrix.....:** WATER
Date Sampled...: 08/18/11 08:50 **Date Received..:** 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	**0.25 J**	**1.0**	**ug/L**	**SW846 6020A**	**08/22-08/24/11**	**MLT4E1AE**
		Dilution Factor: 1		Analysis Time..: 04:16		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AJ
		Dilution Factor: 1		Analysis Time..: 20:46		
Aluminum	ND	200	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AK
		Dilution Factor: 1		Analysis Time..: 20:46		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AH
		Dilution Factor: 1		Analysis Time..: 20:46		
Barium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AL
		Dilution Factor: 1		Analysis Time..: 20:46		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AM
		Dilution Factor: 1		Analysis Time..: 20:46		
Calcium	**256 J**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4E1AN**
		Dilution Factor: 1		Analysis Time..: 18:02		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AP
		Dilution Factor: 1		Analysis Time..: 20:46		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AQ
		Dilution Factor: 1		Analysis Time..: 20:46		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AR
		Dilution Factor: 1		Analysis Time..: 20:46		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AT
		Dilution Factor: 1		Analysis Time..: 20:46		
Iron	ND	100	ug/L	SW846 6010C	08/22-08/26/11	MLT4E1AU
		Dilution Factor: 1		Analysis Time..: 18:02		
Magnesium	ND	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT4E1AV
		Dilution Factor: 1		Analysis Time..: 18:02		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-002 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AW
		Dilution Factor: 1		Analysis Time..: 20:46		
Sodium	ND	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT4E1AX
		Dilution Factor: 1		Analysis Time..: 18:02		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1A0
		Dilution Factor: 1		Analysis Time..: 20:46		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1A1
		Dilution Factor: 1		Analysis Time..: 20:46		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1A2
		Dilution Factor: 1		Analysis Time..: 20:46		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1A3
		Dilution Factor: 1		Analysis Time..: 20:46		
Strontium	**0.75 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4E1A4**
		Dilution Factor: 1		Analysis Time..: 18:02		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT4E1AA
		Dilution Factor: 1		Analysis Time..: 15:27		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AC
		Dilution Factor: 1		Analysis Time..: 20:46		
Zinc	**10.5 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4E1AD**
		Dilution Factor: 1		Analysis Time..: 20:46		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-003 **Matrix.....:** WATER
Date Sampled...: 08/18/11 09:35 **Date Received..:** 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	**38.8**	**1.0**	**ug/L**	**SW846 6020A**	**08/22-08/24/11**	**MLT4H1AE**
		Dilution Factor: 1		Analysis Time..: 04:30		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AJ
		Dilution Factor: 1		Analysis Time..: 20:59		
Aluminum	ND	200	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AK
		Dilution Factor: 1		Analysis Time..: 20:59		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AH
		Dilution Factor: 1		Analysis Time..: 20:59		
Barium	**60.8**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4H1AL**
		Dilution Factor: 1		Analysis Time..: 20:59		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AM
		Dilution Factor: 1		Analysis Time..: 20:59		
Calcium	**166000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4H1AN**
		Dilution Factor: 10		Analysis Time..: 20:20		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AP
		Dilution Factor: 1		Analysis Time..: 20:59		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AQ
		Dilution Factor: 1		Analysis Time..: 20:59		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AR
		Dilution Factor: 1		Analysis Time..: 20:59		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AT
		Dilution Factor: 1		Analysis Time..: 20:59		
Iron	**43.8 J**	**100**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4H1AU**
		Dilution Factor: 1		Analysis Time..: 18:14		
Magnesium	**47800**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4H1AV**
		Dilution Factor: 1		Analysis Time..: 18:14		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**9.7 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4H1AW**
		Dilution Factor: 1		Analysis Time..: 20:59		
Sodium	**276000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4H1AX**
		Dilution Factor: 10		Analysis Time..: 20:20		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1A0
		Dilution Factor: 1		Analysis Time..: 20:59		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1A1
		Dilution Factor: 1		Analysis Time..: 20:59		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1A2
		Dilution Factor: 1		Analysis Time..: 20:59		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1A3
		Dilution Factor: 1		Analysis Time..: 20:59		
Strontium	**878**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4H1A4**
		Dilution Factor: 10		Analysis Time..: 20:20		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT4H1AA
		Dilution Factor: 1		Analysis Time..: 15:33		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AC
		Dilution Factor: 1		Analysis Time..: 20:59		
Zinc	**79.3**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4H1AD**
		Dilution Factor: 1		Analysis Time..: 20:59		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW610D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-004 Matrix.....: WATER
Date Sampled...: 08/18/11 11:10 Date Received..: 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	**10.6**	**1.0**	**ug/L**	**SW846 6020A**	**08/22-08/24/11**	**MLT4K1AE**
		Dilution Factor: 1		Analysis Time..: 04:36		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AJ
		Dilution Factor: 1		Analysis Time..: 21:06		
Aluminum	ND	200	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AK
		Dilution Factor: 1		Analysis Time..: 21:06		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AH
		Dilution Factor: 1		Analysis Time..: 21:06		
Barium	**19.1 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4K1AL**
		Dilution Factor: 1		Analysis Time..: 21:06		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AM
		Dilution Factor: 1		Analysis Time..: 21:06		
Calcium	**84600**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4K1AN**
		Dilution Factor: 10		Analysis Time..: 20:26		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AP
		Dilution Factor: 1		Analysis Time..: 21:06		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AQ
		Dilution Factor: 1		Analysis Time..: 21:06		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AR
		Dilution Factor: 1		Analysis Time..: 21:06		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AT
		Dilution Factor: 1		Analysis Time..: 21:06		
Iron	**74.7 J**	**100**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4K1AU**
		Dilution Factor: 1		Analysis Time..: 18:20		
Magnesium	**32000**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4K1AV**
		Dilution Factor: 1		Analysis Time..: 18:20		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW610D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**76.3**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4K1AW**
		Dilution Factor: 1		Analysis Time..: 21:06		
Sodium	**119000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4K1AX**
		Dilution Factor: 10		Analysis Time..: 20:26		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1A0
		Dilution Factor: 1		Analysis Time..: 21:06		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1A1
		Dilution Factor: 1		Analysis Time..: 21:06		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1A2
		Dilution Factor: 1		Analysis Time..: 21:06		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1A3
		Dilution Factor: 1		Analysis Time..: 21:06		
Strontium	**488**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4K1A4**
		Dilution Factor: 10		Analysis Time..: 20:26		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT4K1AA
		Dilution Factor: 1		Analysis Time..: 15:46		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AC
		Dilution Factor: 1		Analysis Time..: 21:06		
Zinc	**14.8 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4K1AD**
		Dilution Factor: 1		Analysis Time..: 21:06		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW200001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-005 Matrix.....: WATER
Date Sampled...: 08/18/11 12:05 Date Received..: 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	13.3	1.0	ug/L	SW846 6020A	08/22-08/24/11	MLT4V1AE
		Dilution Factor: 1		Analysis Time..: 04:56		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AJ
		Dilution Factor: 1		Analysis Time..: 21:25		
Aluminum	ND	200	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AK
		Dilution Factor: 1		Analysis Time..: 21:25		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AH
		Dilution Factor: 1		Analysis Time..: 21:25		
Barium	57.4	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AL
		Dilution Factor: 1		Analysis Time..: 21:25		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AM
		Dilution Factor: 1		Analysis Time..: 21:25		
Calcium	91900	10000	ug/L	SW846 6010C	08/22-08/26/11	MLT4V1AN
		Dilution Factor: 10		Analysis Time..: 20:33		
Cadmium	1.1 J	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AP
		Dilution Factor: 1		Analysis Time..: 21:25		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AQ
		Dilution Factor: 1		Analysis Time..: 21:25		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AR
		Dilution Factor: 1		Analysis Time..: 21:25		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AT
		Dilution Factor: 1		Analysis Time..: 21:25		
Iron	28.7 J	100	ug/L	SW846 6010C	08/22-08/26/11	MLT4V1AU
		Dilution Factor: 1		Analysis Time..: 18:39		
Magnesium	20300	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT4V1AV
		Dilution Factor: 1		Analysis Time..: 18:39		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW200001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AW
		Dilution Factor: 1		Analysis Time..: 21:25		
Sodium	**46200**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4V1AX**
		Dilution Factor: 1		Analysis Time..: 18:39		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1A0
		Dilution Factor: 1		Analysis Time..: 21:25		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1A1
		Dilution Factor: 1		Analysis Time..: 21:25		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1A2
		Dilution Factor: 1		Analysis Time..: 21:25		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1A3
		Dilution Factor: 1		Analysis Time..: 21:25		
Strontium	**206**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4V1A4**
		Dilution Factor: 10		Analysis Time..: 20:33		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT4V1AA
		Dilution Factor: 1		Analysis Time..: 15:53		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AC
		Dilution Factor: 1		Analysis Time..: 21:25		
Zinc	**251**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4V1AD**
		Dilution Factor: 1		Analysis Time..: 21:25		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AM2100001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-006 **Matrix.....:** WATER
Date Sampled...: 08/18/11 12:45 **Date Received..:** 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	**3.2**	**1.0**	**ug/L**	**SW846 6020A**	**08/22-08/24/11**	**MLT461AE**
		Dilution Factor: 1		Analysis Time..: 05:03		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AJ
		Dilution Factor: 1		Analysis Time..: 21:31		
Aluminum	ND	200	ug/L	SW846 6010C	08/22-08/27/11	MLT461AK
		Dilution Factor: 1		Analysis Time..: 21:31		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AH
		Dilution Factor: 1		Analysis Time..: 21:31		
Barium	**72.0**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT461AL**
		Dilution Factor: 1		Analysis Time..: 21:31		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AM
		Dilution Factor: 1		Analysis Time..: 21:31		
Calcium	**110000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT461AN**
		Dilution Factor: 10		Analysis Time..: 20:39		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AP
		Dilution Factor: 1		Analysis Time..: 21:31		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AQ
		Dilution Factor: 1		Analysis Time..: 21:31		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AR
		Dilution Factor: 1		Analysis Time..: 21:31		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AT
		Dilution Factor: 1		Analysis Time..: 21:31		
Iron	ND	100	ug/L	SW846 6010C	08/22-08/26/11	MLT461AU
		Dilution Factor: 1		Analysis Time..: 18:46		
Magnesium	**36500**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT461AV**
		Dilution Factor: 1		Analysis Time..: 18:46		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AM2100001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**5.1 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT461AW**
		Dilution Factor: 1		Analysis Time..: 21:31		
Sodium	**223000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT461AX**
		Dilution Factor: 10		Analysis Time..: 20:39		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461A0
		Dilution Factor: 1		Analysis Time..: 21:31		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461A1
		Dilution Factor: 1		Analysis Time..: 21:31		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461A2
		Dilution Factor: 1		Analysis Time..: 21:31		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461A3
		Dilution Factor: 1		Analysis Time..: 21:31		
Strontium	**608**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT461A4**
		Dilution Factor: 10		Analysis Time..: 20:39		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT461AA
		Dilution Factor: 1		Analysis Time..: 15:59		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AC
		Dilution Factor: 1		Analysis Time..: 21:31		
Zinc	ND	20.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AD
		Dilution Factor: 1		Analysis Time..: 21:31		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-007 Work Order #...: MLT471AC Matrix.....: WATER
Date Sampled...: 08/18/11 08:25 Date Received..: 08/19/11
Prep Date.....: 08/24/11 Analysis Date..: 08/25/11
Prep Batch #...: 1237141 Analysis Time..: 01:00
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**19**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**10**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**29**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**13**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**8.4**	**1.0**	**ug/L**
Vinyl chloride	**0.86 J**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-007 Work Order #...: MLT471AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	114	(85 - 120)
Dibromofluoromethane	86	(85 - 115)
1,2-Dichloroethane-d4	85	(70 - 120)
4-Bromofluorobenzene	95	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001

TOTAL Metals

Lot-Sample #...: F1H190431-007 Matrix.....: WATER
Date Sampled...: 08/18/11 08:25 Date Received..: 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	60.8	1.0	ug/L	SW846 6020A	08/22-08/24/11	MLT471A5
		Dilution Factor: 1		Analysis Time..: 05:10		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AF
		Dilution Factor: 1		Analysis Time..: 21:38		
Aluminum	346	200	ug/L	SW846 6010C	08/22-08/27/11	MLT471AG
		Dilution Factor: 1		Analysis Time..: 21:38		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AE
		Dilution Factor: 1		Analysis Time..: 21:38		
Barium	51.9	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AH
		Dilution Factor: 1		Analysis Time..: 21:38		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AJ
		Dilution Factor: 1		Analysis Time..: 21:38		
Calcium	195000	10000	ug/L	SW846 6010C	08/22-08/26/11	MLT471AK
		Dilution Factor: 10		Analysis Time..: 20:45		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AL
		Dilution Factor: 1		Analysis Time..: 21:38		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AM
		Dilution Factor: 1		Analysis Time..: 21:38		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AN
		Dilution Factor: 1		Analysis Time..: 21:38		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AP
		Dilution Factor: 1		Analysis Time..: 21:38		
Iron	300	100	ug/L	SW846 6010C	08/22-08/26/11	MLT471AQ
		Dilution Factor: 1		Analysis Time..: 18:52		
Magnesium	34000	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT471AR
		Dilution Factor: 1		Analysis Time..: 18:52		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001

TOTAL Metals

Lot-Sample #...: F1H190431-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**29.4**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT471AT**
		Dilution Factor: 1		Analysis Time..: 21:38		
Sodium	**198000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT471AU**
		Dilution Factor: 10		Analysis Time..: 20:45		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AV
		Dilution Factor: 1		Analysis Time..: 21:38		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AW
		Dilution Factor: 1		Analysis Time..: 21:38		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AX
		Dilution Factor: 1		Analysis Time..: 21:38		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471A0
		Dilution Factor: 1		Analysis Time..: 21:38		
Strontium	**1120**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT471A1**
		Dilution Factor: 10		Analysis Time..: 20:45		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT471A2
		Dilution Factor: 1		Analysis Time..: 16:05		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471A3
		Dilution Factor: 1		Analysis Time..: 21:38		
Zinc	**11.3 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT471A4**
		Dilution Factor: 1		Analysis Time..: 21:38		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001

General Chemistry

Lot-Sample #...: F1H190431-007 Work Order #...: MLT47 Matrix.....: WATER
Date Sampled...: 08/18/11 08:25 Date Received..: 08/19/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	352	20.0	mg/L	MCAWW 300.0A	08/19/11	1231100
		Dilution Factor: 100		Analysis Time..: 10:52		
Fluoride	0.97	0.10	mg/L	MCAWW 300.0A	08/19/11	1231101
		Dilution Factor: 1		Analysis Time..: 09:35		
Nitrate	0.028	0.020	mg/L	MCAWW 300.0A	08/19/11	1231102
		Dilution Factor: 1		Analysis Time..: 09:35		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/19/11	1231103
		Dilution Factor: 10		Analysis Time..: 10:37		
Phosphate as P, Ortho	0.28 B,J	0.50	mg/L	MCAWW 300.0A	08/19/11	1231104
		Dilution Factor: 1		Analysis Time..: 09:35		
Sulfate	263	50.0	mg/L	MCAWW 300.0A	08/19/11	1231105
		Dilution Factor: 100		Analysis Time..: 10:52		
Total Alkalinity	270	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1340	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-008 **Work Order #...:** MLT5A1AN **Matrix.....:** WATER
Date Sampled...: 08/18/11 08:50 **Date Received..:** 08/19/11
Prep Date.....: 08/24/11 **Analysis Date..:** 08/25/11
Prep Batch #...: 1237141 **Analysis Time..:** 02:11
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**7.7**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	**3.4 J**	**5.0**	**ug/L**
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.14 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-008 **Work Order #...:** MLT5A1AN **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	114	(85 - 120)
Dibromofluoromethane	90	(85 - 115)
1,2-Dichloroethane-d4	91	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001

TOTAL Metals

Lot-Sample #...: F1H190431-008 **Matrix.....:** WATER
Date Sampled...: 08/18/11 08:50 **Date Received..:** 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	ND	1.0	ug/L	SW846 6020A	08/22-08/24/11	MLT5A1AG
		Dilution Factor: 1		Analysis Time..: 05:16		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1AR
		Dilution Factor: 1		Analysis Time..: 21:44		
Aluminum	**87.8 J**	**200**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5A1AT**
		Dilution Factor: 1		Analysis Time..: 21:44		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1AQ
		Dilution Factor: 1		Analysis Time..: 21:44		
Barium	**25.0 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5A1AU**
		Dilution Factor: 1		Analysis Time..: 21:44		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1AV
		Dilution Factor: 1		Analysis Time..: 21:44		
Calcium	**1670**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5A1AW**
		Dilution Factor: 1		Analysis Time..: 18:58		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1AX
		Dilution Factor: 1		Analysis Time..: 21:44		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1A0
		Dilution Factor: 1		Analysis Time..: 21:44		
Chromium	**4.5 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5A1A1**
		Dilution Factor: 1		Analysis Time..: 21:44		
Copper	**791**	**25.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5A1A2**
		Dilution Factor: 1		Analysis Time..: 21:44		
Iron	**150**	**100**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5A1A3**
		Dilution Factor: 1		Analysis Time..: 18:58		
Magnesium	ND	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT5A1A4
		Dilution Factor: 1		Analysis Time..: 18:58		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001

TOTAL Metals

Lot-Sample #...: F1H190431-008 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**45.2**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5A1A5**
		Dilution Factor: 1		Analysis Time..: 21:44		
Sodium	ND	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT5A1A6
		Dilution Factor: 1		Analysis Time..: 18:58		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1A7
		Dilution Factor: 1		Analysis Time..: 21:44		
Lead	**25.6**	**10.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5A1A8**
		Dilution Factor: 1		Analysis Time..: 21:44		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1A9
		Dilution Factor: 1		Analysis Time..: 21:44		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1AA
		Dilution Factor: 1		Analysis Time..: 21:44		
Strontium	**13.4**	**5.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5A1AC**
		Dilution Factor: 1		Analysis Time..: 18:58		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT5A1AD
		Dilution Factor: 1		Analysis Time..: 16:25		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1AE
		Dilution Factor: 1		Analysis Time..: 21:44		
Zinc	**683**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5A1AF**
		Dilution Factor: 1		Analysis Time..: 21:44		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001

General Chemistry

Lot-Sample #...: F1H190431-008 Work Order #...: MLT5A Matrix.....: WATER
Date Sampled...: 08/18/11 08:50 Date Received..: 08/19/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	0.41	0.20	mg/L	MCAWW 300.0A	08/20/11	1231100
		Dilution Factor: 1		Analysis Time..: 02:43		
Fluoride	ND	0.10	mg/L	MCAWW 300.0A	08/20/11	1231101
		Dilution Factor: 1		Analysis Time..: 02:43		
Nitrate	0.0069 B	0.020	mg/L	MCAWW 300.0A	08/20/11	1231102
		Dilution Factor: 1		Analysis Time..: 02:43		
Nitrite	ND	0.020	mg/L	MCAWW 300.0A	08/20/11	1231103
		Dilution Factor: 1		Analysis Time..: 02:43		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/20/11	1231104
		Dilution Factor: 1		Analysis Time..: 02:43		
Sulfate	0.30 B	0.50	mg/L	MCAWW 300.0A	08/20/11	1231105
		Dilution Factor: 1		Analysis Time..: 02:43		
Total Alkalinity	2.8 B	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	11.0	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-009 Work Order #...: MLT5D1A1 Matrix.....: WATER
Date Sampled...: 08/18/11 09:35 Date Received..: 08/19/11
Prep Date.....: 08/24/11 Analysis Date..: 08/25/11
Prep Batch #...: 1237141 Analysis Time..: 02:34
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**5.7**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**3.5**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**14**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**2.0**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**1.9**	**1.0**	**ug/L**
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	**0.41 J**	**1.0**	**ug/L**
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.27 J**	**1.0**	**ug/L**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-009 **Work Order #...:** MLT5D1A1 **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	114	(85 - 120)
Dibromofluoromethane	88	(85 - 115)
1,2-Dichloroethane-d4	88	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001

TOTAL Metals

Lot-Sample #...: F1H190431-009 Matrix.....: WATER
Date Sampled...: 08/18/11 09:35 Date Received..: 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	**38.7**	**1.0**	**ug/L**	**SW846 6020A**	**08/22-08/24/11**	**MLT5D1AT**
		Dilution Factor: 1		Analysis Time..: 05:23		
Prep Batch #...: 1234136						
Zinc	**84.4**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5D1AR**
		Dilution Factor: 1		Analysis Time..: 21:51		
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1A4
		Dilution Factor: 1		Analysis Time..: 21:51		
Aluminum	**110 J**	**200**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5D1A5**
		Dilution Factor: 1		Analysis Time..: 21:51		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1A3
		Dilution Factor: 1		Analysis Time..: 21:51		
Barium	**62.4**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5D1A6**
		Dilution Factor: 1		Analysis Time..: 21:51		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1A7
		Dilution Factor: 1		Analysis Time..: 21:51		
Calcium	**169000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5D1A8**
		Dilution Factor: 10		Analysis Time..: 21:11		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1A9
		Dilution Factor: 1		Analysis Time..: 21:51		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AA
		Dilution Factor: 1		Analysis Time..: 21:51		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AC
		Dilution Factor: 1		Analysis Time..: 21:51		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AD
		Dilution Factor: 1		Analysis Time..: 21:51		
Iron	**145**	**100**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5D1AE**
		Dilution Factor: 1		Analysis Time..: 19:05		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001

TOTAL Metals

Lot-Sample #...: F1H190431-009 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	**47600**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5D1AF**
		Dilution Factor: 1		Analysis Time..: 19:05		
Manganese	**15.3**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5D1AG**
		Dilution Factor: 1		Analysis Time..: 21:51		
Sodium	**279000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5D1AH**
		Dilution Factor: 10		Analysis Time..: 21:11		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AJ
		Dilution Factor: 1		Analysis Time..: 21:51		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AK
		Dilution Factor: 1		Analysis Time..: 21:51		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AL
		Dilution Factor: 1		Analysis Time..: 21:51		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AM
		Dilution Factor: 1		Analysis Time..: 21:51		
Strontium	**887**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5D1AN**
		Dilution Factor: 10		Analysis Time..: 21:11		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT5D1AP
		Dilution Factor: 1		Analysis Time..: 16:31		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AQ
		Dilution Factor: 1		Analysis Time..: 21:51		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001

General Chemistry

Lot-Sample #...: F1H190431-009 Work Order #...: MLT5D Matrix.....: WATER
Date Sampled...: 08/18/11 09:35 Date Received..: 08/19/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	463	20.0	mg/L	MCAWW 300.0A	08/19/11	1231100
		Dilution Factor: 100		Analysis Time..: 11:54		
Fluoride	1.2	0.10	mg/L	MCAWW 300.0A	08/19/11	1231101
		Dilution Factor: 1		Analysis Time..: 11:07		
Nitrate	0.15	0.020	mg/L	MCAWW 300.0A	08/19/11	1231102
		Dilution Factor: 1		Analysis Time..: 11:07		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/19/11	1231103
		Dilution Factor: 10		Analysis Time..: 11:38		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/19/11	1231104
		Dilution Factor: 1		Analysis Time..: 11:07		
Sulfate	220	50.0	mg/L	MCAWW 300.0A	08/19/11	1231105
		Dilution Factor: 100		Analysis Time..: 11:54		
Total Alkalinity	321	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1490	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-010 Work Order #...: MLT5F1AA Matrix.....: WATER
Date Sampled...: 08/18/11 10:30 Date Received..: 08/19/11
Prep Date.....: 08/24/11 Analysis Date..: 08/25/11
Prep Batch #...: 1237141 Analysis Time..: 02:58
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**17**	**2.0**	**ug/L**
Benzene	**4.0**	**1.0**	**ug/L**
Bromodichloromethane	**1.0**	**1.0**	**ug/L**
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**2.0**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	**0.34 J**	**1.0**	**ug/L**
Chloroethane	ND	2.0	ug/L
Chloroform	**6.2**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**1.5**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	**0.56 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**8.3**	**1.0**	**ug/L**
1,1,1-Trichloroethane	**2.4**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	**9.8**	**5.0**	**ug/L**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-010 Work Order #...: MLT5F1AA Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	112	(85 - 120)
Dibromofluoromethane	90	(85 - 115)
1,2-Dichloroethane-d4	90	(70 - 120)
4-Bromofluorobenzene	96	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW610D0001

TOTAL Metals

Lot-Sample #...: F1H190431-011 Matrix.....: WATER
Date Sampled...: 08/18/11 11:10 Date Received..: 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	9.6	1.0	ug/L	SW846 6020A	08/22-08/24/11	MLT5H1AT
		Dilution Factor: 1		Analysis Time..: 05:30		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1A4
		Dilution Factor: 1		Analysis Time..: 21:57		
Aluminum	432	200	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1A5
		Dilution Factor: 1		Analysis Time..: 21:57		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1A3
		Dilution Factor: 1		Analysis Time..: 21:57		
Barium	17.6 J	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1A6
		Dilution Factor: 1		Analysis Time..: 21:57		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1A7
		Dilution Factor: 1		Analysis Time..: 21:57		
Calcium	101000	10000	ug/L	SW846 6010C	08/22-08/26/11	MLT5H1A8
		Dilution Factor: 10		Analysis Time..: 21:17		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1A9
		Dilution Factor: 1		Analysis Time..: 21:57		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1AA
		Dilution Factor: 1		Analysis Time..: 21:57		
Chromium	5.8 J	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1AC
		Dilution Factor: 1		Analysis Time..: 21:57		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1AD
		Dilution Factor: 1		Analysis Time..: 21:57		
Iron	530	100	ug/L	SW846 6010C	08/22-08/26/11	MLT5H1AE
		Dilution Factor: 1		Analysis Time..: 19:11		
Magnesium	38900	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT5H1AF
		Dilution Factor: 1		Analysis Time..: 19:11		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW610D0001

TOTAL Metals

Lot-Sample #...: F1H190431-011 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**132**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5H1AG**
		Dilution Factor: 1		Analysis Time..: 21:57		
Sodium	**125000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5H1AH**
		Dilution Factor: 10		Analysis Time..: 21:17		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1AJ
		Dilution Factor: 1		Analysis Time..: 21:57		
Lead	**5.5 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5H1AK**
		Dilution Factor: 1		Analysis Time..: 21:57		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1AL
		Dilution Factor: 1		Analysis Time..: 21:57		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1AM
		Dilution Factor: 1		Analysis Time..: 21:57		
Strontium	**559**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5H1AN**
		Dilution Factor: 10		Analysis Time..: 21:17		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT5H1AP
		Dilution Factor: 1		Analysis Time..: 16:38		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1AQ
		Dilution Factor: 1		Analysis Time..: 21:57		
Zinc	**39.2**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5H1AR**
		Dilution Factor: 1		Analysis Time..: 21:57		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW610D0001

General Chemistry

Lot-Sample #...: F1H190431-011 Work Order #...: MLT5H Matrix.....: WATER
Date Sampled...: 08/18/11 11:10 Date Received..: 08/19/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	99.2	20.0	mg/L	MCAWW 300.0A	08/19/11	1231100
		Dilution Factor: 100		Analysis Time..: 06:45		
Fluoride	0.66	0.10	mg/L	MCAWW 300.0A	08/19/11	1231101
		Dilution Factor: 1		Analysis Time..: 05:59		
Nitrate	0.64	0.020	mg/L	MCAWW 300.0A	08/19/11	1231102
		Dilution Factor: 1		Analysis Time..: 05:59		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/19/11	1231103
		Dilution Factor: 5		Analysis Time..: 06:14		
Phosphate as P, Ortho	0.16 B,J	0.50	mg/L	MCAWW 300.0A	08/19/11	1231104
		Dilution Factor: 1		Analysis Time..: 05:59		
Sulfate	90.3	5.0	mg/L	MCAWW 300.0A	08/19/11	1231105
		Dilution Factor: 10		Analysis Time..: 06:30		
Total Alkalinity	383	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	678	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW200001

TOTAL Metals

Lot-Sample #...: F1H190431-012 Matrix.....: WATER
Date Sampled...: 08/18/11 12:05 Date Received..: 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	13.5	1.0	ug/L	SW846 6020A	08/22-08/24/11	MLT541A5
		Dilution Factor: 1		Analysis Time..: 05:36		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AF
		Dilution Factor: 1		Analysis Time..: 22:04		
Aluminum	369	200	ug/L	SW846 6010C	08/22-08/27/11	MLT541AG
		Dilution Factor: 1		Analysis Time..: 22:04		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AE
		Dilution Factor: 1		Analysis Time..: 22:04		
Barium	59.5	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AH
		Dilution Factor: 1		Analysis Time..: 22:04		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AJ
		Dilution Factor: 1		Analysis Time..: 22:04		
Calcium	91800	10000	ug/L	SW846 6010C	08/22-08/26/11	MLT541AK
		Dilution Factor: 10		Analysis Time..: 21:23		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AL
		Dilution Factor: 1		Analysis Time..: 22:04		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AM
		Dilution Factor: 1		Analysis Time..: 22:04		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AN
		Dilution Factor: 1		Analysis Time..: 22:04		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AP
		Dilution Factor: 1		Analysis Time..: 22:04		
Iron	250	100	ug/L	SW846 6010C	08/22-08/26/11	MLT541AQ
		Dilution Factor: 1		Analysis Time..: 19:17		
Magnesium	20900	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT541AR
		Dilution Factor: 1		Analysis Time..: 19:17		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW200001

TOTAL Metals

Lot-Sample #...: F1H190431-012 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**22.5**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT541AT**
		Dilution Factor: 1		Analysis Time..: 22:04		
Sodium	**46500**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT541AU**
		Dilution Factor: 1		Analysis Time..: 19:17		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AV
		Dilution Factor: 1		Analysis Time..: 22:04		
Lead	**2.1 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT541AW**
		Dilution Factor: 1		Analysis Time..: 22:04		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AX
		Dilution Factor: 1		Analysis Time..: 22:04		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541A0
		Dilution Factor: 1		Analysis Time..: 22:04		
Strontium	**195**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT541A1**
		Dilution Factor: 10		Analysis Time..: 21:23		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT541A2
		Dilution Factor: 1		Analysis Time..: 16:44		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541A3
		Dilution Factor: 1		Analysis Time..: 22:04		
Zinc	**265**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT541A4**
		Dilution Factor: 1		Analysis Time..: 22:04		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW200001

General Chemistry

Lot-Sample #...: F1H190431-012 Work Order #...: MLT54 Matrix.....: WATER
Date Sampled...: 08/18/11 12:05 Date Received..: 08/19/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	66.1	20.0	mg/L	MCAWW 300.0A	08/20/11	1231100
		Dilution Factor: 100		Analysis Time..: 12:55		
Fluoride	0.58	0.10	mg/L	MCAWW 300.0A	08/20/11	1231101
		Dilution Factor: 1		Analysis Time..: 12:09		
Nitrate	4.1	0.10	mg/L	MCAWW 300.0A	08/20/11	1231102
		Dilution Factor: 5		Analysis Time..: 12:25		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/20/11	1231103
		Dilution Factor: 5		Analysis Time..: 12:25		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/20/11	1231104
		Dilution Factor: 1		Analysis Time..: 12:09		
Sulfate	25.7	2.5	mg/L	MCAWW 300.0A	08/20/11	1231105
		Dilution Factor: 5		Analysis Time..: 12:25		
Total Alkalinity	270	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	461	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW210001

TOTAL Metals

Lot-Sample #...: F1H190431-013 Matrix.....: WATER
Date Sampled...: 08/18/11 12:45 Date Received..: 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	3.1	1.0	ug/L	SW846 6020A	08/22-08/24/11	MLT6E1AG
		Dilution Factor: 1		Analysis Time..: 05:43		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AQ
		Dilution Factor: 1		Analysis Time..: 22:10		
Aluminum	93.9 J	200	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AR
		Dilution Factor: 1		Analysis Time..: 22:10		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AP
		Dilution Factor: 1		Analysis Time..: 22:10		
Barium	72.0	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AT
		Dilution Factor: 1		Analysis Time..: 22:10		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AU
		Dilution Factor: 1		Analysis Time..: 22:10		
Calcium	80100	10000	ug/L	SW846 6010C	08/22-08/26/11	MLT6E1AV
		Dilution Factor: 10		Analysis Time..: 21:29		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AW
		Dilution Factor: 1		Analysis Time..: 22:10		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AX
		Dilution Factor: 1		Analysis Time..: 22:10		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1A0
		Dilution Factor: 1		Analysis Time..: 22:10		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1A1
		Dilution Factor: 1		Analysis Time..: 22:10		
Iron	64.9 J	100	ug/L	SW846 6010C	08/22-08/26/11	MLT6E1A2
		Dilution Factor: 1		Analysis Time..: 19:23		
Magnesium	25500	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT6E1A3
		Dilution Factor: 1		Analysis Time..: 19:23		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW210001

TOTAL Metals

Lot-Sample #...: F1H190431-013 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**4.3 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT6E1A4**
		Dilution Factor: 1		Analysis Time..: 22:10		
Sodium	**207000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT6E1A5**
		Dilution Factor: 10		Analysis Time..: 21:29		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1A6
		Dilution Factor: 1		Analysis Time..: 22:10		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1A7
		Dilution Factor: 1		Analysis Time..: 22:10		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1A8
		Dilution Factor: 1		Analysis Time..: 22:10		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AA
		Dilution Factor: 1		Analysis Time..: 22:10		
Strontium	**177**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT6E1AC**
		Dilution Factor: 10		Analysis Time..: 21:29		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT6E1AD
		Dilution Factor: 1		Analysis Time..: 16:51		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AE
		Dilution Factor: 1		Analysis Time..: 22:10		
Zinc	**64.9**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT6E1AF**
		Dilution Factor: 1		Analysis Time..: 22:10		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW210001

General Chemistry

Lot-Sample #...: F1H190431-013 Work Order #...: MLT6E Matrix.....: WATER
Date Sampled...: 08/18/11 12:45 Date Received..: 08/19/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	231	20.0	mg/L	MCAWW 300.0A	08/20/11	1231100
		Dilution Factor: 100		Analysis Time..: 02:28		
Fluoride	0.24	0.10	mg/L	MCAWW 300.0A	08/20/11	1231101
		Dilution Factor: 1		Analysis Time..: 01:42		
Nitrate	0.091	0.020	mg/L	MCAWW 300.0A	08/20/11	1231102
		Dilution Factor: 1		Analysis Time..: 01:42		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/20/11	1231103
		Dilution Factor: 10		Analysis Time..: 02:13		
Phosphate as P, Ortho	0.066 B,J	0.50	mg/L	MCAWW 300.0A	08/20/11	1231104
		Dilution Factor: 1		Analysis Time..: 01:42		
Sulfate	88.1	2.5	mg/L	MCAWW 300.0A	08/20/11	1231105
		Dilution Factor: 5		Analysis Time..: 01:57		
Total Alkalinity	377	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	913	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #3

GC/MS Volatiles

Lot-Sample #...: F1H190431-014 **Work Order #...:** MLT6H1AA **Matrix.....:** WATER
Date Sampled...: 08/18/11 **Date Received..:** 08/19/11
Prep Date.....: 08/24/11 **Analysis Date..:** 08/25/11
Prep Batch #...: 1237141 **Analysis Time..:** 00:36
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.077 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #3

GC/MS Volatiles

Lot-Sample #...: F1H190431-014 **Work Order #...:** MLT6H1AA **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	116	(85 - 120)
Dibromofluoromethane	88	(85 - 115)
1,2-Dichloroethane-d4	86	(70 - 120)
4-Bromofluorobenzene	95	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H190431 **Work Order #...:** ML2TV1AA **Matrix.....:** WATER
MB Lot-Sample #: F1H250000-141

Prep Date.....: 08/24/11 **Analysis Time..:** 00:13
Analysis Date..: 08/25/11 **Prep Batch #...:** 1237141
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	114	(85 - 120)
Dibromofluoromethane	90	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H190431 Work Order #...: ML2TV1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	90	(70 - 120)		
4-Bromofluorobenzene	93	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H190431 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H220000-135 **Prep Batch #...:** 1234135						
Uranium	ND	1.0	ug/L	SW846 6020A	08/22-08/24/11	MLWFC1AA
		Dilution Factor: 1				
		Analysis Time..: 03:36				
MB Lot-Sample #: F1H220000-136 **Prep Batch #...:** 1234136						
Aluminum	ND	200	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AD
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AU
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AA
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Barium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AE
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AF
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AH
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Calcium	ND	1000	ug/L	SW846 6010C	08/22-08/26/11	MLWFE1AG
		Dilution Factor: 1				
		Analysis Time..: 17:24				
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AK
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AJ
		Dilution Factor: 1				
		Analysis Time..: 20:08				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H190431 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AL
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Iron	ND	100	ug/L	SW846 6010C	08/22-08/26/11	MLWFE1AM
		Dilution Factor: 1				
		Analysis Time..: 17:24				
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AT
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Magnesium	ND	1000	ug/L	SW846 6010C	08/22-08/26/11	MLWFE1AN
		Dilution Factor: 1				
		Analysis Time..: 17:24				
Manganese	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AP
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AR
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AV
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AC
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Sodium	ND	1000	ug/L	SW846 6010C	08/22-08/26/11	MLWFE1AQ
		Dilution Factor: 1				
		Analysis Time..: 17:24				
Strontium	ND	5.0	ug/L	SW846 6010C	08/22-08/26/11	MLWFE1AW
		Dilution Factor: 1				
		Analysis Time..: 17:24				
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLWFE1AX
		Dilution Factor: 1				
		Analysis Time..: 14:35				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1A0
		Dilution Factor: 1				
		Analysis Time..: 20:08				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H190431 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1A1
		Dilution Factor: 1				
		Analysis Time..: 20:08				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H190431 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLX571AA		MB Lot-Sample #:	F1H190000-100	
	ND	0.20	mg/L	MCAWW 300.0A	08/19/11	1231100
		Dilution Factor: 1				
		Analysis Time..: 01:06				
Fluoride		Work Order #: MLX581AA		MB Lot-Sample #:	F1H190000-101	
	ND	0.10	mg/L	MCAWW 300.0A	08/19/11	1231101
		Dilution Factor: 1				
		Analysis Time..: 01:06				
Nitrate		Work Order #: MLX6A1AA		MB Lot-Sample #:	F1H190000-102	
	ND	0.020	mg/L	MCAWW 300.0A	08/19/11	1231102
		Dilution Factor: 1				
		Analysis Time..: 01:06				
Nitrite		Work Order #: MLX6F1AA		MB Lot-Sample #:	F1H190000-103	
	ND	0.020	mg/L	MCAWW 300.0A	08/19/11	1231103
		Dilution Factor: 1				
		Analysis Time..: 01:06				
Phosphate as P, Ortho		Work Order #: MLX6H1AA		MB Lot-Sample #:	F1H190000-104	
	0.20 B	**0.50**	**mg/L**	**MCAWW 300.0A**	**08/19/11**	**1231104**
		Dilution Factor: 1				
		Analysis Time..: 01:06				
Sulfate		Work Order #: MLX6J1AA		MB Lot-Sample #:	F1H190000-105	
	ND	0.50	mg/L	MCAWW 300.0A	08/19/11	1231105
		Dilution Factor: 1				
		Analysis Time..: 01:06				
Total Alkalinity		Work Order #: ML3DL1AA		MB Lot-Sample #:	F1H260000-032	
	ND	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: ML0CP1AA		MB Lot-Sample #:	F1H240000-026	
	ND	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H190431 Work Order #...: ML2TV1AC Matrix.....: WATER
LCS Lot-Sample#: F1H250000-141
Prep Date.....: 08/24/11 Analysis Date..: 08/24/11
Prep Batch #...: 1237141 Analysis Time..: 22:38
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Chlorobenzene	98	(80 - 120)	SW846 8260B
Bromoform	78	(70 - 130)	SW846 8260B
Ethylbenzene	102	(75 - 125)	SW846 8260B
Styrene	103	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	408 a	(65 - 130)	SW846 8260B
Tetrachloroethene	84	(45 - 150)	SW846 8260B
1,2-Dichlorobenzene	95	(70 - 120)	SW846 8260B
cis-1,3-Dichloropropene	81	(70 - 130)	SW846 8260B
Dibromochloromethane	93	(60 - 135)	SW846 8260B
Vinyl chloride	98	(50 - 145)	SW846 8260B
Bromomethane	97	(30 - 145)	SW846 8260B
Chloroethane	102	(60 - 135)	SW846 8260B
Acetone	65	(40 - 140)	SW846 8260B
1,1-Dichloroethene	103	(70 - 130)	SW846 8260B
Methylene chloride	91	(55 - 140)	SW846 8260B
Carbon disulfide	105	(35 - 160)	SW846 8260B
1,1-Dichloroethane	102	(70 - 135)	SW846 8260B
2-Butanone	83	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	97	(85 - 115)	SW846 8260B
Chloroform	97	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	107	(65 - 130)	SW846 8260B
Carbon tetrachloride	115	(65 - 140)	SW846 8260B
1,2-Dichloroethane	85	(70 - 130)	SW846 8260B
Benzene	98	(80 - 120)	SW846 8260B
Trichloroethene	87	(70 - 125)	SW846 8260B
1,2-Dichloropropane	91	(75 - 125)	SW846 8260B
Bromodichloromethane	83	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	85	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	102	(55 - 140)	SW846 8260B
Toluene	100	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	99	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	97	(75 - 125)	SW846 8260B
2-Hexanone	83	(55 - 130)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H190431 **Work Order #...:** ML2TV1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H250000-141

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
4-Methyl-2-pentanone	**83**	**(60 - 135)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	102	(85 - 115)
1,2-Dichloroethane-d4	93	(70 - 120)
4-Bromofluorobenzene	95	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H190431 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H220000-135 **Prep Batch #...:** 1234135					
Uranium	107	(80 - 120)	SW846 6020A	08/22-08/24/11	MLWFC1AC
		Dilution Factor: 1		Analysis Time..: 03:43	
LCS Lot-Sample#: F1H220000-136 **Prep Batch #...:** 1234136					
Arsenic	105	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1A2
		Dilution Factor: 1		Analysis Time..: 20:14	
Silver	94	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1A3
		Dilution Factor: 1		Analysis Time..: 20:14	
Aluminum	109	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1A4
		Dilution Factor: 1		Analysis Time..: 20:14	
Barium	108	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1A5
		Dilution Factor: 1		Analysis Time..: 20:14	
Beryllium	116	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1A6
		Dilution Factor: 1		Analysis Time..: 20:14	
Calcium	105	(80 - 120)	SW846 6010C	08/22-08/26/11	MLWFE1A7
		Dilution Factor: 1		Analysis Time..: 17:30	
Cadmium	107	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1A8
		Dilution Factor: 1		Analysis Time..: 20:14	
Cobalt	104	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1A9
		Dilution Factor: 1		Analysis Time..: 20:14	
Chromium	104	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CA
		Dilution Factor: 1		Analysis Time..: 20:14	
Copper	104	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CC
		Dilution Factor: 1		Analysis Time..: 20:14	
Iron	106	(80 - 120)	SW846 6010C	08/22-08/26/11	MLWFE1CD
		Dilution Factor: 1		Analysis Time..: 17:30	
Magnesium	100	(80 - 120)	SW846 6010C	08/22-08/26/11	MLWFE1CE
		Dilution Factor: 1		Analysis Time..: 17:30	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H190431 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	108	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CF
		Dilution Factor: 1	Analysis Time..: 20:14		
Sodium	103	(80 - 120)	SW846 6010C	08/22-08/26/11	MLWFE1CG
		Dilution Factor: 1	Analysis Time..: 17:30		
Nickel	104	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CH
		Dilution Factor: 1	Analysis Time..: 20:14		
Lead	103	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CJ
		Dilution Factor: 1	Analysis Time..: 20:14		
Antimony	107	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CK
		Dilution Factor: 1	Analysis Time..: 20:14		
Selenium	106	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CL
		Dilution Factor: 1	Analysis Time..: 20:14		
Strontium	100	(80 - 120)	SW846 6010C	08/22-08/26/11	MLWFE1CM
		Dilution Factor: 1	Analysis Time..: 17:30		
Thallium	100	(80 - 120)	SW846 6010C	08/22-08/28/11	MLWFE1CN
		Dilution Factor: 1	Analysis Time..: 14:42		
Vanadium	105	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CP
		Dilution Factor: 1	Analysis Time..: 20:14		
Zinc	113	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CQ
		Dilution Factor: 1	Analysis Time..: 20:14		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H190431 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLX571AC	LCS Lot-Sample#: F1H190000-100		
	97	(90 - 110)	MCAWW 300.0A	08/19/11	1231100
		Dilution Factor: 1	Analysis Time..: 12:51		
Fluoride		Work Order #: MLX581AC	LCS Lot-Sample#: F1H190000-101		
	99	(90 - 110)	MCAWW 300.0A	08/19/11	1231101
		Dilution Factor: 1	Analysis Time..: 12:51		
Nitrate		Work Order #: MLX6A1AC	LCS Lot-Sample#: F1H190000-102		
	99	(90 - 110)	MCAWW 300.0A	08/19/11	1231102
		Dilution Factor: 1	Analysis Time..: 12:51		
Nitrite		Work Order #: MLX6F1AC	LCS Lot-Sample#: F1H190000-103		
	100	(90 - 110)	MCAWW 300.0A	08/19/11	1231103
		Dilution Factor: 1	Analysis Time..: 12:51		
Phosphate as P, Ortho		Work Order #: MLX6H1AC	LCS Lot-Sample#: F1H190000-104		
	101	(90 - 110)	MCAWW 300.0A	08/19/11	1231104
		Dilution Factor: 1	Analysis Time..: 12:51		
Sulfate		Work Order #: MLX6J1AC	LCS Lot-Sample#: F1H190000-105		
	97	(90 - 110)	MCAWW 300.0A	08/19/11	1231105
		Dilution Factor: 1	Analysis Time..: 12:51		
Total Alkalinity		Work Order #: ML3DL1AC	LCS Lot-Sample#: F1H260000-032		
	94	(90 - 110)	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: ML3DL1AD	LCS Lot-Sample#: F1H260000-032		
	94	(90 - 110)	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: ML0CP1AC	LCS Lot-Sample#: F1H240000-026		
	98	(90 - 113)	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H190431 Work Order #...: MLT471CG-MS Matrix.....: WATER
MS Lot-Sample #: F1H190431-007 MLT471CH-MSD
Date Sampled...: 08/18/11 08:25 Date Received..: 08/19/11
Prep Date.....: 08/24/11 Analysis Date..: 08/25/11
Prep Batch #...: 1237141 Analysis Time..: 01:24
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	82	(70 - 130)			SW846 8260B
	88	(70 - 130)	6.3	(0-20)	SW846 8260B
Dibromochloromethane	91	(60 - 135)			SW846 8260B
	96	(60 - 135)	5.6	(0-20)	SW846 8260B
Vinyl chloride	89	(50 - 145)			SW846 8260B
	86	(50 - 145)	3.3	(0-20)	SW846 8260B
Bromomethane	86	(30 - 145)			SW846 8260B
	89	(30 - 145)	3.9	(0-20)	SW846 8260B
Chloroethane	91	(60 - 135)			SW846 8260B
	91	(60 - 135)	0.51	(0-20)	SW846 8260B
Acetone	56	(40 - 140)			SW846 8260B
	65	(40 - 140)	15	(0-20)	SW846 8260B
1,1-Dichloroethene	106	(70 - 130)			SW846 8260B
	114	(70 - 130)	4.0	(0-20)	SW846 8260B
Methylene chloride	81	(55 - 140)			SW846 8260B
	88	(55 - 140)	8.0	(0-20)	SW846 8260B
Carbon disulfide	91	(35 - 160)			SW846 8260B
	96	(35 - 160)	4.9	(0-20)	SW846 8260B
1,1-Dichloroethane	125	(70 - 135)			SW846 8260B
	142 a	(70 - 135)	5.2	(0-20)	SW846 8260B
2-Butanone	86	(30 - 150)			SW846 8260B
	86	(30 - 150)	0.17	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	108	(85 - 115)			SW846 8260B
	124 a	(85 - 115)	6.0	(0-20)	SW846 8260B
Chloroform	101	(65 - 135)			SW846 8260B
	99	(65 - 135)	2.2	(0-20)	SW846 8260B
1,1,1-Trichloroethane	119	(65 - 130)			SW846 8260B
	136 a	(65 - 130)	6.7	(0-20)	SW846 8260B
Carbon tetrachloride	108	(65 - 140)			SW846 8260B
	108	(65 - 140)	0.83	(0-20)	SW846 8260B
1,2-Dichloroethane	87	(70 - 130)			SW846 8260B
	91	(70 - 130)	4.5	(0-20)	SW846 8260B
Benzene	98	(80 - 120)			SW846 8260B
	102	(80 - 120)	4.0	(0-20)	SW846 8260B
Trichloroethene	109	(70 - 125)			SW846 8260B
	111	(70 - 125)	1.1	(0-20)	SW846 8260B
1,2-Dichloropropane	101	(75 - 125)			SW846 8260B
	100	(75 - 125)	0.49	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H190431 Work Order #...: MLT471CG-MS Matrix.....: WATER
MS Lot-Sample #: F1H190431-007 MLT471CH-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	87	(75 - 120)			SW846 8260B
	86	(75 - 120)	0.62	(0-20)	SW846 8260B
1,1,2-Trichloroethane	86	(75 - 125)			SW846 8260B
	87	(75 - 125)	1.3	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	96	(55 - 140)			SW846 8260B
	101	(55 - 140)	5.0	(0-20)	SW846 8260B
Toluene	104	(75 - 120)			SW846 8260B
	102	(75 - 120)	1.3	(0-20)	SW846 8260B
1,3-Dichlorobenzene	104	(75 - 125)			SW846 8260B
	104	(75 - 125)	0.48	(0-20)	SW846 8260B
1,4-Dichlorobenzene	94	(75 - 125)			SW846 8260B
	101	(75 - 125)	7.4	(0-20)	SW846 8260B
2-Hexanone	85	(55 - 130)			SW846 8260B
	91	(55 - 130)	6.6	(0-20)	SW846 8260B
4-Methyl-2-pentanone	87	(60 - 135)			SW846 8260B
	88	(60 - 135)	1.9	(0-20)	SW846 8260B
Chlorobenzene	103	(80 - 120)			SW846 8260B
	101	(80 - 120)	2.5	(0-20)	SW846 8260B
Bromoform	78	(70 - 130)			SW846 8260B
	83	(70 - 130)	5.0	(0-20)	SW846 8260B
Ethylbenzene	108	(75 - 125)			SW846 8260B
	103	(75 - 125)	5.1	(0-20)	SW846 8260B
Styrene	104	(65 - 135)			SW846 8260B
	108	(65 - 135)	4.6	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	412 a	(65 - 130)			SW846 8260B
	437 a	(65 - 130)	5.9	(0-20)	SW846 8260B
Tetrachloroethene	59	(45 - 150)			SW846 8260B
	57	(45 - 150)	3.0	(0-20)	SW846 8260B
1,2-Dichlorobenzene	95	(70 - 120)			SW846 8260B
	100	(70 - 120)	5.3	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
	104	(85 - 120)
Dibromofluoromethane	98	(85 - 115)
	100	(85 - 115)
1,2-Dichloroethane-d4	91	(70 - 120)
	94	(70 - 120)
4-Bromofluorobenzene	94	(75 - 120)
	95	(75 - 120)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H190431 **Work Order #...:** MLT471CG-MS **Matrix.....:** WATER
MS Lot-Sample #: F1H190431-007 MLT471CH-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H190431 **Matrix.....:** WATER
Date Sampled...: 08/18/11 08:25 **Date Received..:** 08/19/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H190431-001 **Prep Batch #...:** 1234135							
Uranium	105	(80 - 120)			SW846 6020A	08/22-08/24/11	MLT391A5
	102	(80 - 120)	2.9	(0-20)	SW846 6020A	08/22-08/24/11	MLT391A6
		Dilution Factor: 1					
		Analysis Time..: 04:03					
MS Lot-Sample #: F1H190431-001 **Prep Batch #...:** 1234136							
Aluminum	105	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391CC
	105	(80 - 120)	0.16	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CD
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Antimony	102	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391C9
	101	(80 - 120)	0.18	(0-20)	SW846 6010C	08/22-08/27/11	MLT391DA
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Arsenic	102	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391A7
	102	(80 - 120)	0.24	(0-20)	SW846 6010C	08/22-08/27/11	MLT391A8
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Barium	103	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391CE
	103	(80 - 120)	0.10	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CF
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Beryllium	110	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391CG
	110	(80 - 120)	0.02	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CH
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Cadmium	98	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391CL
	98	(80 - 120)	0.09	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CM
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Calcium	41 N	(80 - 120)			SW846 6010C	08/22-08/26/11	MLT391CJ
	23 N	(80 - 120)	0.84	(0-20)	SW846 6010C	08/22-08/26/11	MLT391CK
		Dilution Factor: 10					
		Analysis Time..: 19:55					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H190431 **Matrix.....:** WATER
Date Sampled...: 08/18/11 08:25 **Date Received..:** 08/19/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	97	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391CQ
	97	(80 - 120)	0.09	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CR
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Cobalt	95	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391CN
	95	(80 - 120)	0.12	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CP
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Copper	99	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391CT
	99	(80 - 120)	0.30	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CU
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Iron	101	(80 - 120)			SW846 6010C	08/22-08/26/11	MLT391CV
	101	(80 - 120)	0.08	(0-20)	SW846 6010C	08/22-08/26/11	MLT391CW
		Dilution Factor: 1					
		Analysis Time..: 17:49					
Lead	94	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391C7
	94	(80 - 120)	0.48	(0-20)	SW846 6010C	08/22-08/27/11	MLT391C8
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Magnesium	93	(80 - 120)			SW846 6010C	08/22-08/26/11	MLT391CX
	97	(80 - 120)	1.0	(0-20)	SW846 6010C	08/22-08/26/11	MLT391C0
		Dilution Factor: 1					
		Analysis Time..: 17:49					
Manganese	100	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391C1
	100	(80 - 120)	0.31	(0-20)	SW846 6010C	08/22-08/27/11	MLT391C2
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Nickel	94	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391C5
	95	(80 - 120)	0.23	(0-20)	SW846 6010C	08/22-08/27/11	MLT391C6
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Selenium	101	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391DC
	102	(80 - 120)	1.2	(0-20)	SW846 6010C	08/22-08/27/11	MLT391DD
		Dilution Factor: 1					
		Analysis Time..: 20:33					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H190431 **Matrix.....:** WATER
Date Sampled...: 08/18/11 08:25 **Date Received..:** 08/19/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	91	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391A9
	90	(80 - 120)	0.40	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CA
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Sodium	33 N	(80 - 120)			SW846 6010C	08/22-08/26/11	MLT391C3
	16 N	(80 - 120)	0.76	(0-20)	SW846 6010C	08/22-08/26/11	MLT391C4
		Dilution Factor: 10					
		Analysis Time..: 19:55					
Strontium	94	(80 - 120)			SW846 6010C	08/22-08/26/11	MLT391DE
	92	(80 - 120)	0.80	(0-20)	SW846 6010C	08/22-08/26/11	MLT391DF
		Dilution Factor: 10					
		Analysis Time..: 19:55					
Thallium	92	(80 - 120)			SW846 6010C	08/22-08/28/11	MLT391DG
	92	(80 - 120)	0.78	(0-20)	SW846 6010C	08/22-08/28/11	MLT391DH
		Dilution Factor: 1					
		Analysis Time..: 15:14					
Vanadium	99	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391DJ
	99	(80 - 120)	0.04	(0-20)	SW846 6010C	08/22-08/27/11	MLT391DK
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Zinc	107	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391DL
	108	(80 - 120)	0.36	(0-20)	SW846 6010C	08/22-08/27/11	MLT391DM
		Dilution Factor: 1					
		Analysis Time..: 20:33					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H190431 **Matrix.....:** WATER
Date Sampled...: 08/18/11 11:10 **Date Received..:** 08/19/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLT5H1CM		MS Lot-Sample #: F1H190431-011	
	99	(90 - 110)	MCAWW 300.0A	08/19/11	1231100
		Dilution Factor: 100	Analysis Time..: 06:45		
Fluoride		Work Order #...: MLT5H1CP		MS Lot-Sample #: F1H190431-011	
	97	(90 - 110)	MCAWW 300.0A	08/19/11	1231101
		Dilution Factor: 1	Analysis Time..: 05:59		
Nitrate		Work Order #...: MLT5H1CR		MS Lot-Sample #: F1H190431-011	
	94	(90 - 110)	MCAWW 300.0A	08/19/11	1231102
		Dilution Factor: 1	Analysis Time..: 05:59		
Nitrite		Work Order #...: MLT5H1CU		MS Lot-Sample #: F1H190431-011	
	76 N	(90 - 110)	MCAWW 300.0A	08/19/11	1231103
		Dilution Factor: 5	Analysis Time..: 06:14		
Phosphate as P, Ortho		Work Order #...: MLT5H1CW		MS Lot-Sample #: F1H190431-011	
	61 N	(90 - 110)	MCAWW 300.0A	08/19/11	1231104
		Dilution Factor: 1	Analysis Time..: 05:59		
Sulfate		Work Order #...: MLT5H1C0		MS Lot-Sample #: F1H190431-011	
	103	(90 - 110)	MCAWW 300.0A	08/19/11	1231105
		Dilution Factor: 10	Analysis Time..: 06:30		
Total Alkalinity		Work Order #...: MLXMN1EH		MS Lot-Sample #: F1H230464-002	
	144 N	(80 - 120)	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H190431 **Work Order #...:** MLT5H-SMP MLT5H-DUP **Matrix.....:** WATER

Date Sampled...: 08/18/11 11:10 **Date Received..:** 08/19/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H190431-011		
	99.2	97.0	mg/L	2.2	(0-20)	MCAWW 300.0A	08/19/11	1231100
		Dilution Factor: 100				Analysis Time..: 06:45		
Fluoride						SD Lot-Sample #: F1H190431-011		
	0.66	0.64	mg/L	2.1	(0-20)	MCAWW 300.0A	08/19/11	1231101
		Dilution Factor: 1				Analysis Time..: 05:59		
Nitrate						SD Lot-Sample #: F1H190431-011		
	0.64	0.62	mg/L	3.7	(0-20)	MCAWW 300.0A	08/19/11	1231102
		Dilution Factor: 1				Analysis Time..: 05:59		
Nitrite						SD Lot-Sample #: F1H190431-011		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/19/11	1231103
		Dilution Factor: 5				Analysis Time..: 06:14		
Phosphate as P, Ortho						SD Lot-Sample #: F1H190431-011		
	0.16 B,J	0.079 B	mg/L	69	(0-20)	MCAWW 300.0A	08/19/11	1231104
		Dilution Factor: 1				Analysis Time..: 05:59		
Sulfate						SD Lot-Sample #: F1H190431-011		
	90.3	90.5	mg/L	0.24	(0-20)	MCAWW 300.0A	08/19/11	1231105
		Dilution Factor: 10				Analysis Time..: 06:30		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H190431 **Work Order #...:** MLT47-SMP MLT47-DUP **Matrix.....:** WATER

Date Sampled...: 08/18/11 08:25 **Date Received..:** 08/19/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H190431-007		
	1340	1380	mg/L	2.4	(0-0.0)	MCAWW 160.1	08/24-08/25/11	1236026
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H190431 **Work Order #...:** MLXMN-SMP MLXMN-DUP **Matrix.....:** WATER

Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #:	F1H230464-002	
	382	388	mg/L	1.5	(0-20)	MCAWW 310.1	08/26/11	1238032

Dilution Factor: 1 Analysis Time..: 00:00

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H190431-001
Work Order: MLT39
Matrix: WATER

Date Collected: 08/18/11 0825
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 56
Uranium 234	21.0		2.0	0.1	0.06	08/23/11	08/29/11
Uranium 235/236	1.38		0.32	0.10	0.04	08/23/11	08/29/11
Uranium 238	21.3		2.1	0.1	0.07	08/23/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H190431-002
Work Order: MLT4E
Matrix: WATER

Date Collected: 08/18/11 0850
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1235027**	**Yld % 84**
Uranium 234	0.019	U	0.030	0.100	0.050	08/23/11	08/27/11
Uranium 235/236	0.011	U	0.021	0.100	0.028	08/23/11	08/27/11
Uranium 238	0.004	U	0.018	0.100	0.045	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H190431-003
Work Order: MLT4H
Matrix: WATER

Date Collected: 08/18/11 0935
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 57
Uranium 234	14.0		1.4	0.1	0.08	08/23/11	08/27/11
Uranium 235/236	0.63		0.20	0.10	0.08	08/23/11	08/27/11
Uranium 238	12.4		1.3	0.1	0.06	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW610D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H190431-004
Work Order: MLT4K
Matrix: WATER

Date Collected: 08/18/11 1110
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 81
Uranium 234	2.56		0.36	0.10	0.04	08/23/11	08/27/11
Uranium 235/236	0.130		0.075	0.100	0.046	08/23/11	08/27/11
Uranium 238	2.61		0.37	0.10	0.04	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW200001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H190431-005
Work Order: MLT4V
Matrix: WATER

Date Collected: 08/18/11 1205
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 88
Uranium 234	3.89		0.49	0.10	0.05	08/23/11	08/27/11
Uranium 235/236	0.24		0.10	0.10	0.03	08/23/11	08/27/11
Uranium 238	3.82		0.48	0.10	0.02	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AM2100001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H190431-006
Work Order: MLT46
Matrix: WATER

Date Collected: 08/18/11 1245
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1235027		Yld % 66
Uranium 234	1.03		0.23	0.10	0.05	08/23/11	08/27/11
Uranium 235/236	0.037	U	0.047	0.100	0.060	08/23/11	08/27/11
Uranium 238	0.93		0.21	0.10	0.03	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001

Radiochemistry

Lab Sample ID: F1H190431-007
Work Order: MLT47
Matrix: WATER

Date Collected: 08/18/11 0825
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 62
Uranium 234	18.6		1.8	0.1	0.06	08/23/11	08/27/11
Uranium 235/236	1.02		0.25	0.10	0.06	08/23/11	08/27/11
Uranium 238	19.1		1.8	0.1	0.06	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001

Radiochemistry

Lab Sample ID: F1H190431-008
Work Order: MLT5A
Matrix: WATER

Date Collected: 08/18/11 0850
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1235027**	**Yld % 74**
Uranium 234	0.016	U	0.027	0.100	0.042	08/23/11	08/27/11
Uranium 235/236	0.012	U	0.023	0.100	0.031	08/23/11	08/27/11
Uranium 238	0.007	U	0.019	0.100	0.042	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001

Radiochemistry

Lab Sample ID: F1H190431-009
Work Order: MLT5D
Matrix: WATER

Date Collected: 08/18/11 0935
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 55
Uranium 234	13.2		1.4	0.1	0.05	08/23/11	08/27/11
Uranium 235/236	0.59		0.19	0.10	0.07	08/23/11	08/27/11
Uranium 238	12.7		1.3	0.1	0.06	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW610D0001

Radiochemistry

Lab Sample ID: F1H190431-011
Work Order: MLT5H
Matrix: WATER

Date Collected: 08/18/11 1110
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 72
Uranium 234	2.54		0.37	0.10	0.03	08/23/11	08/27/11
Uranium 235/236	0.104		0.070	0.100	0.031	08/23/11	08/27/11
Uranium 238	2.66		0.39	0.10	0.03	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW200001

Radiochemistry

Lab Sample ID: F1H190431-012
Work Order: MLT54
Matrix: WATER

Date Collected: 08/18/11 1205
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 67
Uranium 234	4.50		0.56	0.10	0.03	08/23/11	08/27/11
Uranium 235/236	0.23		0.11	0.10	0.03	08/23/11	08/27/11
Uranium 238	4.27		0.54	0.10	0.03	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW210001

Radiochemistry

Lab Sample ID: F1H190431-013
Work Order: MLT6E
Matrix: WATER

Date Collected: 08/18/11 1245
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1235027		Yld % 76
Uranium 234	0.73		0.18	0.10	0.05	08/23/11	08/27/11
Uranium 235/236	0.058		0.052	0.100	0.031	08/23/11	08/27/11
Uranium 238	0.79		0.18	0.10	0.04	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H190431
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID / Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1235027		Yld % 80	F1H230000-027B
Uranium 234	0.025	U	0.034	0.100	0.053	08/23/11	08/29/11
Uranium 235/236	-0.0026	U	0.0051	0.100	0.047	08/23/11	08/29/11
Uranium 238	0.006	U	0.017	0.100	0.037	08/23/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F1H190431
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ+/-)	% Yld	% Rec	QC Control Limits	Lab Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**A-01-R MOD**				**F1H230000-027C**	
Uranium 234		3.26	2.86	0.39	85	88	(76 - 136)		
	Spk 2	3.26	3.09	0.41	87	95	(76 - 136)	8	%RPD
Uranium 238		3.39	3.32	0.43	85	98	(76 - 134)		
	Spk 2	3.39	3.39	0.43	87	100	(76 - 134)	2	%RPD
		Batch #:	1235027		Analysis Date:		08/29/11		

NOTE(S):

Calculations are performed before rounding to avoid round-off error in calculated results

TestAmerica St. Louis

F1H190431

CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guteri Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc | #SMPS in LOT: 14

Date Received: 2011-08-19

Analytical Due Date: 2011-08-26

Report Due Date: 2011-08-29

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
1	A04DMW710DD0001 DISSOLVED			2011-08-18 / 825	MLT39	WATER

SAMPLE COMMENTS:

SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
2	A04DFB710DD0001 DISSOLVED			2011-08-18 / 850	MLT4E	WATER

SAMPLE COMMENTS:

MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H190431

CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 14

Date Received: 2011-08-19

Analytical Due Date: 2011-08-26

Report Due Date: 2011-08-29

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chrometography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
3	* A04DMW712DD0001 DISSOLVED			2011-08-18 / 935	MLT4H	WATER

SAMPLE COMMENTS:

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H190431 CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300

Project Manager: LMF Quote #: 89251 SDG:

Project: Y40415 Guterl Steel

PO#: 697886 Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 14

Date Received: 2011-08-19

Analytical Due Date: 2011-08-26

Report Due Date: 2011-08-29

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
4	A04AMW610D0001 DISSOLVED			2011-08-18 / 1110	MLT4K	WATER

SAMPLE COMMENTS:

NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

F1H190431

CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc | #SMPS In LOT: 14

Date Received: 2011-08-19

Analytical Due Date: 2011-08-26

Report Due Date: 2011-08-29

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
5	A04AMW200001 DISSOLVED			2011-08-18 / 1205	MLT4V	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
6	A04AM2100001 DISSOLVED			2011-08-18 / 1245	MLT46	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H190431

CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300

Date Received: 2011-08-19

Analytical Due Date: 2011-08-26

Report Due Date: 2011-08-29

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 14

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	A04DMW710DD0001			2011-08-18 / 825	MLT47	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GQ	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	A04DFB710DD0001			2011-08-18 / 850	MLT5A	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	A04DMW712DD0001			2011-08-18 / 935	MLT5D	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H190431 CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300,2-85

Project Manager: LMF | Quote #: 89251 | SDG:

Date Received: 2011-08-19

Project: Y40415 | Guterl Steel

Analytical Due Date: 2011-08-26

PO#: 697886 | Report to: Kevin Cronin

Report Due Date: 2011-08-29

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: B Standard Report

#SMPS In LOT: 14

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
10	A04BMW707DD0001			2011-08-18 / 1030	MLT5F	WATER

SAMPLE COMMENTS:

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
11	A04AMW610D0001			2011-08-18 / 1110	MLT5H	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H190431

CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300,2-85

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 14

Date Received: 2011-08-19

Analytical Due Date: 2011-08-26

Report Due Date: 2011-08-29

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
12	A04AMW200001			2011-08-18 / 1205	MLT54	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H190431 CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300,2-85

Project Manager: LMF Quote #: 89251 SDG: Date Received: 2011-08-19

Project: Y40415 Guteri Steel Analytical Due Date: 2011-08-26

PO#: 697886 Report to: Kevin Cronin Report Due Date: 2011-08-29

Client: 522706 Shaw Environmental & Infrastructure Inc #SMPS in LOT: 14 Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
13	A04AMW210001			2011-08-18 / 1245	MLT6E	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H190431

CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300,2-85

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-19

Analytical Due Date: 2011-08-26

Report Due Date: 2011-08-29

Report Type: B Standard Report

#SMPS In LOT: 14

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
14	TRIP BLANK #3			2011-08-18 / 0	MLT6H	WATER

SAMPLE COMMENTS:

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	

estAmerica St. Louis
'15 Rider Trail North
th City, MO 63045
ne 314.298.8566 fax 314.298.8757

Cur 180

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/18/2011	COC No: 011
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
ncinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below ____			SDG No.
3) 782-4807 FAX	☐ 2 weeks			
ject Name: Former Guterl Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
) #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
DMW710DD0001	8/18/2011	0825	Grab	GW	10	X		X	X	X	X	X	X	X					4xH 2x250 1x500 3xVA
DFB710DD0001	8/18/2011	0850	Grab	GW	10	X		X	X	X	X	X	X	X					↓ ↓ ↓ ↓
DMW712DD0001	8/18/2011	0935	Grab	GW	10	X		X	X	X	X	X	X	X					
BMW707DD0001	8/18/2011	1030	Grab	GW	3									X					3xVAL 40
AMW610D0001	8/18/2011	1110	Grab	GW	7	X		X	X	X	X	X	X						4xH 2x250 1x500
AMW200001	8/18/2011	1205	Grab	GW	7	X		X	X	X	X	X	X						↓ ↓ ↓
AMW210001	8/18/2011	1245	Grab	GW	7	X		X	X	X	X	X	X						
Blank #3	8/18/2011	--	TB	--	1									X					1xVAIL 40

servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

sible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

cial Instructions/QC Requirements & Comments:

	Company	Date/Time		Company	Date/Time
inquished by:	Company: Shaw E & I. Inc.	Date/Time: 8-18-11/1610	Received by:	BFLO	Date/Time: 08-18-11 16:10
inquished by:	Company: BFLO	Date/Time: 08-18-11 16:45	Received by:	BFLO	Date/Time: 8/18/11 16:50
inquished by:	Company: BFLO	Date/Time: 8/18/1617	Received by:	TA STL	Date/Time: 8/19/11 0910

TestAmerica St. Louis

9 of 99

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F1H190431 TestAmerica St. Louis

CUR Form #: 1 8 0

CONDITION UPON RECEIPT FORM

Client: SHAW ENVIRO

Quote No: 89251

COC/RFA No: 011

Initiated By: NVD Date: 8/19/11 Time: 0910

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*

1. 4485 0258 4649
2. 4485 0258 4650
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Sample Temperature (s):**

1. 4
2. 4
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler? NVD 8/19/11 NVD 8/19/11	8.	Y (N)	Are there custody seals present on bottles?
2.	Y N (N/A)	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

SAMPLE ID A04AMW610D000 IS ACTUALY LABELED AS A04AMW601D0001 AND WILL BE LOGGED PER C.O.C

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/22/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guterl Steel

Lot #: F1H230407

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

September 6, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H230407

This report contains the analytical results for the nine samples received under chain of custody by TestAmerica in St. Louis on August 23, 2011. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances

The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1237192
The CCV recoveries are outside the upper QC limit (greater than 20% D) for Bromomethane, Chloroethane, Trichlorofluoromethane and 1,2,3-Trichloropropane indicating a potential high bias for those analytes in the samples associated with this CCV. These analytes were not detected above the reporting limit or were not target analytes in the associated samples.

The LCS recovery for Bromomethane is outside the upper QC limit, indicating a potential positive bias for this analyte. This analyte was not observed above the reporting limit in the associated samples; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1H230407 (5): TRIP BLANK #5
F1H230407 (7): A02MW50001
F1H230407 (8): A02MW120001
F1H230407 (9): A02MW30001

The samples were analyzed at a dilution based upon laboratory screening information. The reporting limit has been adjusted for the dilution.

Affected Samples:
F1H230407 (7): A02MW50001

Batch: 124401
The MS/MSD analysis was not performed with this batch; the associated samples are dilutions only. The MS/MSD was performed with original analyses. An LCS/LCSD was performed to demonstrate accuracy and replicate precision.

The samples were analyzed at a dilution due to high concentrations of target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

The %RSD for Ethyl acetate exceeds the acceptance criteria. The analyte will not be reported from this ICAL.

The following compounds were removed from the initial calibration lowest point due to poor response. Ethyl ether, Methyl acetate, Acetontrile, Ethyl acetate, 2-Butanone, Isobutanol, 1,4-dioxane, 2-Nitropropane and Cyclohexanone. Addtionally, Acetone was removed from the lowest 2 points.

n-Propylbenzene and sec-Butylbenzene were removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration.

The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

Affected Samples:
F1H230407 (7): A02MW50001
F1H230407 (8): A02MW120001

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1236078
There was insufficient digestate volume for the analysis of thallium. The samples were re-prepared and the re-extract batch is 1242041.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

The serial dilution for sodium is outside of method acceptance criteria indicating matrix interference. All associated samples are flagged accordingly.

1236078-F1H230407-007
The MS (MSD) recovery for calcium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

1236078-F1H230407-002
The MS (MSD) recovery for strontium is outside the established QC limits. The RPD is within method acceptance criteria indicating matrix interference. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:
F1H230407 (1): A02MW600D0001 DISSOLVED
F1H230407 (2): A02MW50001 DISSOLVED
F1H230407 (3): A02MW120001 DISSOLVED
F1H230407 (4): A02MW30001 DISSOLVED
F1H230407 (6): A02M600D0001
F1H230407 (7): A02MW50001
F1H230407 (8): A02MW120001
F1H230407 (9): A02MW30001

The concentration of strontium in the CCB is greater than 2 times the MDL. The samples associated with this CCB exhibit concentrations greater than ten times the concentrations observed in the CCB.

Affected Samples:
F1H230407 (7): A02MW50001
F1H230407 (9): A02MW30001

Chloride (MCAWW 300.0A)

Batch: 1235141
The following samples were analyzed at a dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230407 (6): A02M600D0001
F1H230407 (7): A02MW50001
F1H230407 (9): A02MW30001

Nitrate (MCAWW 300.0A)

Batch: 1235143
The following samples were analyzed at a dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230407 (6): A02M600D0001
F1H230407 (7): A02MW50001
F1H230407 (9): A02MW30001

Sulfate (MCAWW 300.0A)

Batch: 1235146
The following samples were analyzed at a dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230407 (6): A02M600D0001
F1H230407 (7): A02MW50001
F1H230407 (8): A02MW120001
F1H230407 (9): A02MW30001

Fluoride (MCAWW 300.0A)

Batch: 1235142
The following samples were reported ND at a dilution, due to matrix interferences, which masked the target retention times in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230407 (6): A02M600D0001

Nitrite (MCAWW 300.0A)

Batch: 1235144
The following samples were reported ND at a dilution, due to matrix interferences, which masked the target retention times in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H230407 (6): A02M600D0001
F1H230407 (7): A02MW50001
F1H230407 (8): A02MW120001
F1H230407 (9): A02MW30001

Orthophosphate as P (MCAWW 300.0A)

Batch: 1235145
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H230407 (6): A02M600D0001
F1H230407 (7): A02MW50001
F1H230407 (8): A02MW120001
F1H230407 (9): A02MW30001

Filteralbe residue (TDS) (MCAWW 160.1)

Batch: 1238124
The sample was analyzed at a dilution based on high concentrations of target analytes. The reporting limit has been adjusted accordingly.

Affected Samples:
F1H230407 (6): A02M600D0001

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)
There was insufficient sample to perform the sample duplicate.

Affected Samples:
F1H230407 (1): A02MW600D0001 DISSOLVED
F1H230407 (2): A02MW50001 DISSOLVED
F1H230407 (3): A02MW120001 DISSOLVED
F1H230407 (4): A02MW30001 DISSOLVED
F1H230407 (6): A02M600D0001
F1H230407 (7): A02MW50001
F1H230407 (8): A02MW120001
F1H230407 (9): A02MW30001

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H230407

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H230407

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLW8C	001	A02MW600D0001 DISSOLVED	08/22/11	09:00
MLW8D	002	A02MW50001 DISSOLVED	08/22/11	11:05
MLW8E	003	A02MW120001 DISSOLVED	08/22/11	12:30
MLW8F	004	A02MW30001 DISSOLVED	08/22/11	13:45
MLW86	005	TRIP BLANK #5	08/22/11	
MLW88	006	A02M600D0001	08/22/11	09:00
MLW9L	007	A02MW50001	08/22/11	11:00
MLW9Q	008	A02MW120001	08/22/11	12:30
MLW9X	009	A02MW30001	08/22/11	13:45

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW600D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-001 Matrix.....: WATER
Date Sampled...: 08/22/11 09:00 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	**2.5**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLW8C1A3**
		Dilution Factor: 1		Analysis Time..: 06:29		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AD
		Dilution Factor: 1		Analysis Time..: 01:17		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AE
		Dilution Factor: 1		Analysis Time..: 01:17		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AC
		Dilution Factor: 1		Analysis Time..: 01:17		
Barium	**197**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8C1AF**
		Dilution Factor: 1		Analysis Time..: 01:17		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AG
		Dilution Factor: 1		Analysis Time..: 01:17		
Calcium	**369000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8C1AH**
		Dilution Factor: 10		Analysis Time..: 18:11		
Cadmium	**1.2 J**	**5**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8C1AJ**
		Dilution Factor: 1		Analysis Time..: 01:17		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AK
		Dilution Factor: 1		Analysis Time..: 01:17		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AL
		Dilution Factor: 1		Analysis Time..: 01:17		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AM
		Dilution Factor: 1		Analysis Time..: 01:17		
Iron	**322**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8C1AN**
		Dilution Factor: 1		Analysis Time..: 01:17		
Magnesium	**149000**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8C1AP**
		Dilution Factor: 10		Analysis Time..: 18:11		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW600D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**353**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8C1AQ**
		Dilution Factor: 1		Analysis Time..: 01:17		
Sodium	**1840000 E**	**50000**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLW8C1AR**
		Dilution Factor: 50		Analysis Time..: 15:10		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AT
		Dilution Factor: 1		Analysis Time..: 01:17		
Lead	**1.5 J**	**10**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8C1AU**
		Dilution Factor: 1		Analysis Time..: 01:17		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AV
		Dilution Factor: 1		Analysis Time..: 01:17		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AW
		Dilution Factor: 1		Analysis Time..: 01:17		
Strontium	**1340 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLW8C1AX**
		Dilution Factor: 10		Analysis Time..: 13:29		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1A1
		Dilution Factor: 1		Analysis Time..: 01:17		
Zinc	**611**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8C1A2**
		Dilution Factor: 1		Analysis Time..: 01:17		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW8C2A0
		Dilution Factor: 1		Analysis Time..: 17:10		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-002 Matrix.....: WATER
Date Sampled...: 08/22/11 11:05 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	**6.2**	1	ug/L	SW846 6020A	08/24-08/26/11	MLW8D1AE
		Dilution Factor: 1		Analysis Time..: 06:36		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AJ
		Dilution Factor: 1		Analysis Time..: 01:23		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AK
		Dilution Factor: 1		Analysis Time..: 01:23		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AH
		Dilution Factor: 1		Analysis Time..: 01:23		
Barium	**54.6**	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AL
		Dilution Factor: 1		Analysis Time..: 01:23		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AM
		Dilution Factor: 1		Analysis Time..: 01:23		
Calcium	**95200 N**	10000	ug/L	SW846 6010C	08/24-08/27/11	MLW8D1AN
		Dilution Factor: 10		Analysis Time..: 18:17		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AP
		Dilution Factor: 1		Analysis Time..: 01:23		
Cobalt	**5.6 J**	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AQ
		Dilution Factor: 1		Analysis Time..: 01:23		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AR
		Dilution Factor: 1		Analysis Time..: 01:23		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AT
		Dilution Factor: 1		Analysis Time..: 01:23		
Iron	**2970**	100	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AU
		Dilution Factor: 1		Analysis Time..: 01:23		
Magnesium	**21600**	1000	ug/L	SW846 6010C	08/24-08/27/11	MLW8D1AV
		Dilution Factor: 1		Analysis Time..: 16:35		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	292	15	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AW
		Dilution Factor: 1		Analysis Time..: 01:23		
Sodium	10600 E	1000	ug/L	SW846 6010C	08/24-08/27/11	MLW8D1AX
		Dilution Factor: 1		Analysis Time..: 16:35		
Nickel	524	40	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1A0
		Dilution Factor: 1		Analysis Time..: 01:23		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1A1
		Dilution Factor: 1		Analysis Time..: 01:23		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1A2
		Dilution Factor: 1		Analysis Time..: 01:23		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1A3
		Dilution Factor: 1		Analysis Time..: 01:23		
Strontium	269 N	50	ug/L	SW846 6010C	08/24-08/30/11	MLW8D1A4
		Dilution Factor: 10		Analysis Time..: 13:35		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AC
		Dilution Factor: 1		Analysis Time..: 01:23		
Zinc	7.8 J	20	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AD
		Dilution Factor: 1		Analysis Time..: 01:23		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW8D2AA
		Dilution Factor: 1		Analysis Time..: 17:16		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-003 **Matrix.....:** WATER
Date Sampled...: 08/22/11 12:30 **Date Received..:** 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	**3.8**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLW8E1AE**
		Dilution Factor: 1		Analysis Time..: 07:02		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AJ
		Dilution Factor: 1		Analysis Time..: 01:49		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AK
		Dilution Factor: 1		Analysis Time..: 01:49		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AH
		Dilution Factor: 1		Analysis Time..: 01:49		
Barium	**76.4**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8E1AL**
		Dilution Factor: 1		Analysis Time..: 01:49		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AM
		Dilution Factor: 1		Analysis Time..: 01:49		
Calcium	**62400 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8E1AN**
		Dilution Factor: 10		Analysis Time..: 18:43		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AP
		Dilution Factor: 1		Analysis Time..: 01:49		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AQ
		Dilution Factor: 1		Analysis Time..: 01:49		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AR
		Dilution Factor: 1		Analysis Time..: 01:49		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AT
		Dilution Factor: 1		Analysis Time..: 01:49		
Iron	**217**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8E1AU**
		Dilution Factor: 1		Analysis Time..: 01:49		
Magnesium	**14200**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8E1AV**
		Dilution Factor: 1		Analysis Time..: 17:01		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**344**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8E1AW**
		Dilution Factor: 1		Analysis Time..: 01:49		
Sodium	**1960 E**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8E1AX**
		Dilution Factor: 1		Analysis Time..: 17:01		
Nickel	**227**	**40**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8E1A0**
		Dilution Factor: 1		Analysis Time..: 01:49		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1A1
		Dilution Factor: 1		Analysis Time..: 01:49		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1A2
		Dilution Factor: 1		Analysis Time..: 01:49		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1A3
		Dilution Factor: 1		Analysis Time..: 01:49		
Strontium	**183 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLW8E1A4**
		Dilution Factor: 10		Analysis Time..: 14:00		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AC
		Dilution Factor: 1		Analysis Time..: 01:49		
Zinc	**42.0**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8E1AD**
		Dilution Factor: 1		Analysis Time..: 01:49		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW8E2AA
		Dilution Factor: 1		Analysis Time..: 17:42		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-004 Matrix.....: WATER
Date Sampled...: 08/22/11 13:45 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	**2.5**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLW8F1AE**
		Dilution Factor: 1		Analysis Time..: 07:16		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AJ
		Dilution Factor: 1		Analysis Time..: 02:02		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AK
		Dilution Factor: 1		Analysis Time..: 02:02		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AH
		Dilution Factor: 1		Analysis Time..: 02:02		
Barium	**81.1**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8F1AL**
		Dilution Factor: 1		Analysis Time..: 02:02		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AM
		Dilution Factor: 1		Analysis Time..: 02:02		
Calcium	**103000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8F1AN**
		Dilution Factor: 10		Analysis Time..: 19:09		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AP
		Dilution Factor: 1		Analysis Time..: 02:02		
Cobalt	**20.6 J**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8F1AQ**
		Dilution Factor: 1		Analysis Time..: 02:02		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AR
		Dilution Factor: 1		Analysis Time..: 02:02		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AT
		Dilution Factor: 1		Analysis Time..: 02:02		
Iron	**3330**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8F1AU**
		Dilution Factor: 1		Analysis Time..: 02:02		
Magnesium	**26900**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8F1AV**
		Dilution Factor: 1		Analysis Time..: 17:14		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**348**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8F1AW**
		Dilution Factor: 1		Analysis Time..: 02:02		
Sodium	**10200 E**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8F1AX**
		Dilution Factor: 1		Analysis Time..: 17:14		
Nickel	**954**	**40**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8F1A0**
		Dilution Factor: 1		Analysis Time..: 02:02		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1A1
		Dilution Factor: 1		Analysis Time..: 02:02		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1A2
		Dilution Factor: 1		Analysis Time..: 02:02		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1A3
		Dilution Factor: 1		Analysis Time..: 02:02		
Strontium	**236 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLW8F1A4**
		Dilution Factor: 10		Analysis Time..: 14:13		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AC
		Dilution Factor: 1		Analysis Time..: 02:02		
Zinc	**26.4**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8F1AD**
		Dilution Factor: 1		Analysis Time..: 02:02		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW8F2AA
		Dilution Factor: 1		Analysis Time..: 17:55		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #5

GC/MS Volatiles

Lot-Sample #...: F1H230407-005 **Work Order #...:** MLW861AA **Matrix.....:** WATER
Date Sampled...: 08/22/11 **Date Received..:** 08/23/11
Prep Date.....: 08/25/11 **Analysis Date..:** 08/25/11
Prep Batch #...: 1237192 **Analysis Time..:** 22:57
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #5

GC/MS Volatiles

Lot-Sample #...: F1H230407-005 **Work Order #...:** MLW861AA **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	113	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
1,2-Dichloroethane-d4	98	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02M600D0001

TOTAL Metals

Lot-Sample #...: F1H230407-006 **Matrix.....:** WATER
Date Sampled...: 08/22/11 09:00 **Date Received..:** 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	**2.4**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLW881A4**
		Dilution Factor: 1		Analysis Time..: 07:36		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW881AE
		Dilution Factor: 1		Analysis Time..: 02:08		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW881AF
		Dilution Factor: 1		Analysis Time..: 02:08		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW881AD
		Dilution Factor: 1		Analysis Time..: 02:08		
Barium	**192**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW881AG**
		Dilution Factor: 1		Analysis Time..: 02:08		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW881AH
		Dilution Factor: 1		Analysis Time..: 02:08		
Calcium	**380000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW881AJ**
		Dilution Factor: 10		Analysis Time..: 19:15		
Cadmium	**1.2 J**	**5**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW881AK**
		Dilution Factor: 1		Analysis Time..: 02:08		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW881AL
		Dilution Factor: 1		Analysis Time..: 02:08		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW881AM
		Dilution Factor: 1		Analysis Time..: 02:08		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW881AN
		Dilution Factor: 1		Analysis Time..: 02:08		
Iron	**648**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW881AP**
		Dilution Factor: 1		Analysis Time..: 02:08		
Magnesium	**152000**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW881AQ**
		Dilution Factor: 10		Analysis Time..: 19:15		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02M600D0001

TOTAL Metals

Lot-Sample #...: F1H230407-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**353**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW881AR**
		Dilution Factor: 1		Analysis Time..: 02:08		
Sodium	**1830000 E**	**50000**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLW881AT**
		Dilution Factor: 50		Analysis Time..: 15:16		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	MLW881AU
		Dilution Factor: 1		Analysis Time..: 02:08		
Lead	**16.4**	**10**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW881AV**
		Dilution Factor: 1		Analysis Time..: 02:08		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW881AW
		Dilution Factor: 1		Analysis Time..: 02:08		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW881AX
		Dilution Factor: 1		Analysis Time..: 02:08		
Strontium	**1280 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLW881A0**
		Dilution Factor: 10		Analysis Time..: 14:19		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW881A2
		Dilution Factor: 1		Analysis Time..: 02:08		
Zinc	**614**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW881A3**
		Dilution Factor: 1		Analysis Time..: 02:08		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW882A1
		Dilution Factor: 1		Analysis Time..: 18:14		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02M600D0001

General Chemistry

Lot-Sample #...: F1H230407-006 **Work Order #...:** MLW88 **Matrix.....:** WATER
Date Sampled...: 08/22/11 09:00 **Date Received..:** 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	2660	400	mg/L	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 2000		Analysis Time..: 01:30		
Fluoride	0.13 B	1.0	mg/L	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 10		Analysis Time..: 12:57		
Nitrate	ND	0.20	mg/L	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 10		Analysis Time..: 12:57		
Nitrite	ND	40.0	mg/L	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 2000		Analysis Time..: 01:30		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1		Analysis Time..: 12:40		
Sulfate	209	100	mg/L	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 200		Analysis Time..: 01:13		
Total Alkalinity	524	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	5400	1000	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 100		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001

GC/MS Volatiles

Lot-Sample #...: F1H230407-007 Work Order #...: MLW9L1CE Matrix.....: WATER
Date Sampled...: 08/22/11 11:00 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/25/11
Prep Batch #...: 1237192 Analysis Time..: 23:51
Dilution Factor: 10
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	20	ug/L
Benzene	**3.2 J,D**	**10**	**ug/L**
Bromodichloromethane	ND	10	ug/L
Bromoform	ND	10	ug/L
Bromomethane	ND	20	ug/L
2-Butanone	ND	50	ug/L
Carbon disulfide	ND	20	ug/L
Carbon tetrachloride	ND	10	ug/L
Chlorobenzene	ND	20	ug/L
Dibromochloromethane	ND	10	ug/L
Chloroethane	**130 D**	**20**	**ug/L**
Chloroform	**7.0 J,D**	**10**	**ug/L**
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,2-Dichloroethane	ND	10	ug/L
1,1-Dichloroethene	**20 D**	**10**	**ug/L**
1,2-Dichloroethene (total)	**17 J,D**	**20**	**ug/L**
1,2-Dichloropropane	ND	10	ug/L
cis-1,3-Dichloropropene	ND	10	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	10	ug/L
2-Hexanone	ND	50	ug/L
Methylene chloride	ND	10	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Styrene	ND	10	ug/L
1,1,2,2-Tetrachloroethane	ND	10	ug/L
Tetrachloroethene	**1.9 J,D**	**10**	**ug/L**
Toluene	ND	10	ug/L
1,1,1-Trichloroethane	**71 D**	**10**	**ug/L**
1,1,2-Trichloroethane	ND	10	ug/L
Trichloroethene	**12 D**	**10**	**ug/L**
Vinyl chloride	**7.5 J,D**	**20**	**ug/L**
Xylenes (total)	ND	50	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001

GC/MS Volatiles

Lot-Sample #...: F1H230407-007 Work Order #...: MLW9L1CE Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
1,2-Dichloroethane-d4	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001

GC/MS Volatiles

Lot-Sample #...: F1H230407-007	Work Order #...: MLW9L2CE	Matrix.....: WATER	
Date Sampled...: 08/22/11 11:00	Date Received..: 08/23/11		
Prep Date.....: 08/31/11	Analysis Date..: 08/31/11		
Prep Batch #...: 1244011	Analysis Time..: 19:51		
Dilution Factor: 20			
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethane	560 D	20	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	96	(85 - 120)
Dibromofluoromethane	101	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	95	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001

TOTAL Metals

Lot-Sample #...: F1H230407-007 Matrix.....: WATER
Date Sampled...: 08/22/11 11:00 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	**6.1**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLW9L1AF**
		Dilution Factor: 1		Analysis Time..: 07:42		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1AQ
		Dilution Factor: 1		Analysis Time..: 02:15		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1AR
		Dilution Factor: 1		Analysis Time..: 02:15		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1AP
		Dilution Factor: 1		Analysis Time..: 02:15		
Barium	**53.7**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW9L1AT**
		Dilution Factor: 1		Analysis Time..: 02:15		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1AU
		Dilution Factor: 1		Analysis Time..: 02:15		
Calcium	**96400 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW9L1AV**
		Dilution Factor: 10		Analysis Time..: 19:21		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1AW
		Dilution Factor: 1		Analysis Time..: 02:15		
Cobalt	**5.5 J**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW9L1AX**
		Dilution Factor: 1		Analysis Time..: 02:15		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1A0
		Dilution Factor: 1		Analysis Time..: 02:15		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1A1
		Dilution Factor: 1		Analysis Time..: 02:15		
Iron	**2840**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW9L1A2**
		Dilution Factor: 1		Analysis Time..: 02:15		
Magnesium	**21500**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW9L1A3**
		Dilution Factor: 1		Analysis Time..: 17:26		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001

TOTAL Metals

Lot-Sample #...: F1H230407-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**288**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW9L1A4**
		Dilution Factor: 1		Analysis Time..: 02:15		
Sodium	**10800 E**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW9L1A5**
		Dilution Factor: 1		Analysis Time..: 17:26		
Nickel	**534**	**40**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW9L1A6**
		Dilution Factor: 1		Analysis Time..: 02:15		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1A7
		Dilution Factor: 1		Analysis Time..: 02:15		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1A8
		Dilution Factor: 1		Analysis Time..: 02:15		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1A9
		Dilution Factor: 1		Analysis Time..: 02:15		
Strontium	**212 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLW9L1AA**
		Dilution Factor: 10		Analysis Time..: 14:26		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1AD
		Dilution Factor: 1		Analysis Time..: 02:15		
Zinc	**8.6 J**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW9L1AE**
		Dilution Factor: 1		Analysis Time..: 02:15		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW9L2AC
		Dilution Factor: 1		Analysis Time..: 18:21		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001

General Chemistry

Lot-Sample #...: F1H230407-007 Work Order #...: MLW9L Matrix.....: WATER
Date Sampled...: 08/22/11 11:00 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	16.6	1.0	mg/L	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 5		Analysis Time..: 02:02		
Fluoride	2.9	0.50	mg/L	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 5		Analysis Time..: 02:02		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 1		Analysis Time..: 01:46		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 5		Analysis Time..: 02:02		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1		Analysis Time..: 01:46		
Sulfate	73.2	2.5	mg/L	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 5		Analysis Time..: 02:02		
Total Alkalinity	254	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	400	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001

GC/MS Volatiles

Lot-Sample #...: F1H230407-008 Work Order #...: MLW9Q1CE Matrix.....: WATER
Date Sampled...: 08/22/11 12:30 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 00:18
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	**0.13 J**	**1.0**	**ug/L**
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**38**	**1.0**	**ug/L**
1,2-Dichlorobenzene	**0.83 J**	**1.0**	**ug/L**
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**18**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**2.6**	**1.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Toluene	**4.1**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**20**	**1.0**	**ug/L**
Vinyl chloride	**6.2**	**2.0**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	111	(85 - 115)
1,2-Dichloroethane-d4	102	(70 - 120)
4-Bromofluorobenzene	106	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001

GC/MS Volatiles

Lot-Sample #...: F1H230407-008 Work Order #...: MLW9Q2CE Matrix.....: WATER
Date Sampled...: 08/22/11 12:30 Date Received..: 08/23/11
Prep Date.....: 08/31/11 Analysis Date..: 08/31/11
Prep Batch #...: 1244011 Analysis Time..: 21:04
Dilution Factor: 5
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Carbon tetrachloride	85 D	5.0	ug/L
1,2-Dichloroethene (total)	130 D	10	ug/L
Tetrachloroethene	110 D	5.0	ug/L
1,1,1-Trichloroethane	60 D	5.0	ug/L
Xylenes (total)	130 D	25	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	96	(85 - 120)
Dibromofluoromethane	95	(85 - 115)
1,2-Dichloroethane-d4	92	(70 - 120)
4-Bromofluorobenzene	93	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001

TOTAL Metals

Lot-Sample #...: F1H230407-008 Matrix.....: WATER
Date Sampled...: 08/22/11 12:30 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	3.9	1	ug/L	SW846 6020A	08/24-08/26/11	MLW9Q1AR
		Dilution Factor: 1		Analysis Time..: 08:02		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1A3
		Dilution Factor: 1		Analysis Time..: 02:47		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1A4
		Dilution Factor: 1		Analysis Time..: 02:47		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1A2
		Dilution Factor: 1		Analysis Time..: 02:47		
Barium	77.0	50	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1A5
		Dilution Factor: 1		Analysis Time..: 02:47		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1A6
		Dilution Factor: 1		Analysis Time..: 02:47		
Calcium	62100 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLW9Q1A7
		Dilution Factor: 10		Analysis Time..: 19:41		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1A8
		Dilution Factor: 1		Analysis Time..: 02:47		
Cobalt	4.2 J	50	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1A9
		Dilution Factor: 1		Analysis Time..: 02:47		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AA
		Dilution Factor: 1		Analysis Time..: 02:47		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AC
		Dilution Factor: 1		Analysis Time..: 02:47		
Iron	802	100	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AD
		Dilution Factor: 1		Analysis Time..: 02:47		
Magnesium	14300	1000	ug/L	SW846 6010C	08/24-08/27/11	MLW9Q1AE
		Dilution Factor: 1		Analysis Time..: 17:58		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001

TOTAL Metals

Lot-Sample #...: F1H230407-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	348	15	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AF
		Dilution Factor: 1		Analysis Time..: 02:47		
Sodium	2070 E	1000	ug/L	SW846 6010C	08/24-08/27/11	MLW9Q1AG
		Dilution Factor: 1		Analysis Time..: 17:58		
Nickel	246	40	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AH
		Dilution Factor: 1		Analysis Time..: 02:47		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AJ
		Dilution Factor: 1		Analysis Time..: 02:47		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AK
		Dilution Factor: 1		Analysis Time..: 02:47		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AL
		Dilution Factor: 1		Analysis Time..: 02:47		
Strontium	206 N	50	ug/L	SW846 6010C	08/24-08/31/11	MLW9Q1AM
		Dilution Factor: 10		Analysis Time..: 13:28		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AP
		Dilution Factor: 1		Analysis Time..: 02:47		
Zinc	46.4	20	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AQ
		Dilution Factor: 1		Analysis Time..: 02:47		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW9Q2AN
		Dilution Factor: 1		Analysis Time..: 18:40		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001

General Chemistry

Lot-Sample #...: F1H230407-008 Work Order #...: MLW9Q Matrix.....: WATER
Date Sampled...: 08/22/11 12:30 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	1.8	0.20	mg/L	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 1		Analysis Time..: 05:36		
Fluoride	1.5	0.10	mg/L	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 1		Analysis Time..: 05:36		
Nitrate	0.017 B	0.020	mg/L	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 1		Analysis Time..: 05:36		
Nitrite	ND	0.020	mg/L	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 1		Analysis Time..: 05:36		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1		Analysis Time..: 05:36		
Sulfate	21.1	2.5	mg/L	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 5		Analysis Time..: 05:52		
Total Alkalinity	196	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	233	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001

GC/MS Volatiles

Lot-Sample #...: F1H230407-009 Work Order #...: MLW9X1CE Matrix.....: WATER
Date Sampled...: 08/22/11 13:45 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 00:44
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	**0.24 J**	**2.0**	**ug/L**
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**16**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**4.8**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**2.3**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**2.5**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**0.77 J**	**1.0**	**ug/L**
Vinyl chloride	**0.47 J**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001

GC/MS Volatiles

Lot-Sample #...: F1H230407-009 **Work Order #...:** MLW9X1CE **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	112	(85 - 120)
Dibromofluoromethane	105	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001

TOTAL Metals

Lot-Sample #...: F1H230407-009 Matrix.....: WATER
Date Sampled...: 08/22/11 13:45 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	2.6	1	ug/L	SW846 6020A	08/24-08/26/11	MLW9X1A4
		Dilution Factor: 1		Analysis Time..: 08:09		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AE
		Dilution Factor: 1		Analysis Time..: 02:54		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AF
		Dilution Factor: 1		Analysis Time..: 02:54		
Arsenic	3.4 J	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AD
		Dilution Factor: 1		Analysis Time..: 02:54		
Barium	80.5	50	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AG
		Dilution Factor: 1		Analysis Time..: 02:54		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AH
		Dilution Factor: 1		Analysis Time..: 02:54		
Calcium	102000 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLW9X1AJ
		Dilution Factor: 10		Analysis Time..: 19:47		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AK
		Dilution Factor: 1		Analysis Time..: 02:54		
Cobalt	21.1 J	50	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AL
		Dilution Factor: 1		Analysis Time..: 02:54		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AM
		Dilution Factor: 1		Analysis Time..: 02:54		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AN
		Dilution Factor: 1		Analysis Time..: 02:54		
Iron	5880	100	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AP
		Dilution Factor: 1		Analysis Time..: 02:54		
Magnesium	26100	1000	ug/L	SW846 6010C	08/24-08/27/11	MLW9X1AQ
		Dilution Factor: 1		Analysis Time..: 18:05		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001

TOTAL Metals

Lot-Sample #...: F1H230407-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	349	15	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AR
		Dilution Factor: 1		Analysis Time..: 02:54		
Sodium	10500 E	1000	ug/L	SW846 6010C	08/24-08/27/11	MLW9X1AT
		Dilution Factor: 1		Analysis Time..: 18:05		
Nickel	1000	40	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AU
		Dilution Factor: 1		Analysis Time..: 02:54		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AV
		Dilution Factor: 1		Analysis Time..: 02:54		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AW
		Dilution Factor: 1		Analysis Time..: 02:54		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AX
		Dilution Factor: 1		Analysis Time..: 02:54		
Strontium	289 N	50	ug/L	SW846 6010C	08/24-08/30/11	MLW9X1A0
		Dilution Factor: 10		Analysis Time..: 15:03		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1A2
		Dilution Factor: 1		Analysis Time..: 02:54		
Zinc	29.9	20	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1A3
		Dilution Factor: 1		Analysis Time..: 02:54		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW9X2A1
		Dilution Factor: 1		Analysis Time..: 18:47		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001

General Chemistry

Lot-Sample #...: F1H230407-009 Work Order #...: MLW9X Matrix.....: WATER
Date Sampled...: 08/22/11 13:45 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	11.1	1.0	mg/L	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 5		Analysis Time..: 07:31		
Fluoride	4.4	0.50	mg/L	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 5		Analysis Time..: 07:31		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 1		Analysis Time..: 07:14		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 5		Analysis Time..: 07:31		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1		Analysis Time..: 07:14		
Sulfate	41.6	2.5	mg/L	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 5		Analysis Time..: 07:31		
Total Alkalinity	325	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	410	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1		Analysis Time..: 00:00		

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 Work Order #...: ML3581AA Matrix.....: WATER
MB Lot-Sample #: F1H250000-192

Prep Date.....: 08/25/11 Analysis Time..: 22:13
Analysis Date..: 08/25/11 Prep Batch #...: 1237192
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	102	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 Work Order #...: ML3581AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	102	(70 - 120)		
4-Bromofluorobenzene	99	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 **Work Order #...:** ML7GA1AA **Matrix.....:** WATER
MB Lot-Sample #: F1I010000-011

Prep Date.....: 08/31/11 **Analysis Time..:** 19:26
Analysis Date..: 08/31/11 **Prep Batch #...:** 1244011
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	98	(85 - 120)
Dibromofluoromethane	99	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	97	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H240000-076 **Prep Batch #...:** 1236076						
Uranium	ND	1	ug/L	SW846 6020A	08/24-08/26/11	ML0JG1AA
		Dilution Factor: 1				
		Analysis Time..: 06:16				
MB Lot-Sample #: F1H240000-078 **Prep Batch #...:** 1236078						
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AD
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AU
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AA
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Barium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AE
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AF
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AH
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Calcium	ND	1000	ug/L	SW846 6010C	08/24-08/27/11	ML0JL1AG
		Dilution Factor: 1				
		Analysis Time..: 16:03				
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AK
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AJ
		Dilution Factor: 1				
		Analysis Time..: 00:51				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H230407 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AL
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Iron	ND	100	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AM
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AT
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Magnesium	ND	1000	ug/L	SW846 6010C	08/24-08/27/11	ML0JL1AN
		Dilution Factor: 1				
		Analysis Time..: 16:03				
Manganese	ND	15	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AP
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AR
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AV
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AC
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Sodium	**329 J**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**ML0JL1AQ**
		Dilution Factor: 1				
		Analysis Time..: 16:03				
Strontium	**0.75 J**	**5**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**ML0JL1AW**
		Dilution Factor: 1				
		Analysis Time..: 13:04				
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1A0
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Zinc	ND	20	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1A1
		Dilution Factor: 1				
		Analysis Time..: 00:51				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H300000-041 **Prep Batch #...:** 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	ML43N1AA
		Dilution Factor: 1				
		Analysis Time..: 16:57				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H230407 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: ML2CL1AA		MB Lot-Sample #:	F1H230000-141	
	ND	0.20	mg/L	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 1				
		Analysis Time..: 12:24				
Fluoride		Work Order #: ML2CR1AA		MB Lot-Sample #:	F1H230000-142	
	ND	0.10	mg/L	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 1				
		Analysis Time..: 12:24				
Nitrate		Work Order #: ML2C01AA		MB Lot-Sample #:	F1H230000-143	
	ND	0.020	mg/L	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 1				
		Analysis Time..: 12:24				
Nitrite		Work Order #: ML2C41AA		MB Lot-Sample #:	F1H230000-144	
	ND	0.020	mg/L	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 1				
		Analysis Time..: 12:24				
Phosphate as P, Ortho		Work Order #: ML2C81AA		MB Lot-Sample #:	F1H230000-145	
	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1				
		Analysis Time..: 12:24				
Sulfate		Work Order #: ML2DC1AA		MB Lot-Sample #:	F1H230000-146	
	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 1				
		Analysis Time..: 12:24				
Total Alkalinity		Work Order #: ML51P1AA		MB Lot-Sample #:	F1H300000-085	
	ND	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: ML4AF1AA		MB Lot-Sample #:	F1H260000-124	
	ND	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 Work Order #...: ML3581AC Matrix.....: WATER
LCS Lot-Sample#: F1H250000-192
Prep Date.....: 08/25/11 Analysis Date..: 08/25/11
Prep Batch #...: 1237192 Analysis Time..: 21:20
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
cis-1,3-Dichloropropene	104	(70 - 130)	SW846 8260B
Dibromochloromethane	102	(60 - 135)	SW846 8260B
Vinyl chloride	116	(50 - 145)	SW846 8260B
Bromomethane	153 a	(30 - 145)	SW846 8260B
Chloroethane	120	(60 - 135)	SW846 8260B
Acetone	105	(40 - 140)	SW846 8260B
1,1-Dichloroethene	100	(70 - 130)	SW846 8260B
Methylene chloride	90	(55 - 140)	SW846 8260B
Carbon disulfide	95	(35 - 160)	SW846 8260B
1,1-Dichloroethane	100	(70 - 135)	SW846 8260B
2-Butanone	105	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	98	(85 - 115)	SW846 8260B
Chloroform	99	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	101	(65 - 130)	SW846 8260B
Carbon tetrachloride	101	(65 - 140)	SW846 8260B
1,2-Dichloroethane	97	(70 - 130)	SW846 8260B
Benzene	99	(80 - 120)	SW846 8260B
Trichloroethene	95	(70 - 125)	SW846 8260B
1,2-Dichloropropane	97	(75 - 125)	SW846 8260B
Bromodichloromethane	100	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	100	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	106	(55 - 140)	SW846 8260B
Toluene	107	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	104	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	100	(75 - 125)	SW846 8260B
2-Hexanone	96	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	110	(60 - 135)	SW846 8260B
Chlorobenzene	100	(80 - 120)	SW846 8260B
Bromoform	106	(70 - 130)	SW846 8260B
Ethylbenzene	106	(75 - 125)	SW846 8260B
Styrene	110	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	106	(65 - 130)	SW846 8260B
Tetrachloroethene	99	(45 - 150)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 Work Order #...: ML3581AC Matrix.....: WATER
LCS Lot-Sample#: F1H250000-192

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichlorobenzene	**102**	**(70 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	105	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 **Work Order #...:** ML7GA1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: F1I010000-011 ML7GA1AD-LCSD
Prep Date.....: 08/31/11 **Analysis Date..:** 09/01/11
Prep Batch #...: 1244011 **Analysis Time..:** 04:21
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethane	108	(70 - 135)			SW846 8260B
	108	(70 - 135)	0.37	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	105	(85 - 115)			SW846 8260B
	107	(85 - 115)	2.0	(0-20)	SW846 8260B
1,1,1-Trichloroethane	107	(65 - 130)			SW846 8260B
	110	(65 - 130)	2.8	(0-20)	SW846 8260B
Carbon tetrachloride	107	(65 - 140)			SW846 8260B
	112	(65 - 140)	4.2	(0-20)	SW846 8260B
Tetrachloroethene	105	(45 - 150)			SW846 8260B
	113	(45 - 150)	7.0	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	96	(85 - 120)
	102	(85 - 120)
Dibromofluoromethane	98	(85 - 115)
	95	(85 - 115)
1,2-Dichloroethane-d4	96	(70 - 120)
	91	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)
	103	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H240000-076 **Prep Batch #...:** 1236076					
Uranium	94	(80 - 120)	SW846 6020A	08/24-08/26/11	ML0JG1AC
		Dilution Factor: 1		Analysis Time..: 06:22	
LCS Lot-Sample#: F1H240000-078 **Prep Batch #...:** 1236078					
Arsenic	103	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1A2
		Dilution Factor: 1		Analysis Time..: 00:57	
Silver	93	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1A3
		Dilution Factor: 1		Analysis Time..: 00:57	
Aluminum	108	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1A4
		Dilution Factor: 1		Analysis Time..: 00:57	
Barium	109	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1A5
		Dilution Factor: 1		Analysis Time..: 00:57	
Beryllium	116	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1A6
		Dilution Factor: 1		Analysis Time..: 00:57	
Calcium	105	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JL1A7
		Dilution Factor: 1		Analysis Time..: 16:10	
Cadmium	108	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1A8
		Dilution Factor: 1		Analysis Time..: 00:57	
Cobalt	104	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1A9
		Dilution Factor: 1		Analysis Time..: 00:57	
Chromium	104	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CA
		Dilution Factor: 1		Analysis Time..: 00:57	
Copper	103	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CC
		Dilution Factor: 1		Analysis Time..: 00:57	
Iron	109	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CD
		Dilution Factor: 1		Analysis Time..: 00:57	
Magnesium	97	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JL1CE
		Dilution Factor: 1		Analysis Time..: 16:10	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	107	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CF
		Dilution Factor: 1	Analysis Time..: 00:57		
Sodium	103	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JL1CG
		Dilution Factor: 1	Analysis Time..: 16:10		
Nickel	104	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CH
		Dilution Factor: 1	Analysis Time..: 00:57		
Lead	104	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CJ
		Dilution Factor: 1	Analysis Time..: 00:57		
Antimony	105	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CK
		Dilution Factor: 1	Analysis Time..: 00:57		
Selenium	105	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CL
		Dilution Factor: 1	Analysis Time..: 00:57		
Strontium	105	(80 - 120)	SW846 6010C	08/24-08/30/11	ML0JL1CM
		Dilution Factor: 1	Analysis Time..: 13:10		
Vanadium	105	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CP
		Dilution Factor: 1	Analysis Time..: 00:57		
Zinc	113	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CQ
		Dilution Factor: 1	Analysis Time..: 00:57		
LCS Lot-Sample#: F1H300000-041 **Prep Batch #...:** 1242041					
Thallium	103	(80 - 120)	SW846 6010C	08/29-08/31/11	ML43N1AC
		Dilution Factor: 1	Analysis Time..: 17:04		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230407 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: ML2CL1AC	LCS Lot-Sample#: F1H230000-141		
	92	(90 - 110)	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 1	Analysis Time..: 12:07		
Fluoride		Work Order #: ML2CR1AC	LCS Lot-Sample#: F1H230000-142		
	95	(90 - 110)	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 1	Analysis Time..: 12:07		
Nitrate		Work Order #: ML2C01AC	LCS Lot-Sample#: F1H230000-143		
	95	(90 - 110)	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 1	Analysis Time..: 12:07		
Nitrite		Work Order #: ML2C41AC	LCS Lot-Sample#: F1H230000-144		
	101	(90 - 110)	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 1	Analysis Time..: 12:07		
Phosphate as P, Ortho		Work Order #: ML2C81AC	LCS Lot-Sample#: F1H230000-145		
	96	(90 - 110)	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1	Analysis Time..: 12:07		
Sulfate		Work Order #: ML2DC1AC	LCS Lot-Sample#: F1H230000-146		
	96	(90 - 110)	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 1	Analysis Time..: 12:07		
Total Alkalinity		Work Order #: ML51P1AC	LCS Lot-Sample#: F1H300000-085		
	94	(90 - 110)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: ML51P1AD	LCS Lot-Sample#: F1H300000-085		
	94	(90 - 110)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: ML4AF1AC	LCS Lot-Sample#: F1H260000-124		
	96	(90 - 113)	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 Work Order #...: MLXMN1C4-MS Matrix.....: WATER
MS Lot-Sample #: F1H230464-002 MLXMN1C5-MSD
Date Sampled...: 08/19/11 09:15 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 01:37
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	96	(70 - 130)			SW846 8260B
	99	(70 - 130)	2.1	(0-20)	SW846 8260B
Dibromochloromethane	105	(60 - 135)			SW846 8260B
	102	(60 - 135)	2.0	(0-20)	SW846 8260B
Vinyl chloride	106	(50 - 145)			SW846 8260B
	110	(50 - 145)	4.4	(0-20)	SW846 8260B
Bromomethane	144	(30 - 145)			SW846 8260B
	137	(30 - 145)	5.1	(0-20)	SW846 8260B
Chloroethane	117	(60 - 135)			SW846 8260B
	120	(60 - 135)	2.1	(0-20)	SW846 8260B
Acetone	103	(40 - 140)			SW846 8260B
	102	(40 - 140)	0.97	(0-20)	SW846 8260B
1,1-Dichloroethene	108	(70 - 130)			SW846 8260B
	106	(70 - 130)	2.0	(0-20)	SW846 8260B
Methylene chloride	93	(55 - 140)			SW846 8260B
	92	(55 - 140)	0.97	(0-20)	SW846 8260B
Carbon disulfide	105	(35 - 160)			SW846 8260B
	104	(35 - 160)	0.57	(0-20)	SW846 8260B
1,1-Dichloroethane	103	(70 - 135)			SW846 8260B
	102	(70 - 135)	1.3	(0-20)	SW846 8260B
2-Butanone	100	(30 - 150)			SW846 8260B
	104	(30 - 150)	4.7	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	99	(85 - 115)			SW846 8260B
	100	(85 - 115)	0.90	(0-20)	SW846 8260B
Chloroform	100	(65 - 135)			SW846 8260B
	102	(65 - 135)	1.9	(0-20)	SW846 8260B
1,1,1-Trichloroethane	100	(65 - 130)			SW846 8260B
	103	(65 - 130)	2.8	(0-20)	SW846 8260B
Carbon tetrachloride	98	(65 - 140)			SW846 8260B
	98	(65 - 140)	0.01	(0-20)	SW846 8260B
1,2-Dichloroethane	100	(70 - 130)			SW846 8260B
	101	(70 - 130)	1.2	(0-20)	SW846 8260B
Benzene	102	(80 - 120)			SW846 8260B
	101	(80 - 120)	0.29	(0-20)	SW846 8260B
Trichloroethene	95	(70 - 125)			SW846 8260B
	97	(70 - 125)	1.4	(0-20)	SW846 8260B
1,2-Dichloropropane	101	(75 - 125)			SW846 8260B
	102	(75 - 125)	0.59	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 **Work Order #...:** MLXMN1C4-MS **Matrix.....:** WATER
MS Lot-Sample #: F1H230464-002 MLXMN1C5-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	100	(75 - 120)			SW846 8260B
	100	(75 - 120)	0.19	(0-20)	SW846 8260B
1,1,2-Trichloroethane	105	(75 - 125)			SW846 8260B
	103	(75 - 125)	2.3	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	102	(55 - 140)			SW846 8260B
	103	(55 - 140)	1.5	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	106	(75 - 120)	0.09	(0-20)	SW846 8260B
1,3-Dichlorobenzene	100	(75 - 125)			SW846 8260B
	104	(75 - 125)	3.7	(0-20)	SW846 8260B
1,4-Dichlorobenzene	99	(75 - 125)			SW846 8260B
	100	(75 - 125)	1.9	(0-20)	SW846 8260B
2-Hexanone	101	(55 - 130)			SW846 8260B
	93	(55 - 130)	8.2	(0-20)	SW846 8260B
4-Methyl-2-pentanone	112	(60 - 135)			SW846 8260B
	111	(60 - 135)	0.80	(0-20)	SW846 8260B
Chlorobenzene	101	(80 - 120)			SW846 8260B
	102	(80 - 120)	0.78	(0-20)	SW846 8260B
Bromoform	106	(70 - 130)			SW846 8260B
	104	(70 - 130)	1.9	(0-20)	SW846 8260B
Ethylbenzene	106	(75 - 125)			SW846 8260B
	106	(75 - 125)	0.28	(0-20)	SW846 8260B
Styrene	112	(65 - 135)			SW846 8260B
	112	(65 - 135)	0.17	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	104	(65 - 130)			SW846 8260B
	106	(65 - 130)	1.1	(0-20)	SW846 8260B
Tetrachloroethene	98	(45 - 150)			SW846 8260B
	100	(45 - 150)	1.8	(0-20)	SW846 8260B
1,2-Dichlorobenzene	103	(70 - 120)			SW846 8260B
	105	(70 - 120)	1.6	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
	108	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
	108	(85 - 115)
1,2-Dichloroethane-d4	102	(70 - 120)
	106	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)
	100	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER
Date Sampled...: 08/22/11 11:05 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H230407-002 **Prep Batch #...:** 1236076							
Uranium	98	(80 - 120)			SW846 6020A	08/24-08/26/11	MLW8D1CN
	99	(80 - 120)	0.38	(0-20)	SW846 6020A	08/24-08/26/11	MLW8D1CP
		Dilution Factor: 1					
		Analysis Time..: 06:49					
MS Lot-Sample #: F1H230407-002 **Prep Batch #...:** 1236078							
Aluminum	109	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1CV
	108	(80 - 120)	0.51	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1CW
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Antimony	105	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1A9
	104	(80 - 120)	0.51	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1CA
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Arsenic	104	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1CQ
	104	(80 - 120)	0.23	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1CR
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Barium	109	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1CX
	108	(80 - 120)	0.70	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1C0
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Beryllium	113	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1C1
	114	(80 - 120)	0.70	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1C2
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Cadmium	103	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1C5
	104	(80 - 120)	0.67	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1C6
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Calcium	119	(80 - 120)			SW846 6010C	08/24-08/27/11	MLW8D1C3
	113	(80 - 120)	0.56	(0-20)	SW846 6010C	08/24-08/27/11	MLW8D1C4
		Dilution Factor: 10					
		Analysis Time..: 18:30					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER
Date Sampled...: 08/22/11 11:05 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	102	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1C9
	102	(80 - 120)	0.25	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1DA
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Cobalt	99	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1C7
	99	(80 - 120)	0.07	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1C8
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Copper	104	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1DC
	103	(80 - 120)	0.73	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1DD
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Iron	105	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1DE
	106	(80 - 120)	0.33	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1DF
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Lead	100	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1A7
	100	(80 - 120)	0.74	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1A8
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Magnesium	96	(80 - 120)			SW846 6010C	08/24-08/27/11	MLW8D1DG
	97	(80 - 120)	0.31	(0-20)	SW846 6010C	08/24-08/27/11	MLW8D1DH
		Dilution Factor: 1					
		Analysis Time..: 16:48					
Manganese	104	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1DJ
	104	(80 - 120)	0.12	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1DK
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Nickel	97	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1A5
	98	(80 - 120)	0.49	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1A6
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Selenium	104	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1CC
	105	(80 - 120)	0.63	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1CD
		Dilution Factor: 1					
		Analysis Time..: 01:36					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER
Date Sampled...: 08/22/11 11:05 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	93	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1CT
	93	(80 - 120)	0.27	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1CU
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Sodium	98	(80 - 120)			SW846 6010C	08/24-08/27/11	MLW8D1DL
	99	(80 - 120)	0.25	(0-20)	SW846 6010C	08/24-08/27/11	MLW8D1DM
		Dilution Factor: 1					
		Analysis Time..: 16:48					
Strontium	130 N	(80 - 120)			SW846 6010C	08/24-08/30/11	MLW8D1CE
	132 N	(80 - 120)	1.6	(0-20)	SW846 6010C	08/24-08/30/11	MLW8D1CF
		Dilution Factor: 10					
		Analysis Time..: 13:48					
Vanadium	104	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1CJ
	104	(80 - 120)	0.07	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1CK
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Zinc	111	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1CL
	111	(80 - 120)	0.08	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1CM
		Dilution Factor: 1					
		Analysis Time..: 01:36					
MS Lot-Sample #: F1H230407-002 **Prep Batch #...:** 1242041							
Thallium	99	(80 - 120)			SW846 6010C	08/29-08/31/11	MLW8D1DN
	99	(80 - 120)	0.10	(0-20)	SW846 6010C	08/29-08/31/11	MLW8D1DP
		Dilution Factor: 1					
		Analysis Time..: 17:29					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER
Date Sampled...: 08/22/11 11:00 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H230407-007 **Prep Batch #...:** 1236076							
Uranium	97	(80 - 120)			SW846 6020A	08/24-08/26/11	MLW9L1DD
	96	(80 - 120)	1.5	(0-20)	SW846 6020A	08/24-08/26/11	MLW9L1DE
		Dilution Factor: 1					
		Analysis Time..: 07:49					
MS Lot-Sample #: F1H230407-007 **Prep Batch #...:** 1236078							
Aluminum	108	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1DR
	109	(80 - 120)	1.0	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1DT
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Antimony	103	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1C0
	105	(80 - 120)	1.8	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1C1
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Arsenic	102	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1DM
	105	(80 - 120)	2.8	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1DN
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Barium	108	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1DU
	108	(80 - 120)	0.35	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1DV
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Beryllium	112	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1DW
	114	(80 - 120)	1.6	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1DX
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Cadmium	102	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1D2
	104	(80 - 120)	2.8	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1D3
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Calcium	14 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLW9L1D0
	121 N	(80 - 120)	10	(0-20)	SW846 6010C	08/24-08/27/11	MLW9L1D1
		Dilution Factor: 10					
		Analysis Time..: 19:28					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER
Date Sampled...: 08/22/11 11:00 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	100	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1CF
	102	(80 - 120)	1.8	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1CG
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Cobalt	98	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1D4
	100	(80 - 120)	2.1	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1D5
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Copper	103	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1CH
	103	(80 - 120)	0.24	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1CJ
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Iron	104	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1CK
	107	(80 - 120)	2.1	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1CL
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Lead	98	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1CW
	101	(80 - 120)	2.7	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1CX
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Magnesium	93	(80 - 120)			SW846 6010C	08/24-08/27/11	MLW9L1CM
	96	(80 - 120)	1.0	(0-20)	SW846 6010C	08/24-08/27/11	MLW9L1CN
		Dilution Factor: 1					
		Analysis Time..: 17:46					
Manganese	102	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1CP
	105	(80 - 120)	1.8	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1CQ
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Nickel	95	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1CU
	99	(80 - 120)	2.7	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1CV
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Selenium	102	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1C2
	106	(80 - 120)	3.1	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1C3
		Dilution Factor: 1					
		Analysis Time..: 02:34					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER
Date Sampled...: 08/22/11 11:00 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	92	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1DP
	93	(80 - 120)	0.83	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1DQ
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Sodium	94	(80 - 120)			SW846 6010C	08/24-08/27/11	MLW9L1CR
	95	(80 - 120)	0.22	(0-20)	SW846 6010C	08/24-08/27/11	MLW9L1CT
		Dilution Factor: 1					
		Analysis Time..: 17:46					
Strontium	99	(80 - 120)			SW846 6010C	08/24-08/30/11	MLW9L1C4
	97	(80 - 120)	1.6	(0-20)	SW846 6010C	08/24-08/30/11	MLW9L1C5
		Dilution Factor: 10					
		Analysis Time..: 14:45					
Vanadium	103	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1C8
	104	(80 - 120)	1.2	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1C9
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Zinc	109	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1DA
	112	(80 - 120)	2.5	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1DC
		Dilution Factor: 1					
		Analysis Time..: 02:34					

MS Lot-Sample #: F1H230407-007 **Prep Batch #...:** 1242041

Thallium	99	(80 - 120)			SW846 6010C	08/29-08/31/11	MLW9L1EK
	99	(80 - 120)	0.06	(0-20)	SW846 6010C	08/29-08/31/11	MLW9L1EL
		Dilution Factor: 1					
		Analysis Time..: 18:27					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230407 **Matrix.....:** WATER
Date Sampled...: 08/22/11 11:00 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLW9L1DF		MS Lot-Sample #: F1H230407-007	
	107	(90 - 110)	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 5	Analysis Time..: 02:02		
Fluoride		Work Order #...: MLW9L1DG		MS Lot-Sample #: F1H230407-007	
	103	(90 - 110)	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 5	Analysis Time..: 02:02		
Nitrate		Work Order #...: MLW9L1DH		MS Lot-Sample #: F1H230407-007	
	106	(90 - 110)	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 1	Analysis Time..: 01:46		
Nitrite		Work Order #...: MLW9L1DJ		MS Lot-Sample #: F1H230407-007	
	55 N	(90 - 110)	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 5	Analysis Time..: 02:02		
Phosphate as P, Ortho		Work Order #...: MLW9L1DK		MS Lot-Sample #: F1H230407-007	
	56 N	(90 - 110)	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1	Analysis Time..: 01:46		
Sulfate		Work Order #...: MLW9L1D6		MS Lot-Sample #: F1H230407-007	
	104	(90 - 110)	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 5	Analysis Time..: 02:02		
Total Alkalinity		Work Order #...: MLW9L1EM		MS Lot-Sample #: F1H230407-007	
	98	(80 - 120)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230407 **Work Order #...:** MLW9L-SMP MLW9L-DUP **Matrix.....:** WATER

Date Sampled...: 08/22/11 11:00 **Date Received..:** 08/23/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H230407-007		
	400	400	mg/L	0.0	(0-15)	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1				Analysis Time..: 00:00		
Chloride						SD Lot-Sample #: F1H230407-007		
	16.6	16.7	mg/L	0.10	(0-20)	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 5				Analysis Time..: 02:02		
Fluoride						SD Lot-Sample #: F1H230407-007		
	2.9	3.0	mg/L	1.2	(0-20)	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 5				Analysis Time..: 02:02		
Nitrate						SD Lot-Sample #: F1H230407-007		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 1				Analysis Time..: 01:46		
Nitrite						SD Lot-Sample #: F1H230407-007		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 5				Analysis Time..: 02:02		
Phosphate as P, Ortho						SD Lot-Sample #: F1H230407-007		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1				Analysis Time..: 01:46		
Sulfate						SD Lot-Sample #: F1H230407-007		
	73.2	73.7	mg/L	0.73	(0-20)	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 5				Analysis Time..: 02:02		
Total Alkalinity						SD Lot-Sample #: F1H230407-007		
	254	254	mg/L	0.16	(0-20)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1				Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW600D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230407-001
Work Order: MLW8C
Matrix: WATER

Date Collected: 08/22/11 0900
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1236047**	**Yld % 63**
Uranium 234	1.28		0.26	0.10	0.07	08/24/11	08/29/11
Uranium 235/236	0.050	U	0.053	0.100	0.060	08/24/11	08/29/11
Uranium 238	0.93		0.21	0.10	0.05	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230407-002
Work Order: MLW8D
Matrix: WATER

Date Collected: 08/22/11 1105
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1236047		Yld % 69
Uranium 234	2.40		0.36	0.10	0.06	08/24/11	08/29/11
Uranium 235/236	0.112		0.074	0.100	0.052	08/24/11	08/29/11
Uranium 238	2.21		0.34	0.10	0.04	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230407-003
Work Order: MLW8E
Matrix: WATER

Date Collected: 08/22/11 1230
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1236047	Yld % 78
Uranium 234	1.06		0.22	0.10	0.06	08/24/11	08/29/11
Uranium 235/236	0.140		0.082	0.100	0.060	08/24/11	08/29/11
Uranium 238	1.36		0.25	0.10	0.05	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230407-004
Work Order: MLW8F
Matrix: WATER

Date Collected: 08/22/11 1345
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1236047		Yld % 72
Uranium 234	1.06		0.22	0.10	0.06	08/24/11	08/29/11
Uranium 235/236	0.012	U	0.024	0.100	0.032	08/24/11	08/29/11
Uranium 238	0.86		0.20	0.10	0.06	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02M600D0001

Radiochemistry

Lab Sample ID: F1H230407-006
Work Order: MLW88
Matrix: WATER

Date Collected: 08/22/11 0900
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1236047		Yld % 66
Uranium 234	0.92		0.21	0.10	0.07	08/24/11	08/29/11
Uranium 235/236	0.032	U	0.046	0.100	0.069	08/24/11	08/29/11
Uranium 238	0.78		0.19	0.10	0.08	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001

Radiochemistry

Lab Sample ID: F1H230407-007
Work Order: MLW9L
Matrix: WATER

Date Collected: 08/22/11 1100
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1236047	Yld % 64
Uranium 234	2.36		0.37	0.10	0.07	08/24/11	08/29/11
Uranium 235/236	0.098		0.072	0.100	0.057	08/24/11	08/29/11
Uranium 238	2.06		0.34	0.10	0.06	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001

Radiochemistry

Lab Sample ID: F1H230407-008
Work Order: MLW9Q
Matrix: WATER

Date Collected: 08/22/11 1230
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1236152	Yld % 76
Uranium 234	1.49		0.26	0.10	0.05	08/24/11	08/29/11
Uranium 235/236	0.136		0.079	0.100	0.031	08/24/11	08/29/11
Uranium 238	1.43		0.26	0.10	0.04	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001

Radiochemistry

Lab Sample ID: F1H230407-009
Work Order: MLW9X
Matrix: WATER

Date Collected: 08/22/11 1345
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1236152	Yld % 76
Uranium 234	0.88		0.20	0.10	0.07	08/24/11	08/29/11
Uranium 235/236	0.040	U	0.047	0.100	0.061	08/24/11	08/29/11
Uranium 238	0.92		0.20	0.10	0.05	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H230407
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1236152		Yld % 73		F1H240000-152B
Uranium 234	-0.0072	U	0.0084	0.100	0.057		08/24/11	08/29/11
Uranium 235/236	0.0	U	0.012	0.100	0.033		08/24/11	08/29/11
Uranium 238	0.01	U	0.036	0.100	0.076		08/24/11	08/29/11
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1236047		Yld % 82		F1H240000-047B
Uranium 234	0.015	U	0.032	0.100	0.059		08/24/11	08/29/11
Uranium 235/236	-0.0027	U	0.0054	0.100	0.049		08/24/11	08/29/11
Uranium 238	-0.0043	U	0.0061	0.100	0.046		08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F1H230407
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ+/-)	% Yld	% Rec	QC Control Limits	Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**	**A-01-R MOD**				**Lab Sample ID F1H240000-047C**		
Uranium 234		3.26	3.11	0.42	84	95	(76 - 136)		
	Spk 2	3.26	3.12	0.41	85	96	(76 - 136)	0.4	%RPD
Uranium 238		3.39	3.47	0.45	84	102	(76 - 134)		
	Spk 2	3.39	3.36	0.43	85	99	(76 - 134)	3	%RPD
		Batch #:	1236047		**Analysis Date:**		08/29/11		
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**	**A-01-R MOD**				**Lab Sample ID F1H240000-152C**		
Uranium 234		3.26	3.26	0.42	87	100	(76 - 136)		
	Spk 2	3.26	3.40	0.43	85	104	(76 - 136)	4	%RPD
Uranium 238		3.39	3.40	0.44	87	100	(76 - 134)		
	Spk 2	3.39	4.08	0.49	85	120	(76 - 134)	18	%RPD
		Batch #:	1236152		**Analysis Date:**		08/29/11		

NOTE (S) F1H230407

Calculations are performed before rounding to avoid round-off error in calculated results

F1H230407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R4,5

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 9

Date Received: 2011-08-23

Analytical Due Date: 2011-08-31

Report Due Date: 2011-09-02

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A02MW600D0001 DISSOLVED			2011-08-22 / 900	MLW8C	WATER

SAMPLE COMMENTS:

SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A02MW50001 DISSOLVED			2011-08-22 / 1105	MLW8D	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H230407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5,2-84

Project Manager: LMF
Quote #: 89251 SDG:
Project: Y40415 Guterl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 9

Date Received: 2011-08-23
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06
	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
D	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06

F1H230407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5,2-84

Project Manager: LMF
Project: Y40415
PO#: 697886
Client: 522706 Shaw Environmental & Infrastructure Inc

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin

Date Received: 2011-08-23
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: B Standard Report
EDD Code: 00

#SMPS in LOT: 9

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

D	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A02MW120001 DISSOLVED			2011-08-22 / 1230	MLW8E	WATER

SAMPLE COMMENTS:

	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R4,5

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 9

Date Received: 2011-08-23

Analytical Due Date: 2011-08-31

Report Due Date: 2011-09-02

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	A02MW30001 DISSOLVED			2011-08-22 / 1345	MLW8F	WATER

SAMPLE COMMENTS:

CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-23

Project: Y40415
Gutert Steel
Analytical Due Date: 2011-08-31

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-09-02

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 9
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE # 5 | CLIENT SAMPLE ID: TRIP BLANK #5 | Site ID | Client Matrix | DATE/TIME SAMPLED: 2011-08-22 / 0 | WORKORDER: MLW86 | WATER

SAMPLE COMMENTS:

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N

SAMPLE # 6 | CLIENT SAMPLE ID: A02M600D0001 | Site ID | Client Matrix | DATE/TIME SAMPLED: 2011-08-22 / 900 | WORKORDER: MLW88 | WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5,2-84

Project Manager: LMF
Quote #: 89251 SDG:
Project: Y40415 Guterl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 9

Date Received: 2011-08-23
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MDD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	A02MW50001			2011-08-22 / 1100	MLW9L	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H230407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5,2-84

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-23

Project: Y40415
Guterl Steel
Analytical Due Date: 2011-08-31

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-09-02

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 9
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
	XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
	XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
	XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
	XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
	XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
	XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
	XX	DQ	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
	XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
	XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
D	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		

F1H230407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5,2-84

Project Manager: LMF
Quote #: 89251 SDG:
Date Received: 2011-08-23

Project: Y40415
Guterl Steel
Analytical Due Date: 2011-08-31

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-09-02

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 9
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	XX	QK	SW846 8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
S	XX	C8	MCAW 300.0A W	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	C9	MCAW 300.0A W	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	CX	MCAW 300.0A W	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	CY	MCAW 300.0A W	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	DO	MCAW 300.0A W	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	GO	MCAW 300.0A W	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	AK	MCAW 160.1 W	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
X	XX	C8	MCAW 300.0A W	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	C9	MCAW 300.0A W	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	CX	MCAW 300.0A W	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	CY	MCAW 300.0A W	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	DO	MCAW 300.0A W	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	GO	MCAW 300.0A W	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H230407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5,2-84

Project Manager: LMF
Project: Y40415
PO#: 697886
Client: 522706 Shaw Environmental & Infrastructure Inc

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin

#SMPS In LOT: 9

Date Received: 2011-08-23
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

X	XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
X	XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	A02MW120001			2011-08-22 / 1230	MLW9Q	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

CLIENT ANALYSIS SUMMARY

Storage Loc: R4,5,2-84

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-23

Analytical Due Date: 2011-08-31

Report Due Date: 2011-09-02

Report Type: B Standard Report

EDD Code: 00

#SMPS in LOT: 9

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	A02MW30001			2011-08-22 / 1345	MLW9X	WATER

SAMPLE COMMENTS:

NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

F1H230407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5,2-84

Project Manager: LMF
Quote #: 89251 SDG:
Project: Y40415 Guterl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-23
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: B Standard Report
EDD Code: 00
#SMPS In LOT: 9

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

estAmerica St. Louis
'15 Rider Trail North
th City, MO 63045
one 314.298.8566 fax 314.298.8757

cor 199

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/22/2011	COC No: 013
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
ncinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below			SDG No.
3) 782-4807 FAX	☐ 2 weeks			
oject Name: Former Guterl Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
) #	☐ 1 day			

Sample Identification (label/Lead)	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
2MW600D0001 A05BMW600D0001	8/22/2011	0900	Grab	GW	7	X		X	X	X	X	X	X						2x
2MW50001 8.23.11	8/22/2011	1105	Grab	GW	10	X		X	X	X	X	X	X	X	3x40		500P	4xLP	250P
3MW50001MS	8/22/2011	1105	Grab	GW	10	X		X	X	X	X	X	X	X					
3MW50001MSD	8/22/2011	1105	Grab	GW	10	X		X	X	X	X	X	X	X					
2MW120001	8/22/2011	1230	Grab	GW	10	X		X	X	X	X	X	X	X					KCC
2MW30001	8/22/2011	1345	Grab	GW	10	X		X	X	X	X	X	X	X					
Blank #5	8/22/2011	--	TB	--	1									X	2x40				

servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

sible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

cial Instructions/QC Requirements & Comments:

	Company	Date/Time		Company	Date/Time
inquished by:	Company: Shaw E & I Inc.	Date/Time: 8/22/11 16:40	Received by:	Company: BFLO	Date/Time: 08-22-11 16:40
inquished by:	Company: BFLO	Date/Time: 08-22-11 17:05	Received by:	Company: BFLO	Date/Time: 8-22-11 17:05
inquished by:	Company: BFLO	Date/Time: 8/22/11 1740	Received by:	Company: TASL	Date/Time: 8.23.11 0905

FTHSC0404

8 of 8

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): FH230407 TestAmerica St. Louis

CUR Form #: 1 9 9

CONDITION UPON RECEIPT FORM

Client: Shaw

Quote No: 89151

COC/RFA No: 013

Initiated By: SW Date: 8.23.11 Time: 0905

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*				Sample Temperature (s):**			
1.	4485 0258 4877	6.		1.	ambient	6.	
2.	4866	7.		2.	↓	7.	
3.	4855	8.		3.		8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y N (N/A)	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	Y (N) N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Sample 1. we rec'd. A05BMW600D0001. The QC bottles read "A03" but the sample reads "A02."

A03 Should be A02 MS/MSD[2] Please use COC A0200 LMF 8/23/11 SW 8.23.11

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 8/25/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guterl Steel

Lot #: F1H230464

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

September 7, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H230464

This report contains the analytical results for the 14 samples received under chain of custody by TestAmerica in St. Louis on August 23, 2011. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances

The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1237192
The CCV recoveries are outside the upper QC limit (greater than 20% D) for Bromomethane, Chloroethane, Trichlorofluoromethane and 1,2,3-Trichloropropane indicating a potential high bias for those analytes in the samples associated with this CCV. These analytes were not detected above the reporting limit or were not target analytes in the associated samples.

The LCS recovery for Bromomethane is outside the upper QC limit, indicating a potential positive bias for that analyte. This analyte was not observed above the reporting limit in the associated samples; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1H230464 (2): A03MW703DD0001
F1H230464 (4): A02MW40001
F1H230464 (6): A04AMW701DD0001
F1H230464 (8): TRIP BLANK #4

Batch: 1244011
The samples were analyzed at a dilution based upon laboratory screening information. The reporting limit has been adjusted for the dilution.

The MS/MSD analysis was not performed with this batch; the associated samples are dilutions only. The MS/MSD was performed with the original analyses. An LCS/LCSD was performed to demonstrate accuracy and replicate precision.

The following compounds were removed from the initial calibration lowest point due to poor response. Ethyl ether, Methyl acetate, Acetontrile, Ethyl acetate, 2-Butanone, Isobutanol, 1,4-dioxane, 2-Nitropropane and Cyclohexanone. Addtionally, Acetone was removed from the lowest 2 points.

n-Propylbenzene and sec-Butylbenzene were removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration.

The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

Affected Samples:
F1H230464 (4): A02MW40001

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1236079
There was insufficient digestate volume for analysis of thallium. Samples have been reprepared and the re-extract batch is 1242042.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

The serial dilution for aluminum is outside the established QC limits, indicating matrix interference.

1236079-F1H230464-002
The MS and MSD recovery for calcium and sodium are outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

1236079-F1H230464-010
The MS and MSD recovery for calcium, magnesium and sodium are outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

The MS and MSD recovries for strontium are outside the established QC limits. The RPD is within method acceptance criteria indicating matrix interference. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (2): A03MW703DD0001
F1H230464 (3): A03MW16D0001
F1H230464 (4): A02MW40001
F1H230464 (5): A03MW9004
F1H230464 (6): A04AMW701DD0001
F1H230464 (9): A03MW607D0001 DISSOLVED
F1H230464 (10): A03MW703DD0001 DISSOLVED
F1H230464 (11): A03MW16D0001 DISSOLVED
F1H230464 (12): A02MW40001 DISSOLVED
F1H230464 (13): A03MW9004 DISSOLVED
F1H230464 (14): A04AMW701DD0001 DISSOLVED

The concentration of strontium in the CCB is greater than 2 times the MDL. The samples associated with this CCB exhibit concentrations greater than ten times the concentrations observed in the CCB.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (2): A03MW703DD0001
F1H230464 (6): A04AMW701DD0001
F1H230464 (9): A03MW607D0001 DISSOLVED
F1H230464 (10): A03MW703DD0001 DISSOLVED
F1H230464 (14): A04AMW701DD0001 DISSOLVED

Alkalinity (MCAWW 310.1)

Batch: 1242085
The MS recovery was outside the established QC limits. The analyte concentration in the original sample is greater than four times the amounted spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:
F1H230464 (2): A03MW703DD0001

Chloride (MCAWW 300.0A)

Batch: 1235169
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (2): A03MW703DD0001
F1H230464 (3): A03MW16D0001
F1H230464 (4): A02MW40001
F1H230464 (5): A03MW9004
F1H230464 (6): A04AMW701DD0001
F1H230464 (7): A04BMW707DD0001

Sulfate (MCAWW 300.0A)

Batch: 1235174
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (2): A03MW703DD0001
F1H230464 (3): A03MW16D0001
F1H230464 (4): A02MW40001
F1H230464 (5): A03MW9004
F1H230464 (6): A04AMW701DD0001
F1H230464 (7): A04BMW707DD0001

Fluoride (MCAWW 300.0A)

Batch: 1235170
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Fluoride are attributed to matrix interference.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (2): A03MW703DD0001
F1H230464 (3): A03MW16D0001
F1H230464 (4): A02MW40001
F1H230464 (5): A03MW9004
F1H230464 (6): A04AMW701DD0001
F1H230464 (7): A04BMW707DD0001

The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (3): A03MW16D0001
F1H230464 (5): A03MW9004

The following samples were reported ND at dilution, due to high concentrations of interfering anions, which masked the retention times of these target analytes in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230464 (7): A04BMW707DD0001

Nitrate (MCAWW 300.0A)

Batch: 1235171
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230464 (7): A04BMW707DD0001

Orthophosphate as P (MCAWW 300.0A)

Batch: 1235173
The following samples were reported ND at dilution, due to high concentrations of interfering anions, which masked the retention times of these target analytes in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230464 (7): A04BMW707DD0001

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (2): A03MW703DD0001
F1H230464 (3): A03MW16D0001
F1H230464 (4): A02MW40001
F1H230464 (5): A03MW9004
F1H230464 (6): A04AMW701DD0001
F1H230464 (7): A04BMW707DD0001

Nitrite (MCAWW 300.0A)

Batch: 1235172
The following samples were reported ND at dilution, due to high concentrations of interfering anions, which masked the retention times of these target analytes in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (2): A03MW703DD0001
F1H230464 (3): A03MW16D0001
F1H230464 (4): A02MW40001
F1H230464 (5): A03MW9004
F1H230464 (6): A04AMW701DD0001
F1H230464 (7): A04BMW707DD0001

Fiterable Resiue (TDS) (MCAWW 160.1)

Batch: 1236026
The sample was analyzed at a dilution based on high concentrations of target analytes. The reporting limit has been adjusted accordingly.

Affected Samples:
F1H230464 (7): A04BMW707DD0001

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H230464

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H230464

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLXMK	001	A03MW607D001	08/19/11	08:45
MLXMN	002	A03MW703DD0001	08/19/11	09:15
MLXM1	003	A03MW16D0001	08/19/11	10:30
MLXM3	004	A02MW40001	08/19/11	12:00
MLXM6	005	A03MW9004	08/19/11	
MLXNA	006	A04AMW701DD0001	08/19/11	13:40
MLXND	007	A04BMW707DD0001	08/19/11	14:05
MLXNE	008	TRIP BLANK #4	08/19/11	
MLXN1	009	A03MW607D0001 DISSOLVED	08/19/11	08:45
MLXN6	010	A03MW703DD0001 DISSOLVED	08/19/11	09:15
MLXN8	011	A03MW16D0001 DISSOLVED	08/19/11	10:30
MLXPA	012	A02MW40001 DISSOLVED	08/19/11	12:00
MLXPC	013	A03MW9004 DISSOLVED	08/19/11	
MLXPD	014	A04AMW701DD0001 DISSOLVED	08/19/11	13:40

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW607D001

TOTAL Metals

Lot-Sample #...: F1H230464-001 Matrix.....: WATER
Date Sampled...: 08/19/11 08:45 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	19.5	1.0	ug/L	SW846 6020A	08/24-08/26/11	MLXMK1AE
		Dilution Factor: 1		Analysis Time..: 03:49		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1AQ
		Dilution Factor: 1		Analysis Time..: 22:42		
Aluminum	15200 NE	200	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1AR
		Dilution Factor: 1		Analysis Time..: 22:42		
Arsenic	9.2 J	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1AP
		Dilution Factor: 1		Analysis Time..: 22:42		
Barium	132	50	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1AT
		Dilution Factor: 1		Analysis Time..: 22:42		
Beryllium	0.67 J	5	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1AU
		Dilution Factor: 1		Analysis Time..: 22:42		
Calcium	719000 N	20000	ug/L	SW846 6010C	08/24-08/30/11	MLXMK1AV
		Dilution Factor: 20		Analysis Time..: 12:13		
Cadmium	1.0 J	5	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1AW
		Dilution Factor: 1		Analysis Time..: 22:42		
Cobalt	6.5 J	50	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1AX
		Dilution Factor: 1		Analysis Time..: 22:42		
Chromium	17.1	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A0
		Dilution Factor: 1		Analysis Time..: 22:42		
Copper	21.6 J	25	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A1
		Dilution Factor: 1		Analysis Time..: 22:42		
Iron	16200	100	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A2
		Dilution Factor: 1		Analysis Time..: 22:42		
Magnesium	211000 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A3
		Dilution Factor: 10		Analysis Time..: 13:55		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW607D001

TOTAL Metals

Lot-Sample #...: F1H230464-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	2380	15	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A4
		Dilution Factor: 1		Analysis Time..: 22:42		
Sodium	61600 N	1000	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A5
		Dilution Factor: 1		Analysis Time..: 11:23		
Nickel	19.3 J	40	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A6
		Dilution Factor: 1		Analysis Time..: 22:42		
Lead	41.8	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A7
		Dilution Factor: 1		Analysis Time..: 22:42		
Antimony	5.8 J	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A8
		Dilution Factor: 1		Analysis Time..: 22:42		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A9
		Dilution Factor: 1		Analysis Time..: 22:42		
Strontium	830 N	100	ug/L	SW846 6010C	08/24-08/30/11	MLXMK1CA
		Dilution Factor: 20		Analysis Time..: 12:13		
Vanadium	15.3 J	50	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1CD
		Dilution Factor: 1		Analysis Time..: 22:42		
Zinc	305	20	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1CE
		Dilution Factor: 1		Analysis Time..: 22:42		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXMK2CC
		Dilution Factor: 1		Analysis Time..: 19:06		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW607D001

General Chemistry

Lot-Sample #...: F1H230464-001 Work Order #...: MLXMK Matrix.....: WATER
Date Sampled...: 08/19/11 08:45 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	101	20.0	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 100		Analysis Time..: 01:08		
Fluoride	4.9	0.50	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 5		Analysis Time..: 12:37		
Nitrate	0.042	0.020	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1		Analysis Time..: 12:22		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 5		Analysis Time..: 12:37		
Phosphate as P, Ortho	0.077 B,J	0.50	mg/L	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1		Analysis Time..: 12:22		
Sulfate	63.8 J	2.5	mg/L	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 5		Analysis Time..: 12:37		
Total Alkalinity	1490	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	754	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001

GC/MS Volatiles

Lot-Sample #...: F1H230464-002 Work Order #...: MLXMN1AC Matrix.....: WATER
Date Sampled...: 08/19/11 09:15 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 01:10
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001

GC/MS Volatiles

Lot-Sample #...: F1H230464-002 Work Order #...: MLXMN1AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	111	(85 - 120)
Dibromofluoromethane	107	(85 - 115)
1,2-Dichloroethane-d4	107	(70 - 120)
4-Bromofluorobenzene	100	(75 - 120)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001

TOTAL Metals

Lot-Sample #...: F1H230464-002 Matrix.....: WATER
Date Sampled...: 08/19/11 09:15 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	0.28 J	1	ug/L	SW846 6020A	08/24-08/26/11	MLXMN1A5
		Dilution Factor: 1		Analysis Time..: 03:56		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AF
		Dilution Factor: 1		Analysis Time..: 22:49		
Aluminum	2010 NE	200	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AG
		Dilution Factor: 1		Analysis Time..: 22:49		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AE
		Dilution Factor: 1		Analysis Time..: 22:49		
Barium	55.0	50	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AH
		Dilution Factor: 1		Analysis Time..: 22:49		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AJ
		Dilution Factor: 1		Analysis Time..: 22:49		
Calcium	382000 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AK
		Dilution Factor: 10		Analysis Time..: 14:02		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AL
		Dilution Factor: 1		Analysis Time..: 22:49		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AM
		Dilution Factor: 1		Analysis Time..: 22:49		
Chromium	11.5	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AN
		Dilution Factor: 1		Analysis Time..: 22:49		
Copper	11.4 J	25	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AP
		Dilution Factor: 1		Analysis Time..: 22:49		
Iron	4210	100	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AQ
		Dilution Factor: 1		Analysis Time..: 22:49		
Magnesium	110000 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AR
		Dilution Factor: 10		Analysis Time..: 14:02		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001

TOTAL Metals

Lot-Sample #...: F1H230464-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**462**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXMN1AT**
		Dilution Factor: 1		Analysis Time..: 22:49		
Sodium	**191000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXMN1AU**
		Dilution Factor: 10		Analysis Time..: 14:02		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AV
		Dilution Factor: 1		Analysis Time..: 22:49		
Lead	**10.8**	**10**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXMN1AW**
		Dilution Factor: 1		Analysis Time..: 22:49		
Antimony	ND	50	ug/L	SW846 6010C	08/24-08/30/11	MLXMN1AX
		Dilution Factor: 5		Analysis Time..: 12:23		
Selenium	ND	75	ug/L	SW846 6010C	08/24-08/30/11	MLXMN1A0
		Dilution Factor: 5		Analysis Time..: 12:23		
Strontium	**15200 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXMN1A1**
		Dilution Factor: 10		Analysis Time..: 14:02		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1A3
		Dilution Factor: 1		Analysis Time..: 22:49		
Zinc	**41.9**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXMN1A4**
		Dilution Factor: 1		Analysis Time..: 22:49		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXMN2A2
		Dilution Factor: 1		Analysis Time..: 19:12		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001

General Chemistry

Lot-Sample #...: F1H230464-002 Work Order #...: MLXMN Matrix.....: WATER
Date Sampled...: 08/19/11 09:15 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	455	40.0	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 200		Analysis Time..: 07:18		
Fluoride	0.64	0.10	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 1		Analysis Time..: 06:32		
Nitrate	0.018 B	0.020	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1		Analysis Time..: 06:32		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 10		Analysis Time..: 07:03		
Phosphate as P, Ortho	0.087 B,J	0.50	mg/L	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1		Analysis Time..: 06:32		
Sulfate	413 J	100	mg/L	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 200		Analysis Time..: 07:18		
Total Alkalinity	382	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1940	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW16D0001

TOTAL Metals

Lot-Sample #...: F1H230464-003 Matrix.....: WATER
Date Sampled...: 08/19/11 10:30 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	**29.3**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLXM11AP**
		Dilution Factor: 1		Analysis Time..: 04:23		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM11A2
		Dilution Factor: 1		Analysis Time..: 23:14		
Aluminum	ND NE	200	ug/L	SW846 6010C	08/24-08/27/11	MLXM11A3
		Dilution Factor: 1		Analysis Time..: 23:14		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM11A1
		Dilution Factor: 1		Analysis Time..: 23:14		
Barium	**118**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM11A4**
		Dilution Factor: 1		Analysis Time..: 23:14		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXM11A5
		Dilution Factor: 1		Analysis Time..: 23:14		
Calcium	**58400 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM11A6**
		Dilution Factor: 10		Analysis Time..: 14:27		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXM11A7
		Dilution Factor: 1		Analysis Time..: 23:14		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXM11A8
		Dilution Factor: 1		Analysis Time..: 23:14		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM11AA
		Dilution Factor: 1		Analysis Time..: 23:14		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/27/11	MLXM11AC
		Dilution Factor: 1		Analysis Time..: 23:14		
Iron	**1590**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM11AD**
		Dilution Factor: 1		Analysis Time..: 23:14		
Magnesium	**63800 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM11AE**
		Dilution Factor: 10		Analysis Time..: 14:27		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW16D0001

TOTAL Metals

Lot-Sample #...: F1H230464-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**808**	15	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM11AF**
		Dilution Factor: 1		Analysis Time..: 23:14		
Sodium	**154000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM11AG**
		Dilution Factor: 10		Analysis Time..: 14:27		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/27/11	MLXM11AH
		Dilution Factor: 1		Analysis Time..: 23:14		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM11AJ
		Dilution Factor: 1		Analysis Time..: 23:14		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM11AK
		Dilution Factor: 1		Analysis Time..: 23:14		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/27/11	MLXM11AL
		Dilution Factor: 1		Analysis Time..: 23:14		
Strontium	**264 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLXM11A9**
		Dilution Factor: 10		Analysis Time..: 12:20		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXM11CC
		Dilution Factor: 1		Analysis Time..: 23:14		
Zinc	**24.3**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM11CD**
		Dilution Factor: 1		Analysis Time..: 23:14		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXM12CA
		Dilution Factor: 1		Analysis Time..: 19:51		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW16D0001

General Chemistry

Lot-Sample #...: F1H230464-003 Work Order #...: MLXM1 Matrix.....: WATER
Date Sampled...: 08/19/11 10:30 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	96.0	20.0	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 100		Analysis Time..: 04:44		
Fluoride	7.1	0.50	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 5		Analysis Time..: 04:13		
Nitrate	0.0064 B	0.020	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1		Analysis Time..: 03:58		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 5		Analysis Time..: 04:13		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1		Analysis Time..: 03:58		
Sulfate	53.5 J	2.5	mg/L	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 5		Analysis Time..: 04:13		
Total Alkalinity	512	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	744	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001

GC/MS Volatiles

Lot-Sample #...: F1H230464-004 Work Order #...: MLXM31AC Matrix.....: WATER
Date Sampled...: 08/19/11 12:00 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 02:30
Dilution Factor: 10
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethene	**51 D**	**10**	**ug/L**
1,2-Dichloroethene (total)	**26 D**	**20**	**ug/L**
1,2-Dichloropropane	ND	10	ug/L
Acetone	ND	20	ug/L
Benzene	ND	10	ug/L
Bromodichloromethane	ND	10	ug/L
Bromoform	ND	10	ug/L
Bromomethane	ND	20	ug/L
2-Butanone	ND	50	ug/L
Carbon disulfide	ND	20	ug/L
Carbon tetrachloride	ND	10	ug/L
Chlorobenzene	ND	20	ug/L
Dibromochloromethane	ND	10	ug/L
Chloroethane	ND	20	ug/L
Chloroform	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,1-Dichloroethane	**110 D**	**10**	**ug/L**
1,2-Dichloroethane	ND	10	ug/L
cis-1,3-Dichloropropene	ND	10	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	10	ug/L
2-Hexanone	ND	50	ug/L
Methylene chloride	ND	10	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Styrene	ND	10	ug/L
1,1,2,2-Tetrachloroethane	ND	10	ug/L
Tetrachloroethene	ND	10	ug/L
Toluene	ND	10	ug/L
1,1,2-Trichloroethane	ND	10	ug/L
Trichloroethene	**80 D**	**10**	**ug/L**
Vinyl chloride	**1.1 J,D**	**20**	**ug/L**
Xylenes (total)	ND	50	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001

GC/MS Volatiles

Lot-Sample #...: F1H230464-004 Work Order #...: MLXM31AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	107	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
4-Bromofluorobenzene	101	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001

GC/MS Volatiles

Lot-Sample #...: F1H230464-004 Work Order #...: MLXM32AC Matrix.....: WATER
Date Sampled...: 08/19/11 12:00 Date Received..: 08/23/11
Prep Date.....: 08/31/11 Analysis Date..: 08/31/11
Prep Batch #...: 1244011 Analysis Time..: 21:28
Dilution Factor: 20
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,1-Trichloroethane	500 D	20	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	93	(85 - 120)
Dibromofluoromethane	95	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
4-Bromofluorobenzene	95	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001

TOTAL Metals

Lot-Sample #...: F1H230464-004 Matrix.....: WATER
Date Sampled...: 08/19/11 12:00 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	**48.0**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLXM31A5**
		Dilution Factor: 1		Analysis Time..: 04:36		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AF
		Dilution Factor: 1		Analysis Time..: 23:27		
Aluminum	ND NE	200	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AG
		Dilution Factor: 1		Analysis Time..: 23:27		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AE
		Dilution Factor: 1		Analysis Time..: 23:27		
Barium	**39.4 J**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM31AH**
		Dilution Factor: 1		Analysis Time..: 23:27		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AJ
		Dilution Factor: 1		Analysis Time..: 23:27		
Calcium	**61900 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM31AK**
		Dilution Factor: 10		Analysis Time..: 14:40		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AL
		Dilution Factor: 1		Analysis Time..: 23:27		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AM
		Dilution Factor: 1		Analysis Time..: 23:27		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AN
		Dilution Factor: 1		Analysis Time..: 23:27		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AP
		Dilution Factor: 1		Analysis Time..: 23:27		
Iron	ND	100	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AQ
		Dilution Factor: 1		Analysis Time..: 23:27		
Magnesium	**23000 N**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM31AR**
		Dilution Factor: 1		Analysis Time..: 12:20		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001

TOTAL Metals

Lot-Sample #...: F1H230464-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	172	15	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AT
		Dilution Factor: 1		Analysis Time..: 23:27		
Sodium	25500 N	1000	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AU
		Dilution Factor: 1		Analysis Time..: 12:20		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AV
		Dilution Factor: 1		Analysis Time..: 23:27		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AW
		Dilution Factor: 1		Analysis Time..: 23:27		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AX
		Dilution Factor: 1		Analysis Time..: 23:27		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/27/11	MLXM31A0
		Dilution Factor: 1		Analysis Time..: 23:27		
Strontium	169 N	50	ug/L	SW846 6010C	08/24-08/30/11	MLXM31A1
		Dilution Factor: 10		Analysis Time..: 12:32		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXM31A3
		Dilution Factor: 1		Analysis Time..: 23:27		
Zinc	83.7	20	ug/L	SW846 6010C	08/24-08/27/11	MLXM31A4
		Dilution Factor: 1		Analysis Time..: 23:27		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXM32A2
		Dilution Factor: 1		Analysis Time..: 20:04		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001

General Chemistry

Lot-Sample #...: F1H230464-004 Work Order #...: MLXM3 Matrix.....: WATER
Date Sampled...: 08/19/11 12:00 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	43.3	2.0	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 10		Analysis Time..: 03:27		
Fluoride	1.2	0.10	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 1		Analysis Time..: 02:25		
Nitrate	0.14	0.020	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1		Analysis Time..: 02:25		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 5		Analysis Time..: 02:40		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1		Analysis Time..: 02:25		
Sulfate	44.4 J	2.5	mg/L	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 5		Analysis Time..: 02:40		
Total Alkalinity	202	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	352	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW9004

TOTAL Metals

Lot-Sample #...: F1H230464-005 **Matrix.....:** WATER
Date Sampled...: 08/19/11 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	**28.4**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLXM61AP**
		Dilution Factor: 1		Analysis Time..: 04:56		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM61A2
		Dilution Factor: 1		Analysis Time..: 23:34		
Aluminum	ND NE	200	ug/L	SW846 6010C	08/24-08/27/11	MLXM61A3
		Dilution Factor: 1		Analysis Time..: 23:34		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM61A1
		Dilution Factor: 1		Analysis Time..: 23:34		
Barium	**119**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM61A4**
		Dilution Factor: 1		Analysis Time..: 23:34		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXM61A5
		Dilution Factor: 1		Analysis Time..: 23:34		
Calcium	**54900 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM61A6**
		Dilution Factor: 10		Analysis Time..: 14:46		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXM61A7
		Dilution Factor: 1		Analysis Time..: 23:34		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXM61A8
		Dilution Factor: 1		Analysis Time..: 23:34		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AA
		Dilution Factor: 1		Analysis Time..: 23:34		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AC
		Dilution Factor: 1		Analysis Time..: 23:34		
Iron	**1590**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM61AD**
		Dilution Factor: 1		Analysis Time..: 23:34		
Magnesium	**62400 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM61AE**
		Dilution Factor: 10		Analysis Time..: 14:46		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW9004

TOTAL Metals

Lot-Sample #...: F1H230464-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	811	15	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AF
		Dilution Factor: 1		Analysis Time..: 23:34		
Sodium	153000 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AG
		Dilution Factor: 10		Analysis Time..: 14:46		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AH
		Dilution Factor: 1		Analysis Time..: 23:34		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AJ
		Dilution Factor: 1		Analysis Time..: 23:34		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AK
		Dilution Factor: 1		Analysis Time..: 23:34		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AL
		Dilution Factor: 1		Analysis Time..: 23:34		
Strontium	162 N	50	ug/L	SW846 6010C	08/24-08/30/11	MLXM61A9
		Dilution Factor: 10		Analysis Time..: 12:39		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXM61CC
		Dilution Factor: 1		Analysis Time..: 23:34		
Zinc	24.0	20	ug/L	SW846 6010C	08/24-08/27/11	MLXM61CD
		Dilution Factor: 1		Analysis Time..: 23:34		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXM62CA
		Dilution Factor: 1		Analysis Time..: 20:10		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW9004

General Chemistry

Lot-Sample #...: F1H230464-005 Work Order #...: MLXM6 Matrix.....: WATER
Date Sampled...: 08/19/11 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	95.4	20.0	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 100		Analysis Time..: 02:10		
Fluoride	7.1	0.50	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 5		Analysis Time..: 01:39		
Nitrate	0.10	0.020	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1		Analysis Time..: 01:23		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 5		Analysis Time..: 01:39		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1		Analysis Time..: 01:23		
Sulfate	53.5 J	2.5	mg/L	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 5		Analysis Time..: 01:39		
Total Alkalinity	503	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	747	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001

GC/MS Volatiles

Lot-Sample #...: F1H230464-006 Work Order #...: MLXNA1AN Matrix.....: WATER
Date Sampled...: 08/19/11 13:40 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 02:56
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**0.40 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.42 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001

GC/MS Volatiles

Lot-Sample #...: F1H230464-006 Work Order #...: MLXNA1AN Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	103	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001

TOTAL Metals

Lot-Sample #...: F1H230464-006 Matrix.....: WATER
Date Sampled...: 08/19/11 13:40 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	1.4	1	ug/L	SW846 6020A	08/24-08/26/11	MLXNA1AG
		Dilution Factor: 1		Analysis Time..: 05:03		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AR
		Dilution Factor: 1		Analysis Time..: 23:40		
Aluminum	236 NE	200	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AT
		Dilution Factor: 1		Analysis Time..: 23:40		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AQ
		Dilution Factor: 1		Analysis Time..: 23:40		
Barium	26.1 J	50	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AU
		Dilution Factor: 1		Analysis Time..: 23:40		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AV
		Dilution Factor: 1		Analysis Time..: 23:40		
Calcium	141000 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AW
		Dilution Factor: 10		Analysis Time..: 14:53		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AX
		Dilution Factor: 1		Analysis Time..: 23:40		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A0
		Dilution Factor: 1		Analysis Time..: 23:40		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A1
		Dilution Factor: 1		Analysis Time..: 23:40		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A2
		Dilution Factor: 1		Analysis Time..: 23:40		
Iron	275	100	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A3
		Dilution Factor: 1		Analysis Time..: 23:40		
Magnesium	60700 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A4
		Dilution Factor: 10		Analysis Time..: 14:53		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001

TOTAL Metals

Lot-Sample #...: F1H230464-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**20.6**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXNA1A5**
		Dilution Factor: 1		Analysis Time..: 23:40		
Sodium	**254000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXNA1A6**
		Dilution Factor: 10		Analysis Time..: 14:53		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A7
		Dilution Factor: 1		Analysis Time..: 23:40		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A8
		Dilution Factor: 1		Analysis Time..: 23:40		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A9
		Dilution Factor: 1		Analysis Time..: 23:40		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AA
		Dilution Factor: 1		Analysis Time..: 23:40		
Strontium	**2650 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXNA1AC**
		Dilution Factor: 10		Analysis Time..: 14:53		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AE
		Dilution Factor: 1		Analysis Time..: 23:40		
Zinc	ND	20	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AF
		Dilution Factor: 1		Analysis Time..: 23:40		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXNA2AD
		Dilution Factor: 1		Analysis Time..: 20:17		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001

General Chemistry

Lot-Sample #...: F1H230464-006 Work Order #...: MLXNA Matrix.....: WATER
Date Sampled...: 08/19/11 13:40 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	488	40.0	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 200		Analysis Time..: 05:46		
Fluoride	0.56	0.10	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 1		Analysis Time..: 04:59		
Nitrate	0.018 B	0.020	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1		Analysis Time..: 04:59		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 10		Analysis Time..: 05:30		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1		Analysis Time..: 04:59		
Sulfate	185 J	5.0	mg/L	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 10		Analysis Time..: 05:30		
Total Alkalinity	257	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1430	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001

General Chemistry

Lot-Sample #...: F1H230464-007 Work Order #...: MLXND Matrix.....: WATER
Date Sampled...: 08/19/11 14:05 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	5750	400	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 2000		Analysis Time..: 10:54		
Fluoride	0.40 B	2.0	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 20		Analysis Time..: 10:23		
Nitrate	0.44	0.040	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 2		Analysis Time..: 10:08		
Nitrite	ND	4.0	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 200		Analysis Time..: 10:39		
Phosphate as P, Ortho	0.63 B,J	1.0	mg/L	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 2		Analysis Time..: 10:08		
Sulfate	1860 J	100	mg/L	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 200		Analysis Time..: 10:39		
Total Alkalinity	1750	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	13500	1000	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 100		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #4

GC/MS Volatiles

Lot-Sample #...: F1H230464-008 Work Order #...: MLXNE1AA Matrix.....: WATER
Date Sampled...: 08/19/11 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 03:22
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Methyl-2-pentanone	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**3.0**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Acetone	**9.9**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**0.16 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.13 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #4

GC/MS Volatiles

Lot-Sample #...: F1H230464-008 Work Order #...: MLXNE1AA Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	105	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	100	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW607D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-009 Matrix.....: WATER
Date Sampled...: 08/19/11 08:45 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	12.3	1 Dilution Factor: 1	ug/L	**SW846 6020A** Analysis Time..: 05:09	**08/24-08/26/11**	**MLXN11A2**
Prep Batch #...: 1236079						
Silver	ND	10 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 23:59	08/24-08/27/11	MLXN11AC
Aluminum	**2580 NE**	200 Dilution Factor: 1	ug/L	**SW846 6010C** Analysis Time..: 23:59	**08/24-08/27/11**	**MLXN11AD**
Arsenic	ND	10 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 23:59	08/24-08/27/11	MLXN11AA
Barium	64.1	50 Dilution Factor: 1	ug/L	**SW846 6010C** Analysis Time..: 23:59	**08/24-08/27/11**	**MLXN11AE**
Beryllium	ND	5 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 23:59	08/24-08/27/11	MLXN11AF
Calcium	**159000 N**	10000 Dilution Factor: 10	ug/L	**SW846 6010C** Analysis Time..: 15:12	**08/24-08/27/11**	**MLXN11AG**
Cadmium	ND	5 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 23:59	08/24-08/27/11	MLXN11AH
Cobalt	ND	50 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 23:59	08/24-08/27/11	MLXN11AJ
Chromium	ND	10 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 23:59	08/24-08/27/11	MLXN11AK
Copper	ND	25 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 23:59	08/24-08/27/11	MLXN11AL
Iron	**2440**	100 Dilution Factor: 1	ug/L	**SW846 6010C** Analysis Time..: 23:59	**08/24-08/27/11**	**MLXN11AM**
Magnesium	**101000 N**	10000 Dilution Factor: 10	ug/L	**SW846 6010C** Analysis Time..: 15:12	**08/24-08/27/11**	**MLXN11AN**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW607D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**561**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN11AP**
		Dilution Factor: 1		Analysis Time..: 23:59		
Sodium	**60200 N**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN11AQ**
		Dilution Factor: 1		Analysis Time..: 12:51		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/27/11	MLXN11AR
		Dilution Factor: 1		Analysis Time..: 23:59		
Lead	**6.0 J**	**10**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN11AT**
		Dilution Factor: 1		Analysis Time..: 23:59		
Antimony	**4.4 J**	**10**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN11AU**
		Dilution Factor: 1		Analysis Time..: 23:59		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/27/11	MLXN11AV
		Dilution Factor: 1		Analysis Time..: 23:59		
Strontium	**412 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN11AW**
		Dilution Factor: 10		Analysis Time..: 15:12		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXN11A0
		Dilution Factor: 1		Analysis Time..: 23:59		
Zinc	**47.7**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN11A1**
		Dilution Factor: 1		Analysis Time..: 23:59		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXN12AX
		Dilution Factor: 1		Analysis Time..: 20:23		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-010 Matrix.....: WATER
Date Sampled...: 08/19/11 09:15 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	ND	1	ug/L	SW846 6020A	08/24-08/26/11	MLXN61AD
		Dilution Factor: 1		Analysis Time..: 05:16		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AG
		Dilution Factor: 1		Analysis Time..: 00:06		
Aluminum	ND NE	200	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AH
		Dilution Factor: 1		Analysis Time..: 00:06		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AF
		Dilution Factor: 1		Analysis Time..: 00:06		
Barium	**45.7 J**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXN61AJ**
		Dilution Factor: 1		Analysis Time..: 00:06		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AK
		Dilution Factor: 1		Analysis Time..: 00:06		
Calcium	**265000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN61AL**
		Dilution Factor: 10		Analysis Time..: 15:19		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AM
		Dilution Factor: 1		Analysis Time..: 00:06		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AN
		Dilution Factor: 1		Analysis Time..: 00:06		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AP
		Dilution Factor: 1		Analysis Time..: 00:06		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AQ
		Dilution Factor: 1		Analysis Time..: 00:06		
Iron	**521**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXN61AR**
		Dilution Factor: 1		Analysis Time..: 00:06		
Magnesium	**76000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN61AT**
		Dilution Factor: 10		Analysis Time..: 15:19		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-010 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**18.7**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXN61AU**
		Dilution Factor: 1		Analysis Time..: 00:06		
Sodium	**187000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN61AV**
		Dilution Factor: 10		Analysis Time..: 15:19		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AW
		Dilution Factor: 1		Analysis Time..: 00:06		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AX
		Dilution Factor: 1		Analysis Time..: 00:06		
Antimony	ND	50	ug/L	SW846 6010C	08/24-08/30/11	MLXN61A0
		Dilution Factor: 5		Analysis Time..: 12:49		
Selenium	ND	75	ug/L	SW846 6010C	08/24-08/30/11	MLXN61A1
		Dilution Factor: 5		Analysis Time..: 12:49		
Strontium	**15300 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN61A2**
		Dilution Factor: 10		Analysis Time..: 15:19		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AA
		Dilution Factor: 1		Analysis Time..: 00:06		
Zinc	ND	20	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AC
		Dilution Factor: 1		Analysis Time..: 00:06		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXN62A3
		Dilution Factor: 1		Analysis Time..: 20:30		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW16D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-011 Matrix.....: WATER
Date Sampled...: 08/19/11 10:30 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	**27.7**	1 Dilution Factor: 1	**ug/L**	**SW846 6020A** Analysis Time..: 05:36	**08/24-08/26/11**	**MLXN81AD**
Prep Batch #...: 1236079						
Silver	ND	10 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AG
Aluminum	ND NE	200 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AH
Arsenic	ND	10 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AF
Barium	**116**	**50** Dilution Factor: 1	**ug/L**	**SW846 6010C** Analysis Time..: 00:25	**08/24-08/28/11**	**MLXN81AJ**
Beryllium	ND	5 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AK
Calcium	**52800 N**	**10000** Dilution Factor: 10	**ug/L**	**SW846 6010C** Analysis Time..: 15:38	**08/24-08/27/11**	**MLXN81AL**
Cadmium	ND	5 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AM
Cobalt	ND	50 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AN
Chromium	ND	10 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AP
Copper	ND	25 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AQ
Iron	**1490**	**100** Dilution Factor: 1	**ug/L**	**SW846 6010C** Analysis Time..: 00:25	**08/24-08/28/11**	**MLXN81AR**
Magnesium	**59400 N**	**10000** Dilution Factor: 10	**ug/L**	**SW846 6010C** Analysis Time..: 15:38	**08/24-08/27/11**	**MLXN81AT**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW16D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-011 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**774**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXN81AU**
		Dilution Factor: 1		Analysis Time..: 00:25		
Sodium	**147000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN81AV**
		Dilution Factor: 10		Analysis Time..: 15:38		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	MLXN81AW
		Dilution Factor: 1		Analysis Time..: 00:25		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXN81AX
		Dilution Factor: 1		Analysis Time..: 00:25		
Antimony	**4.1 J**	**10**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXN81A0**
		Dilution Factor: 1		Analysis Time..: 00:25		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLXN81A1
		Dilution Factor: 1		Analysis Time..: 00:25		
Strontium	**207 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLXN81A2**
		Dilution Factor: 10		Analysis Time..: 12:45		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXN81AA
		Dilution Factor: 1		Analysis Time..: 00:25		
Zinc	**22.8**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXN81AC**
		Dilution Factor: 1		Analysis Time..: 00:25		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXN82A3
		Dilution Factor: 1		Analysis Time..: 21:02		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-012 Matrix.....: WATER
Date Sampled...: 08/19/11 12:00 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	**46.0**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLXPA1AD**
		Dilution Factor: 1		Analysis Time..: 05:42		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AG
		Dilution Factor: 1		Analysis Time..: 00:32		
Aluminum	ND NE	200	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AH
		Dilution Factor: 1		Analysis Time..: 00:32		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AF
		Dilution Factor: 1		Analysis Time..: 00:32		
Barium	**34.3 J**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXPA1AJ**
		Dilution Factor: 1		Analysis Time..: 00:32		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AK
		Dilution Factor: 1		Analysis Time..: 00:32		
Calcium	**66000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXPA1AL**
		Dilution Factor: 10		Analysis Time..: 15:44		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AM
		Dilution Factor: 1		Analysis Time..: 00:32		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AN
		Dilution Factor: 1		Analysis Time..: 00:32		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AP
		Dilution Factor: 1		Analysis Time..: 00:32		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AQ
		Dilution Factor: 1		Analysis Time..: 00:32		
Iron	ND	100	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AR
		Dilution Factor: 1		Analysis Time..: 00:32		
Magnesium	**22800 N**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXPA1AT**
		Dilution Factor: 1		Analysis Time..: 13:23		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-012 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	79.8	15	ug/L	**SW846 6010C**	**08/24-08/28/11**	**MLXPA1AU**
		Dilution Factor: 1		Analysis Time..: 00:32		
Sodium	**25400 N**	1000	ug/L	**SW846 6010C**	**08/24-08/27/11**	**MLXPA1AV**
		Dilution Factor: 1		Analysis Time..: 13:23		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AW
		Dilution Factor: 1		Analysis Time..: 00:32		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AX
		Dilution Factor: 1		Analysis Time..: 00:32		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1A0
		Dilution Factor: 1		Analysis Time..: 00:32		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1A1
		Dilution Factor: 1		Analysis Time..: 00:32		
Strontium	**207 N**	**50**	ug/L	**SW846 6010C**	**08/24-08/30/11**	**MLXPA1A2**
		Dilution Factor: 10		Analysis Time..: 12:51		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AA
		Dilution Factor: 1		Analysis Time..: 00:32		
Zinc	**73.0**	**20**	ug/L	**SW846 6010C**	**08/24-08/28/11**	**MLXPA1AC**
		Dilution Factor: 1		Analysis Time..: 00:32		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXPA2A3
		Dilution Factor: 1		Analysis Time..: 21:08		

NOTE(S):

J Estimated result, Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW9004 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-013 Matrix.....: WATER
Date Sampled...: 08/19/11 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	**28.2**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLXPC1AD**
		Dilution Factor: 1		Analysis Time..: 05:49		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AG
		Dilution Factor: 1		Analysis Time..: 00:38		
Aluminum	ND NE	200	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AH
		Dilution Factor: 1		Analysis Time..: 00:38		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AF
		Dilution Factor: 1		Analysis Time..: 00:38		
Barium	**119**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXPC1AJ**
		Dilution Factor: 1		Analysis Time..: 00:38		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AK
		Dilution Factor: 1		Analysis Time..: 00:38		
Calcium	**56000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXPC1AL**
		Dilution Factor: 10		Analysis Time..: 15:50		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AM
		Dilution Factor: 1		Analysis Time..: 00:38		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AN
		Dilution Factor: 1		Analysis Time..: 00:38		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AP
		Dilution Factor: 1		Analysis Time..: 00:38		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AQ
		Dilution Factor: 1		Analysis Time..: 00:38		
Iron	**1540**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXPC1AR**
		Dilution Factor: 1		Analysis Time..: 00:38		
Magnesium	**63100 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXPC1AT**
		Dilution Factor: 10		Analysis Time..: 15:50		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW9004 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-013 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**796**	15	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXPC1AU**
		Dilution Factor: 1		Analysis Time..: 00:38		
Sodium	**155000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXPC1AV**
		Dilution Factor: 10		Analysis Time..: 15:50		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AW
		Dilution Factor: 1		Analysis Time..: 00:38		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AX
		Dilution Factor: 1		Analysis Time..: 00:38		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1A0
		Dilution Factor: 1		Analysis Time..: 00:38		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1A1
		Dilution Factor: 1		Analysis Time..: 00:38		
Strontium	**202 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLXPC1A2**
		Dilution Factor: 10		Analysis Time..: 12:57		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AA
		Dilution Factor: 1		Analysis Time..: 00:38		
Zinc	23.3	20	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AC
		Dilution Factor: 1		Analysis Time..: 00:38		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXPC2A3
		Dilution Factor: 1		Analysis Time..: 21:15		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-014 Matrix.....: WATER
Date Sampled...: 08/19/11 13:40 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	**1.5**	1	ug/L	SW846 6020A	08/24-08/26/11	MLXPD1AD
		Dilution Factor: 1		Analysis Time..: 05:56		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AG
		Dilution Factor: 1		Analysis Time..: 00:45		
Aluminum	**80.8 BNE**	200	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AH
		Dilution Factor: 1		Analysis Time..: 00:45		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AF
		Dilution Factor: 1		Analysis Time..: 00:45		
Barium	**23.1 J**	50	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AJ
		Dilution Factor: 1		Analysis Time..: 00:45		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AK
		Dilution Factor: 1		Analysis Time..: 00:45		
Calcium	**141000 N**	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXPD1AL
		Dilution Factor: 10		Analysis Time..: 15:57		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AM
		Dilution Factor: 1		Analysis Time..: 00:45		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AN
		Dilution Factor: 1		Analysis Time..: 00:45		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AP
		Dilution Factor: 1		Analysis Time..: 00:45		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AQ
		Dilution Factor: 1		Analysis Time..: 00:45		
Iron	**75.2 J**	100	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AR
		Dilution Factor: 1		Analysis Time..: 00:45		
Magnesium	**58100 N**	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXPD1AT
		Dilution Factor: 10		Analysis Time..: 15:57		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-014 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**12.5 J**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXPD1AU**
		Dilution Factor: 1		Analysis Time..: 00:45		
Sodium	**252000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXPD1AV**
		Dilution Factor: 10		Analysis Time..: 15:57		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AW
		Dilution Factor: 1		Analysis Time..: 00:45		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AX
		Dilution Factor: 1		Analysis Time..: 00:45		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1A0
		Dilution Factor: 1		Analysis Time..: 00:45		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1A1
		Dilution Factor: 1		Analysis Time..: 00:45		
Strontium	**2590 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXPD1A2**
		Dilution Factor: 10		Analysis Time..: 15:57		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AA
		Dilution Factor: 1		Analysis Time..: 00:45		
Zinc	**7.1 J**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXPD1AC**
		Dilution Factor: 1		Analysis Time..: 00:45		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXPD2A3
		Dilution Factor: 1		Analysis Time..: 21:21		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 Work Order #...: ML3581AA Matrix.....: WATER
MB Lot-Sample #: F1H250000-192

Prep Date.....: 08/25/11 Analysis Time..: 22:13
Analysis Date..: 08/25/11 Prep Batch #...: 1237192
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
******* INVALID DATA ON FOLLOWING LINE *******				
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 Work Order #...: ML3581AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Dibromofluoromethane	102	(85 - 115)		
1,2-Dichloroethane-d4	102	(70 - 120)		
4-Bromofluorobenzene	99	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 Work Order #...: ML7GA1AA Matrix.....: WATER
MB Lot-Sample #: F1I010000-011

Prep Date.....: 08/31/11 Analysis Time..: 19:26
Analysis Date..: 08/31/11 Prep Batch #...: 1244011
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	98	(85 - 120)
Dibromofluoromethane	99	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	97	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H240000-077 **Prep Batch #...:** 1236077						
Uranium	ND	1.0	ug/L	SW846 6020A	08/24-08/26/11	ML0JJ1AA
		Dilution Factor: 1				
		Analysis Time..: 03:36				
MB Lot-Sample #: F1H240000-079 **Prep Batch #...:** 1236079						
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AD
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Antimony	ND	10.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AU
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AA
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Barium	ND	50.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AE
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AF
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AH
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Calcium	ND	1000	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AG
		Dilution Factor: 1				
		Analysis Time..: 11:10				
Chromium	ND	10.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AK
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AJ
		Dilution Factor: 1				
		Analysis Time..: 22:16				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H230464 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AL
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Iron	ND	100	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AM
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Lead	ND	10.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AT
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Magnesium	ND	1000	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AN
		Dilution Factor: 1				
		Analysis Time..: 11:10				
Manganese	ND	15.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AP
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Nickel	ND	40.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AR
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Selenium	ND	15.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AV
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Silver	ND	10.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AC
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Sodium	ND	1000	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AQ
		Dilution Factor: 1				
		Analysis Time..: 11:10				
Strontium	**1.0 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**ML0JQ1AW**
		Dilution Factor: 1				
		Analysis Time..: 11:10				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1A0
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Zinc	ND	20.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1A1
		Dilution Factor: 1				
		Analysis Time..: 22:16				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H300000-042 **Prep Batch #...:** 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	ML43Q1AA
		Dilution Factor: 1				
		Analysis Time..: 18:53				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H230464 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: ML2HP1AA		MB Lot-Sample #:	F1H230000-169	
	ND	0.20	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Fluoride		Work Order #: ML2HR1AA		MB Lot-Sample #:	F1H230000-170	
	ND	0.10	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Nitrate		Work Order #: ML2HV1AA		MB Lot-Sample #:	F1H230000-171	
	ND	0.020	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Nitrite		Work Order #: ML2HX1AA		MB Lot-Sample #:	F1H230000-172	
	ND	0.020	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Phosphate as P, Ortho		Work Order #: ML2H11AA		MB Lot-Sample #:	F1H230000-173	
	0.24 B	**0.50**	**mg/L**	**MCAWW 300.0A**	**08/20/11**	**1235173**
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Sulfate		Work Order #: ML2H21AA		MB Lot-Sample #:	F1H230000-174	
	0.052 B	**0.50**	**mg/L**	**MCAWW 300.0A**	**08/20/11**	**1235174**
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Total Alkalinity		Work Order #: ML3DL1AA		MB Lot-Sample #:	F1H260000-032	
	ND	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Alkalinity		Work Order #: ML51P1AA		MB Lot-Sample #:	F1H300000-085	
	ND	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: ML0CP1AA		MB Lot-Sample #:	F1H240000-026	
	ND	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1				
		Analysis Time..: 00:00				

(Continued on next page)

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H230464 Matrix.....: WATER

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 Work Order #...: ML3581AC Matrix.....: WATER
LCS Lot-Sample#: F1H250000-192
Prep Date.....: 08/25/11 Analysis Date..: 08/25/11
Prep Batch #...: 1237192 Analysis Time..: 21:20
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
cis-1,3-Dichloropropene	104	(70 - 130)	SW846 8260B
Dibromochloromethane	102	(60 - 135)	SW846 8260B
Vinyl chloride	116	(50 - 145)	SW846 8260B
Bromomethane	153 a	(30 - 145)	SW846 8260B
Chloroethane	120	(60 - 135)	SW846 8260B
Acetone	105	(40 - 140)	SW846 8260B
1,1-Dichloroethene	100	(70 - 130)	SW846 8260B
Methylene chloride	90	(55 - 140)	SW846 8260B
Carbon disulfide	95	(35 - 160)	SW846 8260B
1,1-Dichloroethane	100	(70 - 135)	SW846 8260B
2-Butanone	105	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	98	(85 - 115)	SW846 8260B
Chloroform	99	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	101	(65 - 130)	SW846 8260B
Carbon tetrachloride	101	(65 - 140)	SW846 8260B
1,2-Dichloroethane	97	(70 - 130)	SW846 8260B
Benzene	99	(80 - 120)	SW846 8260B
Trichloroethene	95	(70 - 125)	SW846 8260B
1,2-Dichloropropane	97	(75 - 125)	SW846 8260B
Bromodichloromethane	100	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	100	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	106	(55 - 140)	SW846 8260B
Toluene	107	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	104	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	100	(75 - 125)	SW846 8260B
2-Hexanone	96	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	110	(60 - 135)	SW846 8260B
Chlorobenzene	100	(80 - 120)	SW846 8260B
Bromoform	106	(70 - 130)	SW846 8260B
Ethylbenzene	106	(75 - 125)	SW846 8260B
Styrene	110	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	106	(65 - 130)	SW846 8260B
Tetrachloroethene	99	(45 - 150)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 Work Order #...: ML3581AC Matrix.....: WATER
LCS Lot-Sample#: F1H250000-192

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichlorobenzene	**102**	**(70 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	105	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 **Work Order #...:** ML7GA1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: F1I010000-011 ML7GA1AD-LCSD
Prep Date.....: 08/31/11 **Analysis Date..:** 09/01/11
Prep Batch #...: 1244011 **Analysis Time..:** 04:21
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1,1-Trichloroethane	**107**	**(65 - 130)**			**SW846 8260B**
	110	**(65 - 130)**	2.8	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	96	(85 - 120)
	102	(85 - 120)
Dibromofluoromethane	98	(85 - 115)
	95	(85 - 115)
1,2-Dichloroethane-d4	96	(70 - 120)
	91	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)
	103	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H240000-077 **Prep Batch #...:** 1236077					
Uranium	107	(80 - 120)	SW846 6020A	08/24-08/26/11	ML0JJ1AC
		Dilution Factor: 1		Analysis Time..: 03:43	
LCS Lot-Sample#: F1H240000-079 **Prep Batch #...:** 1236079					
Arsenic	102	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A2
		Dilution Factor: 1		Analysis Time..: 22:23	
Silver	92	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A3
		Dilution Factor: 1		Analysis Time..: 22:23	
Aluminum	106	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A4
		Dilution Factor: 1		Analysis Time..: 22:23	
Barium	107	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A5
		Dilution Factor: 1		Analysis Time..: 22:23	
Beryllium	115	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A6
		Dilution Factor: 1		Analysis Time..: 22:23	
Calcium	106	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A7
		Dilution Factor: 1		Analysis Time..: 11:16	
Cadmium	106	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A8
		Dilution Factor: 1		Analysis Time..: 22:23	
Cobalt	102	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A9
		Dilution Factor: 1		Analysis Time..: 22:23	
Chromium	103	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CA
		Dilution Factor: 1		Analysis Time..: 22:23	
Copper	102	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CC
		Dilution Factor: 1		Analysis Time..: 22:23	
Iron	108	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CD
		Dilution Factor: 1		Analysis Time..: 22:23	
Magnesium	100	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CE
		Dilution Factor: 1		Analysis Time..: 11:16	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	106	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CF
		Dilution Factor: 1	Analysis Time..: 22:23		
Sodium	104	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CG
		Dilution Factor: 1	Analysis Time..: 11:16		
Nickel	103	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CH
		Dilution Factor: 1	Analysis Time..: 22:23		
Lead	102	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CJ
		Dilution Factor: 1	Analysis Time..: 22:23		
Antimony	104	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CK
		Dilution Factor: 1	Analysis Time..: 22:23		
Selenium	104	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CL
		Dilution Factor: 1	Analysis Time..: 22:23		
Strontium	99	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CM
		Dilution Factor: 1	Analysis Time..: 11:16		
Vanadium	104	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CP
		Dilution Factor: 1	Analysis Time..: 22:23		
Zinc	112	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CQ
		Dilution Factor: 1	Analysis Time..: 22:23		
LCS Lot-Sample#: F1H300000-042 **Prep Batch #...:** 1242042					
Thallium	102	(80 - 120)	SW846 6010C	08/29-08/31/11	ML43Q1AC
		Dilution Factor: 1	Analysis Time..: 18:59		

NOTE(S):

Calculations are performed before rounding to avnid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230464 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: ML2HP1AC	LCS Lot-Sample#: F1H230000-169		
	96	(90 - 110)	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 1	Analysis Time..: 11:51		
Fluoride		Work Order #: ML2HR1AC	LCS Lot-Sample#: F1H230000-170		
	98	(90 - 110)	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 1	Analysis Time..: 11:51		
Nitrate		Work Order #: ML2HV1AC	LCS Lot-Sample#: F1H230000-171		
	100	(90 - 110)	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1	Analysis Time..: 11:51		
Nitrite		Work Order #: ML2HX1AC	LCS Lot-Sample#: F1H230000-172		
	99	(90 - 110)	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 1	Analysis Time..: 11:51		
Phosphate as P, Ortho		Work Order #: ML2H11AC	LCS Lot-Sample#: F1H230000-173		
	98	(90 - 110)	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1	Analysis Time..: 11:51		
Sulfate		Work Order #: ML2H21AC	LCS Lot-Sample#: F1H230000-174		
	96	(90 - 110)	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 1	Analysis Time..: 11:51		
Total Alkalinity		Work Order #: ML3DL1AC	LCS Lot-Sample#: F1H260000-032		
	94	(90 - 110)	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: ML3DL1AD	LCS Lot-Sample#: F1H260000-032		
	94	(90 - 110)	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: ML51P1AC	LCS Lot-Sample#: F1H300000-085		
	94	(90 - 110)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: ML51P1AD	LCS Lot-Sample#: F1H300000-085		
	94	(90 - 110)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230464 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids		Work Order #: ML0CP1AC LCS Lot-Sample#: F1H240000-026			
	98	(90 - 113)	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 Work Order #...: MLXMN1C4-MS Matrix.....: WATER
MS Lot-Sample #: F1H230464-002 MLXMN1C5-MSD
Date Sampled...: 08/19/11 09:15 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 01:37
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	96	(70 - 130)			SW846 8260B
	99	(70 - 130)	2.1	(0-20)	SW846 8260B
Dibromochloromethane	105	(60 - 135)			SW846 8260B
	102	(60 - 135)	2.0	(0-20)	SW846 8260B
Vinyl chloride	106	(50 - 145)			SW846 8260B
	110	(50 - 145)	4.4	(0-20)	SW846 8260B
Bromomethane	144	(30 - 145)			SW846 8260B
	137	(30 - 145)	5.1	(0-20)	SW846 8260B
Chloroethane	117	(60 - 135)			SW846 8260B
	120	(60 - 135)	2.1	(0-20)	SW846 8260B
Acetone	103	(40 - 140)			SW846 8260B
	102	(40 - 140)	0.97	(0-20)	SW846 8260B
1,1-Dichloroethene	108	(70 - 130)			SW846 8260B
	106	(70 - 130)	2.0	(0-20)	SW846 8260B
Methylene chloride	93	(55 - 140)			SW846 8260B
	92	(55 - 140)	0.97	(0-20)	SW846 8260B
Carbon disulfide	105	(35 - 160)			SW846 8260B
	104	(35 - 160)	0.57	(0-20)	SW846 8260B
1,1-Dichloroethane	103	(70 - 135)			SW846 8260B
	102	(70 - 135)	1.3	(0-20)	SW846 8260B
2-Butanone	100	(30 - 150)			SW846 8260B
	104	(30 - 150)	4.7	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	99	(85 - 115)			SW846 8260B
	100	(85 - 115)	0.90	(0-20)	SW846 8260B
Chloroform	100	(65 - 135)			SW846 8260B
	102	(65 - 135)	1.9	(0-20)	SW846 8260B
1,1,1-Trichloroethane	100	(65 - 130)			SW846 8260B
	103	(65 - 130)	2.8	(0-20)	SW846 8260B
Carbon tetrachloride	98	(65 - 140)			SW846 8260B
	98	(65 - 140)	0.01	(0-20)	SW846 8260B
1,2-Dichloroethane	100	(70 - 130)			SW846 8260B
	101	(70 - 130)	1.2	(0-20)	SW846 8260B
Benzene	102	(80 - 120)			SW846 8260B
	101	(80 - 120)	0.29	(0-20)	SW846 8260B
Trichloroethene	95	(70 - 125)			SW846 8260B
	97	(70 - 125)	1.4	(0-20)	SW846 8260B
1,2-Dichloropropane	101	(75 - 125)			SW846 8260B
	102	(75 - 125)	0.59	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 Work Order #...: MLXMN1C4-MS Matrix.....: WATER
MS Lot-Sample #: F1H230464-002 MLXMN1C5-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	100	(75 - 120)			SW846 8260B
	100	(75 - 120)	0.19	(0-20)	SW846 8260B
1,1,2-Trichloroethane	105	(75 - 125)			SW846 8260B
	103	(75 - 125)	2.3	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	102	(55 - 140)			SW846 8260B
	103	(55 - 140)	1.5	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	106	(75 - 120)	0.09	(0-20)	SW846 8260B
1,3-Dichlorobenzene	100	(75 - 125)			SW846 8260B
	104	(75 - 125)	3.7	(0-20)	SW846 8260B
1,4-Dichlorobenzene	99	(75 - 125)			SW846 8260B
	100	(75 - 125)	1.9	(0-20)	SW846 8260B
2-Hexanone	101	(55 - 130)			SW846 8260B
	93	(55 - 130)	8.2	(0-20)	SW846 8260B
4-Methyl-2-pentanone	112	(60 - 135)			SW846 8260B
	111	(60 - 135)	0.80	(0-20)	SW846 8260B
Chlorobenzene	101	(80 - 120)			SW846 8260B
	102	(80 - 120)	0.78	(0-20)	SW846 8260B
Bromoform	106	(70 - 130)			SW846 8260B
	104	(70 - 130)	1.9	(0-20)	SW846 8260B
Ethylbenzene	106	(75 - 125)			SW846 8260B
	106	(75 - 125)	0.28	(0-20)	SW846 8260B
Styrene	112	(65 - 135)			SW846 8260B
	112	(65 - 135)	0.17	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	104	(65 - 130)			SW846 8260B
	106	(65 - 130)	1.1	(0-20)	SW846 8260B
Tetrachloroethene	98	(45 - 150)			SW846 8260B
	100	(45 - 150)	1.8	(0-20)	SW846 8260B
1,2-Dichlorobenzene	103	(70 - 120)			SW846 8260B
	105	(70 - 120)	1.6	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
	108	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
	108	(85 - 115)
1,2-Dichloroethane-d4	102	(70 - 120)
	106	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)
	100	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER
Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H230464-002 **Prep Batch #...:** 1236077							
Uranium	109	(80 - 120)			SW846 6020A	08/24-08/26/11	MLXMN1CR
	109	(80 - 120)	0.45	(0-20)	SW846 6020A	08/24-08/26/11	MLXMN1CT
		Dilution Factor: 1					
		Analysis Time..: 04:09					
MS Lot-Sample #: F1H230464-002 **Prep Batch #...:** 1236079							
Aluminum	121 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DD
	124 N	(80 - 120)	2.5	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DE
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Antimony	107	(80 - 120)			SW846 6010C	08/24-08/30/11	MLXMN1EA
	103	(80 - 120)	3.3	(0-20)	SW846 6010C	08/24-08/30/11	MLXMN1EC
		Dilution Factor: 5					
		Analysis Time..: 12:36					
Arsenic	101	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1C8
	103	(80 - 120)	1.6	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1C9
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Barium	103	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DF
	104	(80 - 120)	0.35	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DG
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Beryllium	107	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DH
	108	(80 - 120)	0.89	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DJ
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Cadmium	96	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DM
	98	(80 - 120)	1.7	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DN
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Calcium	176 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DK
	184 N	(80 - 120)	0.19	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DL
		Dilution Factor: 10					
		Analysis Time..: 14:15					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER
Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	95	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DR
	96	(80 - 120)	1.4	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DT
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Cobalt	92	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DP
	93	(80 - 120)	1.6	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DQ
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Copper	98	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DU
	99	(80 - 120)	1.0	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DV
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Iron	100	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DW
	103	(80 - 120)	2.1	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DX
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Lead	92	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1D8
	93	(80 - 120)	1.7	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1D9
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Magnesium	111	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1D0
	115	(80 - 120)	0.37	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1D1
		Dilution Factor: 10					
		Analysis Time..: 14:15					
Manganese	97	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1D2
	99	(80 - 120)	1.4	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1D3
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Nickel	92	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1D6
	94	(80 - 120)	1.7	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1D7
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Selenium	108	(80 - 120)			SW846 6010C	08/24-08/30/11	MLXMN1CF
	104	(80 - 120)	3.4	(0-20)	SW846 6010C	08/24-08/30/11	MLXMN1CG
		Dilution Factor: 5					
		Analysis Time..: 12:36					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER
Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	90	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DA
	91	(80 - 120)	1.1	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DC
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Sodium	137 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1D4
	140 N	(80 - 120)	0.16	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1D5
		Dilution Factor: 10					
		Analysis Time..: 14:15					
Strontium	115	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1CH
	105	(80 - 120)	0.62	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1CJ
		Dilution Factor: 10					
		Analysis Time..: 14:15					
Vanadium	98	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1CM
	99	(80 - 120)	1.1	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1CN
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Zinc	106	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1CP
	107	(80 - 120)	1.4	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1CQ
		Dilution Factor: 1					
		Analysis Time..: 23:02					

MS Lot-Sample #: F1H230464-002 **Prep Batch #...:** 1242042

Thallium	90	(80 - 120)			SW846 6010C	08/29-08/31/11	MLXMN1E3
	92	(80 - 120)	1.2	(0-20)	SW846 6010C	08/29-08/31/11	MLXMN1E4
		Dilution Factor: 1					
		Analysis Time..: 19:38					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER
Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H230464-010 **Prep Batch #...:** 1236077							
Uranium	103	(80 - 120)			SW846 6020A	08/24-08/26/11	MLXN61CH
	101	(80 - 120)	1.3	(0-20)	SW846 6020A	08/24-08/26/11	MLXN61CJ
		Dilution Factor: 1					
		Analysis Time..: 05:23					
MS Lot-Sample #: F1H230464-010 **Prep Batch #...:** 1236079							
Aluminum	108	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61CR
	107	(80 - 120)	1.3	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61CT
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Antimony	104	(80 - 120)			SW846 6010C	08/24-08/30/11	MLXN61A4
	106	(80 - 120)	2.0	(0-20)	SW846 6010C	08/24-08/30/11	MLXN61A5
		Dilution Factor: 5					
		Analysis Time..: 12:55					
Arsenic	104	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61CM
	103	(80 - 120)	0.86	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61CN
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Barium	106	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61CU
	105	(80 - 120)	0.88	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61CV
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Beryllium	111	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61CW
	110	(80 - 120)	0.62	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61CX
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Cadmium	100	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61C2
	99	(80 - 120)	0.81	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61C3
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Calcium	8.7 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXN61C0
	0 N	(80 - 120)	0.0	(0-20)	SW846 6010C	08/24-08/27/11	MLXN61C1
		Dilution Factor: 10					
		Analysis Time..: 15:25					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER
Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	98	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61C6
	97	(80 - 120)	0.94	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61C7
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Cobalt	96	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61C4
	95	(80 - 120)	1.1	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61C5
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Copper	101	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61C8
	100	(80 - 120)	1.2	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61C9
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Iron	102	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61DA
	101	(80 - 120)	0.73	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61DC
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Lead	96	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61DM
	95	(80 - 120)	1.6	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61DN
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Magnesium	67 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXN61DD
	70 N	(80 - 120)	0.34	(0-20)	SW846 6010C	08/24-08/27/11	MLXN61DE
		Dilution Factor: 10					
		Analysis Time..: 15:25					
Manganese	101	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61DF
	100	(80 - 120)	0.85	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61DG
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Nickel	95	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61DK
	94	(80 - 120)	1.2	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61DL
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Selenium	105	(80 - 120)			SW846 6010C	08/24-08/30/11	MLXN61A6
	105	(80 - 120)	0.11	(0-20)	SW846 6010C	08/24-08/30/11	MLXN61A7
		Dilution Factor: 5					
		Analysis Time..: 12:55					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER
Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	92	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61CP
	91	(80 - 120)	0.90	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61CQ
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Sodium	35 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXN61DH
	25 N	(80 - 120)	0.54	(0-20)	SW846 6010C	08/24-08/27/11	MLXN61DJ
		Dilution Factor: 10					
		Analysis Time..: 15:25					
Strontium	35 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXN61A8
	35 N	(80 - 120)	0.0	(0-20)	SW846 6010C	08/24-08/27/11	MLXN61A9
		Dilution Factor: 10					
		Analysis Time..: 15:25					
Vanadium	101	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61CD
	100	(80 - 120)	0.83	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61CE
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Zinc	110	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61CF
	109	(80 - 120)	1.2	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61CG
		Dilution Factor: 1					
		Analysis Time..: 00:12					
MS Lot-Sample #: F1H230464-010 **Prep Batch #...:** 1242042							
Thallium	94	(80 - 120)			SW846 6010C	08/29-08/31/11	MLXN61DQ
	93	(80 - 120)	0.22	(0-20)	SW846 6010C	08/29-08/31/11	MLXN61DR
		Dilution Factor: 1					
		Analysis Time..: 20:49					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230464 Matrix.....: WATER
Date Sampled...: 08/19/11 09:15 Date Received..: 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLXMN1EM		MS Lot-Sample #: F1H230464-002	
	103	(90 - 110)	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 200	Analysis Time..: 07:18		
Fluoride		Work Order #...: MLXMN1EP		MS Lot-Sample #: F1H230464-002	
	78 N	(90 - 110)	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 1	Analysis Time..: 06:32		
Nitrate		Work Order #...: MLXMN1ER		MS Lot-Sample #: F1H230464-002	
	94	(90 - 110)	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1	Analysis Time..: 06:32		
Nitrite		Work Order #...: MLXMN1EU		MS Lot-Sample #: F1H230464-002	
	54 N	(90 - 110)	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 10	Analysis Time..: 07:03		
Phosphate as P, Ortho		Work Order #...: MLXMN1EW		MS Lot-Sample #: F1H230464-002	
	11 N	(90 - 110)	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1	Analysis Time..: 06:32		
Sulfate		Work Order #...: MLXMN1E0		MS Lot-Sample #: F1H230464-002	
	95	(90 - 110)	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 200	Analysis Time..: 07:18		
Total Alkalinity		Work Order #...: MLW9L1EM		MS Lot-Sample #: F1H230407-007	
	98	(80 - 120)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #...: MLXMN1EH		MS Lot-Sample #: F1H230464-002	
	144 N	(80 - 120)	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230464 **Work Order #...:** MLXMN-SMP MLXMN-DUP **Matrix.....:** WATER

Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H230464-002		
	455	459	mg/L	0.81	(0-20)	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 200				Analysis Time..: 07:18		
Fluoride						SD Lot-Sample #: F1H230464-002		
	0.64	0.62	mg/L	2.2	(0-20)	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 1				Analysis Time..: 06:32		
Nitrate						SD Lot-Sample #: F1H230464-002		
	0.018 B	0.022	mg/L	21	(0-20)	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1				Analysis Time..: 06:32		
Nitrite						SD Lot-Sample #: F1H230464-002		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 10				Analysis Time..: 07:03		
Phosphate as P, Ortho						SD Lot-Sample #: F1H230464-002		
	0.087 B,J	ND	mg/L	200	(0-20)	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1				Analysis Time..: 06:32		
Sulfate						SD Lot-Sample #: F1H230464-002		
	413 J	414	mg/L	0.13	(0-20)	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 200				Analysis Time..: 07:18		
Total Alkalinity						SD Lot-Sample #: F1H230464-002		
	382	388	mg/L	1.5	(0-20)	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1				Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230464 **Work Order #...:** MLT47-SMP MLT47-DUP **Matrix.....:** WATER

Date Sampled...: 08/18/11 08:25 **Date Received..:** 08/19/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H190431-007		
	1340	1380	mg/L	2.4	(0-0.0)	MCAWW 160.1	08/24-08/25/11	1236026
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230464 **Work Order #...:** MLW9L-SMP MLW9L-DUP **Matrix.....:** WATER

Date Sampled...: 08/22/11 11:00 **Date Received..:** 08/23/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #:	F1H230407-007	
	254	254	mg/L	0.16	(0-20)	MCAWW 310.1	08/30/11	1242085

Dilution Factor: 1 Analysis Time..: 00:00

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW607D001

Radiochemistry

Lab Sample ID: F1H230464-001
Work Order: MLXMK
Matrix: WATER

Date Collected: 08/19/11 0845
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238042		Yld % 45
Uranium 234	5.35		0.74	0.10	0.09	08/26/11	08/30/11
Uranium 235/236	0.24		0.14	0.10	0.05	08/26/11	08/30/11
Uranium 238	4.99		0.70	0.10	0.12	08/26/11	08/30/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001

Radiochemistry

Lab Sample ID: F1H230464-002
Work Order: MLXMN
Matrix: WATER

Date Collected: 08/19/11 0915
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238042		Yld % 71
Uranium 234	0.097		0.069	0.100	0.077	08/26/11	08/30/11
Uranium 235/236	0.015	U	0.036	0.100	0.071	08/26/11	08/30/11
Uranium 238	0.070		0.056	0.100	0.057	08/26/11	08/30/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW16D0001

Radiochemistry

Lab Sample ID: F1H230464-003
Work Order: MLXM1
Matrix: WATER

Date Collected: 08/19/11 1030
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238042		Yld % 51
Uranium 234	8.8		1.0	0.1	0.09	08/26/11	09/01/11
Uranium 235/236	0.44		0.18	0.10	0.08	08/26/11	09/01/11
Uranium 238	9.7		1.1	0.1	0.07	08/26/11	09/01/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001

Radiochemistry

Lab Sample ID: F1H230464-004
Work Order: MLXM3
Matrix: WATER

Date Collected: 08/19/11 1200
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238042		Yld % 73
Uranium 234	14.9		1.4	0.1	0.06	08/26/11	08/30/11
Uranium 235/236	0.87		0.21	0.10	0.05	08/26/11	08/30/11
Uranium 238	14.4		1.4	0.1	0.04	08/26/11	08/30/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW9004

Radiochemistry

Lab Sample ID: F1H230464-005
Work Order: MLXM6
Matrix: WATER

Date Collected: 08/19/11 0000
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238042		Yld % 58
Uranium 234	8.38		0.95	0.10	0.08	08/26/11	08/30/11
Uranium 235/236	0.42		0.16	0.10	0.08	08/26/11	08/30/11
Uranium 238	8.88		0.99	0.10	0.06	08/26/11	08/30/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001

Radiochemistry

Lab Sample ID: F1H230464-006
Work Order: MLXNA
Matrix: WATER

Date Collected: 08/19/11 1340
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238042		Yld % 62
Uranium 234	0.89		0.21	0.10	0.07	08/26/11	08/30/11
Uranium 235/236	0.041		0.047	0.100	0.037	08/26/11	08/30/11
Uranium 238	0.39		0.14	0.10	0.06	08/26/11	08/30/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW607D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230464-009
Work Order: MLXN1
Matrix: WATER

Date Collected: 08/19/11 0845
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238042		Yld % 61
Uranium 234	3.88		0.53	0.10	0.08	08/26/11	08/30/11
Uranium 235/236	0.119		0.085	0.100	0.074	08/26/11	08/30/11
Uranium 238	4.04		0.55	0.10	0.08	08/26/11	08/30/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230464-010
Work Order: MLXN6
Matrix: WATER

Date Collected: 08/19/11 0915
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238069		Yld % 65
Uranium 234	0.023	U	0.037	0.100	0.061	08/26/11	08/31/11
Uranium 235/236	0.0	U	0.013	0.100	0.035	08/26/11	08/31/11
Uranium 238	0.028	U	0.036	0.100	0.047	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW16D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230464-011
Work Order: MLXN8
Matrix: WATER

Date Collected: 08/19/11 1030
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238069		Yld % 51
Uranium 234	8.9		1.0	0.1	0.06	08/26/11	08/31/11
Uranium 235/236	0.45		0.18	0.10	0.05	08/26/11	08/31/11
Uranium 238	10.2		1.1	0.1	0.04	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230464-012
Work Order: MLXPA
Matrix: WATER

Date Collected: 08/19/11 1200
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238069		Yld % 63
Uranium 234	16.1		1.6	0.1	0.07	08/26/11	08/31/11
Uranium 235/236	0.80		0.22	0.10	0.06	08/26/11	08/31/11
Uranium 238	16.7		1.6	0.1	0.05	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW9004 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230464-013
Work Order: MLXPC
Matrix: WATER

Date Collected: 08/19/11 0000
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238069		Yld % 52
Uranium 234	9.2		1.0	0.1	0.06	08/26/11	08/31/11
Uranium 235/236	0.58		0.20	0.10	0.04	08/26/11	08/31/11
Uranium 238	10.1		1.1	0.1	0.08	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230464-014
Work Order: MLXPD
Matrix: WATER

Date Collected: 08/19/11 1340
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238069		Yld % 72
Uranium 234	0.77		0.18	0.10	0.05	08/26/11	08/31/11
Uranium 235/236	0.036		0.041	0.100	0.032	08/26/11	08/31/11
Uranium 238	0.46		0.14	0.10	0.04	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H230464
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**Batch # 1238042**		**Yld % 74**	**F1H260000-042B**
Uranium 234	0.007	U	0.027	0.100	0.060	08/26/11	08/30/11
Uranium 235/236	-0.0027	U	0.0055	0.100	0.050	08/26/11	08/30/11
Uranium 238	0.009	U	0.026	0.100	0.056	08/26/11	08/30/11
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**Batch # 1238069**		**Yld % 100**	**F1H260000-069B**
Uranium 234	0.021	U	0.029	0.100	0.045	08/26/11	08/31/11
Uranium 235/236	0.004	U	0.019	0.100	0.047	08/26/11	08/31/11
Uranium 238	0.004	U	0.015	0.100	0.038	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H230464
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H260000-042C**
Uranium 234	3.26	3.17	0.41	0.05	94	97	(76 - 136)
Uranium 238	3.39	3.20	0.41	0.04	94	95	(76 - 134)
	Batch #:	1238042		Analysis Date:	08/30/11		
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H260000-069C**
Uranium 234	3.26	3.06	0.40	0.05	92	94	(76 - 136)
Uranium 238	3.39	3.36	0.42	0.04	92	99	(76 - 134)
	Batch #:	1238069		Analysis Date:	08/31/11		

NOTE (S)

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

MATRIX SPIKE/MATRIX SPIKE DUPLICATE REPORT

Radiochemistry

Client Lot ID: F1H230464
Matrix: WATER

Date Sampled: 08/19/11 0915
Date Received: 08/23/11 0905

Parameter		Spike Amount	SPIKE Result	Total Uncert. (2 σ+/-)	Spike Yld	SAMPLE Result		Total Uncert. (2σ +/-)	QC Sample ID % Yld	%Rec	QC Control Limits
Iso URANIUM (LONG CT) DOE A				**pCi/L**		**A-01-R MOD**				**F1H230464-002**	
Uranium 234		3.26	3.12	0.43	73	0.097		0.069	71	93	(65 - 146)
	Spk2	3.26	3.59	0.50	62	0.097		0.069	71	107	(65 - 146)
									Precision:	14	%RPD
Uranium 238		3.39	3.14	0.43	73	0.070		0.056	71	90	(68 - 143)
	Spk2	3.39	3.34	0.47	62	0.070		0.056	71	96	(68 - 143)
									Precision:	6	%RPD
		Batch #:	1238042		Analysis date:		08/30/11				
Iso URANIUM (LONG CT) DOE A				**pCi/L**		**A-01-R MOD**				**F1H230464-010**	
Uranium 234		3.26	2.71	0.40	69	0.023	U	0.037	65	82	(65 - 146)
	Spk2	3.26	3.11	0.45	65	0.023	U	0.037	65	95	(65 - 146)
									Precision:	14	%RPD
Uranium 238		3.39	2.84	0.41	69	0.028	U	0.036	65	83	(68 - 143)
	Spk2	3.39	3.18	0.46	65	0.028	U	0.036	65	93	(68 - 143)
									Precision:	11	%RPD
		Batch #:	1238069		Analysis date:		08/31/11				

NOTE(S)

Data are incomplete without the case narrative.

Calculations are performed before rounding to avoid round-off error in calculated results

U Result is less than the sample detection limit.

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
#SMPS in LOT: 14 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A03MW607D001			2011-08-19 / 845	MLXMK	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS,V

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A03MW703DD0001			2011-08-19 / 915	MLXMN	WATER

SAMPLE COMMENTS:

ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS,V

Project Manager: LMF
Quote #: 89251
SDG:
Project: 140415
Guterl Steel
PO#: 697886
Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

	XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
D	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
D	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
S	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS,V

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-20

Project: 140415
Guterl Steel
Analytical Due Date: 2011-08-31

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-09-02

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 14
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium listead of 200.8

S	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	XX	QK	SW846 8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
S	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
S	XX	C8	MCAW W 300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	C9	MCAW W 300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	CX	MCAW W 300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	CY	MCAW W 300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	DO	MCAW W 300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	GO	MCAW W 300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	VC	MCAW W 310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	C8	MCAW W 300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	C9	MCAW W 300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	CX	MCAW W 300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	CY	MCAW W 300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	DO	MCAW W 300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	GO	MCAW W 300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	VC	MCAW W 310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A03MW16D0001			2011-08-19 / 1030	MLXM1	WATER

SAMPLE COMMENTS:

	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	A02MW40001			2011-08-19 / 1200	MLXM3	WATER

SAMPLE COMMENTS:

CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS,V

Project Manager: LMF
Quote #: 89251
SDG:
Project: 140415
Guterl Steel
PO#: 697886
Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	A03MW9004			2011-08-19 / 0	MLXM6	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	A04AMW701DD0001			2011-08-19 / 1340	MLXNA	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	A04BMW707DD0001			2011-08-19 / 1405	MLXND	WATER

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: 2-98

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-20

Project: 140415
Guterl Steel
Analytical Due Date: 2011-08-31

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-09-02

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 14
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	TRIP BLANK #4			2011-08-19 / 0	MLXNE	WATER

SAMPLE COMMENTS:

XX	QK	SW846 8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	A03MW607D0001 DISSOLVED			2011-08-19 / 845	MLXN1	WATER

SAMPLE COMMENTS:

NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,METS

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-20

Project: 140415
Guterl Steel
Analytical Due Date: 2011-08-31

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-09-02

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 14
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium listead of 200.8

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
10	A03MW703DD0001 DISSOLVED			2011-08-19 / 915	MLXN6	WATER

SAMPLE COMMENTS:

BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
D MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

D	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
S	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,METS

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-20

Project: 140415
Guterl Steel
Analytical Due Date: 2011-08-31

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-09-02

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 14
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

S	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
11	A03MW16D0001 DISSOLVED			2011-08-19 / 1030	MLXN8	WATER

SAMPLE COMMENTS:

	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706 Shaw Environmental & Infrastructure Inc

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin

#SMPS In LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

12 A02MW40001 DISSOLVED 2011-08-19 / 1200 MLXPA WATER

SAMPLE COMMENTS:

MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
13	A03MW9004 DISSOLVED			2011-08-19 / 0	MLXPC	WATER

SAMPLE COMMENTS:

ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
14	A04AMW701DD0001 DISSOLVED			2011-08-19 / 1340	MLXPD	WATER

SAMPLE COMMENTS:

TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
#SMPS In LOT: 14 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

estAmerica St. Louis
715 Rider Trail North
th City, MO 63045
one 314.298.8566 fax 314.298.8757

CUL 208

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/19/2011	COC No: 012
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
ncinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below ____			SDG No.
3) 782-4807 FAX	☒ 2 weeks			
oject Name: Former Guteri Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)		TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury						Sample Specific Notes:
3MW607D0001	8/19/2011	0845	Grab	GW	7	X		X	X	X	X	X	X												
3MW703DD0001	8/19/2011	0915	Grab	GW	10	X		X	X	X	X	X	X	X											
3MW703DD0001MS	8/19/2011	0915	Grab	GW	10	X		X	X	X	X	X	X	X											
3MW703DD0001MSD	8/19/2011	0915	Grab	GW	10	X		X	X	X	X	X	X	X											
3MW16D0001	8/19/2011	1030	Grab	GW	7	X		X	X	X	X	X	X												
2MW40001	8/19/2011	1200	Grab	GW	10	X		X	X	X	X	X	X	X											
3MW9004	8/19/2011	--	Grab	GW	7	X		X	X	X	X	X	X												
4AMW701DD0001	8/19/2011	1340	Grab	GW	10	X		X	X	X	X	X	X	X											
4BMW707DD0001	8/19/2011	1405	Grab	GW	1						X	X	X	X											
p Blank #4	8/19/2011	--	TB	--	1									X											

eservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

sible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* ____ *Months*

ecial Instructions/QC Requirements & Comments:

linquished by:	Company: Shaw E & I. Inc.	Date/Time: 8/19/11 1610	Received by:	Company: TA Buffalo	Date/Time: 8/19/11 16:07
inquished by:	Company: TA Buffalo	Date/Time: 8/19/11 17:00	Received by:	Company: TA STL	Date/Time: 8/20/11 0830
inquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

107 [illegible]

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): FIH230464 TestAmerica St. Louis

CUR Form #: 2 0 8

CONDITION UPON RECEIPT FORM

Client: SHAW

Quote No: 89251

COC/RFA No: 012

Initiated By: NVO | MB Date: 8/20/11 Time: 0830

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: Y (N)

Shipping # (s):*				Sample Temperature (s):**			
1.	4485 0258 4752	6.		1.	2	6.	
2.	4598 9397 6570 MPS - received 8-23-11@0905			2.	ambient	7.	
3.		8.		3.	↓	8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- if not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N MB 8-23-11	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	Y (N) MB 8-23-11	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

ONLY REC'D 1 COOLER WHICH CONTAINED 1X500P (ANIONS) FOR EACH SAMPLE ID. ALSO ALL VOA EXCEPT FOR SAMPLE ID A04BMW707DD0001 -- PLEASE LOG W/O SAMPLE. LHF 8/25/11
Received rest of sample on 8-23-11@0905 except VOA A04BW707DD0001 AM
Received following w/ pH ~ 7 - added HNO3 from lot K11059
A03MW707 00001 (2XLP) unfiltered
A03MW703 DD0001 (1XLP) filtered
Per LF MS/MSD on COC = MS/MSD, not SOP
LOT FIH 1004:
Sample #3 COC & Sample do not match
COC = A03MW1[illegible]0001 Sample = A03MW1[illegible]
MB 8-25-11

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/25/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guterl Steel

Lot #: F1H240450

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

September 7, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H240450

This report contains the analytical results for the eight samples received under chain of custody by TestAmerica in St. Louis on August 24, 2011. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1243089
Acetonitrile and Tetrahydrofuran were removed from the initial calibration lowest point due to poor response. Addtionally, Acetone, Methyl acetate, n-Butanol and 1,4-Dioxane were removed from the lowest 2 points.

Isobutanol was removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration.

The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

The mininium RRF for 1,1,2,2-Tetrachloroethane is below the QC limit.

The CCV recovery was outside the upper QC limit (greater than 20% D) for Bromomethane, Trichlorofluoromethane and Chloroethane indicating a potential high bias for those analytes in the samples associated with this CCV. Bromomethane and Trichlorofluoromethane were not detected above the reporting limit and so this excursion does not affect the results. Chloroethane was detected above the reporting limit in samples F1H240450-001 and 003. Sample F1H240450-003 will be re-analyzed.

The LCS recovery for Bromomethane is outside the upper QC limit, indicating a potential positive bias for that analyte. This analyte was not observed above the reporting limit in the associated samples; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1H240450 (1): A02MW9005
F1H240450 (3): A02MW020001
F1H240450 (5): TRIP BLANK#6

Batch: 1244139
The CCV %D for 1,4-Dioxane, 2-Hexanone, Cyclohexanone and n-Butylbenzene is outside the established QC limits. The analytes are not part of the -re-analysis request and thus this excursion does not affect the data.

There was insufficient sample volume to perform an MS/MSD analysis. An LCS/LCSD was performed to demonstrate accuracy and replicate precision.

The sample and method blank surrogate recovery is outside established QC limits. The sample target analyte (Chloroethane) is not associated with this surrogate excursion.

Affected Samples:
F1H240450 (3): A02MW020001

ICP-MS (SW846-6020)

Batch: 1237036
The samples were analyzed at a dilution due to high concentrations of target and interfering analytes causing internal standard and QC failures when run at a lesser dilution. The reporting limit has been adjusted for the dilution.

Affected Samples:
F1H240450 (4): A04BMW707DD0001

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1237037
The MS and MSD recovery for calcium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

The concentration of strontium in the CCB is greater than 3 times the MDL. The samples associated with this CCB exhibit concentrations greater than ten times the concentrations observed in the CCB.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H240450 (1): A02MW9005
F1H240450 (2): A02MW010001
F1H240450 (3): A02MW020001
F1H240450 (6): A02MW9005 DISSOLVED
F1H240450 (7): A02MW010001 DISSOLVED
F1H240450 (8): A02MW020001 DISSOLVED

Chloride (MCAWW 300.0A)

Batch: 1236153
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H240450 (1): A02MW9005
F1H240450 (2): A02MW010001
F1H240450 (3): A02MW020001

Sulfate (MCAWW 300.0A)

Batch: 1236158
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H240450 (1): A02MW9005
F1H240450 (2): A02MW010001
F1H240450 (3): A02MW020001

Fluoride (MCAWW 300.0A)

Batch: 1236154
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H240450 (1): A02MW9005
F1H240450 (2): A02MW010001

Nitrite (MCAWW 300.0A)

Batch: 1236156
The following samples were reported ND at dilution for Nitrite, due to high concentrations of Chloride, which masked the Nitrite retention time in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrate are attributed to matrix interference.

The closing CCV recovery was outside the upper QC limit (110.85%), indicating a potential high bias for Nitrite in the samples associated with this CCV (F1H240450-001 & 003). However, Nitrite was not detected above the reporting limit in the associated samples.

Affected Samples:
F1H240450 (1): A02MW9005
F1H240450 (2): A02MW010001
F1H240450 (3): A02MW020001

Orthophosphate as P (MCAWW300.0A)

Batch: 1236157
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrate are attributed to matrix interference.

Affected Samples:
F1H240450 (1): A02MW9005
F1H240450 (2): A02MW010001
F1H240450 (3): A02MW020001

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H240450

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H240450

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
ML0TA	001	A02MW9005	08/23/11	
ML0TF	002	A02MW010001	08/23/11	08:50
ML0TH	003	A02MW020001	08/23/11	09:30
ML0TJ	004	A04BMW707DD0001	08/23/11	
ML0TV	005	TRIP BLANK#6	08/23/11	
ML0T1	006	A02MW9005 DISSOLVED	08/23/11	
ML0T4	007	A02MW010001 DISSOLVED	08/23/11	08:50
ML0T8	008	A02MW020001 DISSOLVED	08/23/11	09:30

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005

GC/MS Volatiles

Lot-Sample #...: F1H240450-001 Work Order #...: ML0TA1AC Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11
Prep Date.....: 08/31/11 Analysis Date..: 08/31/11
Prep Batch #...: 1243089 Analysis Time..: 16:02
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**12**	**2.0**	**ug/L**
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	**0.21 J**	**1.0**	**ug/L**
1,4-Dichlorobenzene	**0.21 J**	**1.0**	**ug/L**
1,1-Dichloroethane	**5.7**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**1.5**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**4.5**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	**8.4**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005

GC/MS Volatiles

Lot-Sample #...: F1H240450-001 Work Order #...: ML0TA1AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	99	(85 - 120)
Dibromofluoromethane	99	(85 - 115)
1,2-Dichloroethane-d4	96	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005

TOTAL Metals

Lot-Sample #...: F1H240450-001 Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1237036						
Uranium	**40.1**	**1.0**	**ug/L**	**SW846 6020A**	**08/25-08/31/11**	**ML0TA1A5**
		Dilution Factor: 1		Analysis Time..: 05:41		
Prep Batch #...: 1237037						
Silver	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AF
		Dilution Factor: 1		Analysis Time..: 14:53		
Aluminum	**82.7 J**	**200**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TA1AG**
		Dilution Factor: 1		Analysis Time..: 14:10		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AE
		Dilution Factor: 1		Analysis Time..: 14:53		
Barium	**55.5**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TA1AH**
		Dilution Factor: 1		Analysis Time..: 14:53		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AJ
		Dilution Factor: 1		Analysis Time..: 14:53		
Calcium	**93700**	**10000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TA1AK**
		Dilution Factor: 10		Analysis Time..: 15:26		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AL
		Dilution Factor: 1		Analysis Time..: 14:53		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AM
		Dilution Factor: 1		Analysis Time..: 14:53		
Chromium	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AN
		Dilution Factor: 1		Analysis Time..: 14:53		
Copper	ND	25.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AP
		Dilution Factor: 1		Analysis Time..: 14:53		
Iron	ND	100	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AQ
		Dilution Factor: 1		Analysis Time..: 14:53		
Magnesium	**20000**	**1000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TA1AR**
		Dilution Factor: 1		Analysis Time..: 14:53		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005

TOTAL Metals

Lot-Sample #...: F1H240450-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	152	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AT
		Dilution Factor: 1		Analysis Time..: 14:53		
Sodium	20600	1000	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AU
		Dilution Factor: 1		Analysis Time..: 14:10		
Nickel	ND	40.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AV
		Dilution Factor: 1		Analysis Time..: 14:53		
Lead	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AW
		Dilution Factor: 1		Analysis Time..: 14:53		
Antimony	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AX
		Dilution Factor: 1		Analysis Time..: 14:53		
Selenium	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1A0
		Dilution Factor: 1		Analysis Time..: 14:53		
Strontium	374	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1A1
		Dilution Factor: 10		Analysis Time..: 15:26		
Thallium	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1A2
		Dilution Factor: 1		Analysis Time..: 14:53		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1A3
		Dilution Factor: 1		Analysis Time..: 14:53		
Zinc	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1A4
		Dilution Factor: 1		Analysis Time..: 14:53		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005

General Chemistry

Lot-Sample #...: F1H240450-001 Work Order #...: ML0TA Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	24.8	2.0	mg/L	MCAWW 300.0A	08/24/11	1236153
		Dilution Factor: 10		Analysis Time..: 07:27		
Fluoride	1.2	0.10	mg/L	MCAWW 300.0A	08/24/11	1236154
		Dilution Factor: 1		Analysis Time..: 06:54		
Nitrate	0.19	0.020	mg/L	MCAWW 300.0A	08/24/11	1236155
		Dilution Factor: 1		Analysis Time..: 06:54		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/24/11	1236156
		Dilution Factor: 10		Analysis Time..: 07:27		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1236157
		Dilution Factor: 1		Analysis Time..: 06:54		
Sulfate	35.6	5.0	mg/L	MCAWW 300.0A	08/24/11	1236158
		Dilution Factor: 10		Analysis Time..: 07:27		
Total Alkalinity	229	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	344	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW010001

TOTAL Metals

Lot-Sample #...: F1H240450-002 Matrix.....: WATER
Date Sampled...: 08/23/11 08:50 Date Received..: 08/24/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1237036						
Uranium	**4.0**	**1.0**	**ug/L**	**SW846 6020A**	**08/25-08/31/11**	**ML0TF1AE**
		Dilution Factor: 1		Analysis Time..: 06:08		
Prep Batch #...: 1237037						
Silver	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1AQ
		Dilution Factor: 1		Analysis Time..: 15:19		
Aluminum	**113 J**	**200**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1AR**
		Dilution Factor: 1		Analysis Time..: 14:35		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1AP
		Dilution Factor: 1		Analysis Time..: 15:19		
Barium	**64.4**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1AT**
		Dilution Factor: 1		Analysis Time..: 15:19		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1AU
		Dilution Factor: 1		Analysis Time..: 15:19		
Calcium	**216000**	**10000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1AV**
		Dilution Factor: 10		Analysis Time..: 15:51		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1AW
		Dilution Factor: 1		Analysis Time..: 15:19		
Cobalt	**5.3 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1AX**
		Dilution Factor: 1		Analysis Time..: 15:19		
Chromium	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1A0
		Dilution Factor: 1		Analysis Time..: 15:19		
Copper	ND	25.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1A1
		Dilution Factor: 1		Analysis Time..: 15:19		
Iron	**1450**	**100**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1A2**
		Dilution Factor: 1		Analysis Time..: 15:19		
Magnesium	**35800**	**1000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1A3**
		Dilution Factor: 1		Analysis Time..: 15:19		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW010001

TOTAL Metals

Lot-Sample #...: F1H240450-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**348**	**15.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1A4**
		Dilution Factor: 1		Analysis Time..: 15:19		
Sodium	**445000**	**10000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1A5**
		Dilution Factor: 10		Analysis Time..: 15:51		
Nickel	**118**	**40.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1A6**
		Dilution Factor: 1		Analysis Time..: 15:19		
Lead	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1A7
		Dilution Factor: 1		Analysis Time..: 15:19		
Antimony	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1A8
		Dilution Factor: 1		Analysis Time..: 15:19		
Selenium	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1A9
		Dilution Factor: 1		Analysis Time..: 15:19		
Strontium	**750**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1CA**
		Dilution Factor: 10		Analysis Time..: 15:51		
Thallium	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1CC
		Dilution Factor: 1		Analysis Time..: 15:19		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1CD
		Dilution Factor: 1		Analysis Time..: 15:19		
Zinc	**410**	**20.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1CE**
		Dilution Factor: 1		Analysis Time..: 15:19		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW010001

General Chemistry

Lot-Sample #...: F1H240450-002 Work Order #...: ML0TF Matrix.....: WATER
Date Sampled...: 08/23/11 08:50 Date Received..: 08/24/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	495	40.0	mg/L	MCAWW 300.0A	08/24/11	1236153
		Dilution Factor: 200		Analysis Time..: 03:21		
Fluoride	0.77	0.50	mg/L	MCAWW 300.0A	08/24/11	1236154
		Dilution Factor: 5		Analysis Time..: 02:48		
Nitrate	0.038	0.020	mg/L	MCAWW 300.0A	08/24/11	1236155
		Dilution Factor: 1		Analysis Time..: 02:32		
Nitrite	ND	4.0	mg/L	MCAWW 300.0A	08/24/11	1236156
		Dilution Factor: 200		Analysis Time..: 03:21		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1236157
		Dilution Factor: 1		Analysis Time..: 02:32		
Sulfate	192	10.0	mg/L	MCAWW 300.0A	08/24/11	1236158
		Dilution Factor: 20		Analysis Time..: 03:04		
Total Alkalinity	346	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1540	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001

GC/MS Volatiles

Lot-Sample #...: F1H240450-003 Work Order #...: ML0TH1AN Matrix.....: WATER
Date Sampled...: 08/23/11 09:30 Date Received..: 08/24/11
Prep Date.....: 08/31/11 Analysis Date..: 08/31/11
Prep Batch #...: 1243089 Analysis Time..: 16:28
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2-Butanone	ND	5.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	**0.21 J**	**1.0**	**ug/L**
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**6.1**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**1.5**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**4.8**	**2.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	**9.2**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001

GC/MS Volatiles

Lot-Sample #...: F1H240450-003 **Work Order #...:** ML0TH1AN **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001

GC/MS Volatiles

Lot-Sample #...: F1H240450-003 Work Order #...: ML0TH2AN Matrix.....: WATER
Date Sampled...: 08/23/11 09:30 Date Received..: 08/24/11
Prep Date.....: 09/01/11 Analysis Date..: 09/01/11
Prep Batch #...: 1244139 Analysis Time..: 13:17
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloroethane	24	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	124 *	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
1,2-Dichloroethane-d4	123 *	(70 - 120)
4-Bromofluorobenzene	126 *	(75 - 120)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001

TOTAL Metals

Lot-Sample #...: F1H240450-003 Matrix.....: WATER
Date Sampled...: 08/23/11 09:30 Date Received..: 08/24/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1237036						
Uranium	**41.3**	**1.0**	**ug/L**	**SW846 6020A**	**08/25-08/31/11**	**ML0TH1AG**
		Dilution Factor: 1		Analysis Time..: 06:21		
Prep Batch #...: 1237037						
Silver	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AR
		Dilution Factor: 1		Analysis Time..: 15:32		
Aluminum	**93.6 J**	**200**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TH1AT**
		Dilution Factor: 1		Analysis Time..: 14:48		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AQ
		Dilution Factor: 1		Analysis Time..: 15:32		
Barium	**56.5**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TH1AU**
		Dilution Factor: 1		Analysis Time..: 15:32		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AV
		Dilution Factor: 1		Analysis Time..: 15:32		
Calcium	**91600**	**10000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TH1AW**
		Dilution Factor: 10		Analysis Time..: 16:03		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AX
		Dilution Factor: 1		Analysis Time..: 15:32		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A0
		Dilution Factor: 1		Analysis Time..: 15:32		
Chromium	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A1
		Dilution Factor: 1		Analysis Time..: 15:32		
Copper	ND	25.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A2
		Dilution Factor: 1		Analysis Time..: 15:32		
Iron	ND	100	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A3
		Dilution Factor: 1		Analysis Time..: 15:32		
Magnesium	**20200**	**1000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TH1A4**
		Dilution Factor: 1		Analysis Time..: 15:32		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001

TOTAL Metals

Lot-Sample #...: F1H240450-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	155	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A5
		Dilution Factor: 1		Analysis Time..: 15:32		
Sodium	20800	1000	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A6
		Dilution Factor: 1		Analysis Time..: 14:48		
Nickel	ND	40.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A7
		Dilution Factor: 1		Analysis Time..: 15:32		
Lead	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A8
		Dilution Factor: 1		Analysis Time..: 15:32		
Antimony	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A9
		Dilution Factor: 1		Analysis Time..: 15:32		
Selenium	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AA
		Dilution Factor: 1		Analysis Time..: 15:32		
Strontium	356	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AC
		Dilution Factor: 10		Analysis Time..: 16:03		
Thallium	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AD
		Dilution Factor: 1		Analysis Time..: 15:32		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AE
		Dilution Factor: 1		Analysis Time..: 15:32		
Zinc	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AF
		Dilution Factor: 1		Analysis Time..: 15:32		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001

General Chemistry

Lot-Sample #...: F1H240450-003 Work Order #...: ML0TH Matrix.....: WATER
Date Sampled...: 08/23/11 09:30 Date Received..: 08/24/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	24.4	2.0	mg/L	MCAWW 300.0A	08/24/11	1236153
		Dilution Factor: 10		Analysis Time..: 04:10		
Fluoride	1.2	0.50	mg/L	MCAWW 300.0A	08/24/11	1236154
		Dilution Factor: 5		Analysis Time..: 03:54		
Nitrate	0.010 B	0.020	mg/L	MCAWW 300.0A	08/24/11	1236155
		Dilution Factor: 1		Analysis Time..: 03:37		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/24/11	1236156
		Dilution Factor: 10		Analysis Time..: 04:10		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1236157
		Dilution Factor: 1		Analysis Time..: 03:37		
Sulfate	36.6	2.5	mg/L	MCAWW 300.0A	08/24/11	1236158
		Dilution Factor: 5		Analysis Time..: 03:54		
Total Alkalinity	229	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	342	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001

TOTAL Metals

Lot-Sample #...: F1H240450-004 Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1237036						
Uranium	31.9	5.0	ug/L	SW846 6020A	08/25-08/31/11	ML0TJ1AC
		Dilution Factor: 5		Analysis Time..: 17:20		

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK#6

GC/MS Volatiles

Lot-Sample #...: F1H240450-005 Work Order #...: ML0TV1AA Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11
Prep Date.....: 08/31/11 Analysis Date..: 08/31/11
Prep Batch #...: 1243089 Analysis Time..: 15:09
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK#6

GC/MS Volatiles

Lot-Sample #...: F1H240450-005 **Work Order #...:** ML0TV1AA **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	101	(85 - 115)
1,2-Dichloroethane-d4	97	(70 - 120)
4-Bromofluorobenzene	100	(75 - 120)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H240450-006 Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1237036						
Uranium	**39.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/25-08/31/11**	**ML0T11A2**
		Dilution Factor: 1		Analysis Time..: 06:48		
Prep Batch #...: 1237037						
Silver	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AC
		Dilution Factor: 1		Analysis Time..: 15:51		
Aluminum	**93.3 J**	**200**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T11AD**
		Dilution Factor: 1		Analysis Time..: 14:54		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AA
		Dilution Factor: 1		Analysis Time..: 15:51		
Barium	**55.3**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T11AE**
		Dilution Factor: 1		Analysis Time..: 15:51		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AF
		Dilution Factor: 1		Analysis Time..: 15:51		
Calcium	**89500**	**10000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T11AG**
		Dilution Factor: 10		Analysis Time..: 16:10		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AH
		Dilution Factor: 1		Analysis Time..: 15:51		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AJ
		Dilution Factor: 1		Analysis Time..: 15:51		
Chromium	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AK
		Dilution Factor: 1		Analysis Time..: 15:51		
Copper	ND	25.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AL
		Dilution Factor: 1		Analysis Time..: 15:51		
Iron	ND	100	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AM
		Dilution Factor: 1		Analysis Time..: 15:51		
Magnesium	**20000**	**1000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T11AN**
		Dilution Factor: 1		Analysis Time..: 15:51		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H240450-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	152	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AP
		Dilution Factor: 1		Analysis Time..: 15:51		
Sodium	21000	1000	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AQ
		Dilution Factor: 1		Analysis Time..: 14:54		
Nickel	ND	40.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AR
		Dilution Factor: 1		Analysis Time..: 15:51		
Lead	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AT
		Dilution Factor: 1		Analysis Time..: 15:51		
Antimony	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AU
		Dilution Factor: 1		Analysis Time..: 15:51		
Selenium	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AV
		Dilution Factor: 1		Analysis Time..: 15:51		
Strontium	344	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AW
		Dilution Factor: 10		Analysis Time..: 16:10		
Thallium	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AX
		Dilution Factor: 1		Analysis Time..: 15:51		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11A0
		Dilution Factor: 1		Analysis Time..: 15:51		
Zinc	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11A1
		Dilution Factor: 1		Analysis Time..: 15:51		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW010001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H240450-007 Matrix.....: WATER
Date Sampled...: 08/23/11 08:50 Date Received..: 08/24/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1237036						
Uranium	3.5	1.0	ug/L	SW846 6020A	08/25-08/31/11	ML0T41AD
		Dilution Factor: 1		Analysis Time..: 06:55		
Prep Batch #...: 1237037						
Silver	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AG
		Dilution Factor: 1		Analysis Time..: 15:58		
Aluminum	194 J	200	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AH
		Dilution Factor: 1		Analysis Time..: 15:13		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AF
		Dilution Factor: 1		Analysis Time..: 15:58		
Barium	60.9	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AJ
		Dilution Factor: 1		Analysis Time..: 15:58		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AK
		Dilution Factor: 1		Analysis Time..: 15:58		
Calcium	206000	10000	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AL
		Dilution Factor: 10		Analysis Time..: 16:29		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AM
		Dilution Factor: 1		Analysis Time..: 15:58		
Cobalt	4.6 J	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AN
		Dilution Factor: 1		Analysis Time..: 15:58		
Chromium	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AP
		Dilution Factor: 1		Analysis Time..: 15:58		
Copper	ND	25.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AQ
		Dilution Factor: 1		Analysis Time..: 15:58		
Iron	126	100	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AR
		Dilution Factor: 1		Analysis Time..: 15:58		
Magnesium	35500	1000	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AT
		Dilution Factor: 1		Analysis Time..: 15:58		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW010001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H240450-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	317	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AU
		Dilution Factor: 1		Analysis Time..: 15:58		
Sodium	424000	10000	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AV
		Dilution Factor: 10		Analysis Time..: 16:29		
Nickel	107	40.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AW
		Dilution Factor: 1		Analysis Time..: 15:58		
Lead	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AX
		Dilution Factor: 1		Analysis Time..: 15:58		
Antimony	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41A0
		Dilution Factor: 1		Analysis Time..: 15:58		
Selenium	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41A1
		Dilution Factor: 1		Analysis Time..: 15:58		
Strontium	708	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41A2
		Dilution Factor: 10		Analysis Time..: 16:29		
Thallium	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41A3
		Dilution Factor: 1		Analysis Time..: 15:58		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AA
		Dilution Factor: 1		Analysis Time..: 15:58		
Zinc	348	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AC
		Dilution Factor: 1		Analysis Time..: 15:58		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H240450-008 Matrix.....: WATER
Date Sampled...: 08/23/11 09:30 Date Received..: 08/24/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1237036						
Uranium	**39.7**	**1.0**	**ug/L**	**SW846 6020A**	**08/25-08/31/11**	**ML0T81AH**
		Dilution Factor: 1		Analysis Time..: 07:01		
Prep Batch #...: 1237037						
Silver	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AL
		Dilution Factor: 1		Analysis Time..: 16:04		
Aluminum	**139 J**	**200**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T81AM**
		Dilution Factor: 1		Analysis Time..: 15:19		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AK
		Dilution Factor: 1		Analysis Time..: 16:04		
Barium	**55.1**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T81AN**
		Dilution Factor: 1		Analysis Time..: 16:04		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AP
		Dilution Factor: 1		Analysis Time..: 16:04		
Calcium	**87400**	**10000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T81AQ**
		Dilution Factor: 10		Analysis Time..: 16:35		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AR
		Dilution Factor: 1		Analysis Time..: 16:04		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AT
		Dilution Factor: 1		Analysis Time..: 16:04		
Chromium	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AU
		Dilution Factor: 1		Analysis Time..: 16:04		
Copper	ND	25.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AV
		Dilution Factor: 1		Analysis Time..: 16:04		
Iron	ND	100	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AW
		Dilution Factor: 1		Analysis Time..: 16:04		
Magnesium	**19800**	**1000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T81AX**
		Dilution Factor: 1		Analysis Time..: 16:04		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H240450-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	151	**15.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T81A0**
		Dilution Factor: 1		Analysis Time..: 16:04		
Sodium	**20900**	**1000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T81A1**
		Dilution Factor: 1		Analysis Time..: 15:19		
Nickel	ND	40.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81A2
		Dilution Factor: 1		Analysis Time..: 16:04		
Lead	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81A3
		Dilution Factor: 1		Analysis Time..: 16:04		
Antimony	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AA
		Dilution Factor: 1		Analysis Time..: 16:04		
Selenium	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AC
		Dilution Factor: 1		Analysis Time..: 16:04		
Strontium	**330**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T81AD**
		Dilution Factor: 10		Analysis Time..: 16:35		
Thallium	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AE
		Dilution Factor: 1		Analysis Time..: 16:04		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AF
		Dilution Factor: 1		Analysis Time..: 16:04		
Zinc	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AG
		Dilution Factor: 1		Analysis Time..: 16:04		

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 Work Order #...: ML58K1AA Matrix.....: WATER
MB Lot-Sample #: F1H310000-089

Prep Date.....: 08/31/11 Analysis Time..: 08:19
Analysis Date..: 08/31/11 Prep Batch #...: 1243089
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	104	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 Work Order #...: ML58K1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	98	(70 - 120)		
4-Bromofluorobenzene	97	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 Work Order #...: ML7EQ1AA Matrix.....: WATER
MB Lot-Sample #: F1I010000-139

Prep Date.....: 09/01/11 Analysis Time..: 09:51
Analysis Date..: 09/01/11 Prep Batch #...: 1244139
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Chloroethane	ND	2.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	132 *	(85 - 120)
Dibromofluoromethane	101	(85 - 115)
1,2-Dichloroethane-d4	109	(70 - 120)
4-Bromofluorobenzene	116	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

* Surrogate recovery is outside stated control limits.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H240450 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H250000-036 **Prep Batch #...:** 1237036						
Uranium	ND	1.0	ug/L	SW846 6020A	08/25-08/31/11	ML1V91AA
		Dilution Factor: 1				
		Analysis Time..: 05:28				
MB Lot-Sample #: F1H250000-037 **Prep Batch #...:** 1237037						
Aluminum	ND	200	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AD
		Dilution Factor: 1				
		Analysis Time..: 13:57				
Antimony	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AU
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AA
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Barium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AE
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AF
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AH
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Calcium	ND	1000	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AG
		Dilution Factor: 1				
		Analysis Time..: 13:57				
Chromium	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AK
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AJ
		Dilution Factor: 1				
		Analysis Time..: 14:41				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H240450 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AL
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Iron	ND	100	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AM
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Lead	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AT
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Magnesium	ND	1000	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AN
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Manganese	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AP
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Nickel	ND	40.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AR
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Selenium	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AV
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Silver	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AC
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Sodium	ND	1000	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AQ
		Dilution Factor: 1				
		Analysis Time..: 13:57				
Strontium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AW
		Dilution Factor: 1				
		Analysis Time..: 13:57				
Thallium	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AX
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1A0
		Dilution Factor: 1				
		Analysis Time..: 14:41				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H240450 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1A1
		Dilution Factor: 1				
		Analysis Time..: 14:41				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H240450 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: ML2331AA		MB Lot-Sample #:	F1H240000-153	
	ND	0.20	mg/L	MCAWW 300.0A	08/24/11	1236153
		Dilution Factor: 1				
		Analysis Time..: 02:15				
Fluoride		Work Order #: ML2361AA		MB Lot-Sample #:	F1H240000-154	
	ND	0.10	mg/L	MCAWW 300.0A	08/24/11	1236154
		Dilution Factor: 1				
		Analysis Time..: 02:15				
Nitrate		Work Order #: ML2371AA		MB Lot-Sample #:	F1H240000-155	
	ND	0.020	mg/L	MCAWW 300.0A	08/24/11	1236155
		Dilution Factor: 1				
		Analysis Time..: 02:15				
Nitrite		Work Order #: ML2381AA		MB Lot-Sample #:	F1H240000-156	
	ND	0.020	mg/L	MCAWW 300.0A	08/24/11	1236156
		Dilution Factor: 1				
		Analysis Time..: 02:15				
Phosphate as P, Ortho		Work Order #: ML24H1AA		MB Lot-Sample #:	F1H240000-157	
	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1236157
		Dilution Factor: 1				
		Analysis Time..: 02:15				
Sulfate		Work Order #: ML24L1AA		MB Lot-Sample #:	F1H240000-158	
	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1236158
		Dilution Factor: 1				
		Analysis Time..: 02:15				
Total Alkalinity		Work Order #: ML51P1AA		MB Lot-Sample #:	F1H300000-085	
	ND	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: ML4AF1AA		MB Lot-Sample #:	F1H260000-124	
	ND	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 Work Order #...: ML58K1AC Matrix.....: WATER
LCS Lot-Sample#: F1H310000-089
Prep Date.....: 08/31/11 Analysis Date..: 08/31/11
Prep Batch #...: 1243089 Analysis Time..: 07:26
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
cis-1,3-Dichloropropene	108	(70 - 130)	SW846 8260B
Dibromochloromethane	101	(60 - 135)	SW846 8260B
Vinyl chloride	110	(50 - 145)	SW846 8260B
Bromomethane	165 a	(30 - 145)	SW846 8260B
Chloroethane	117	(60 - 135)	SW846 8260B
Acetone	86	(40 - 140)	SW846 8260B
1,1-Dichloroethene	96	(70 - 130)	SW846 8260B
Methylene chloride	87	(55 - 140)	SW846 8260B
Carbon disulfide	93	(35 - 160)	SW846 8260B
1,1-Dichloroethane	101	(70 - 135)	SW846 8260B
2-Butanone	95	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	97	(85 - 115)	SW846 8260B
Chloroform	98	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	102	(65 - 130)	SW846 8260B
Carbon tetrachloride	99	(65 - 140)	SW846 8260B
1,2-Dichloroethane	100	(70 - 130)	SW846 8260B
Benzene	102	(80 - 120)	SW846 8260B
Trichloroethene	99	(70 - 125)	SW846 8260B
1,2-Dichloropropane	102	(75 - 125)	SW846 8260B
Bromodichloromethane	102	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	102	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	106	(55 - 140)	SW846 8260B
Toluene	106	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	101	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	98	(75 - 125)	SW846 8260B
2-Hexanone	87	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	98	(60 - 135)	SW846 8260B
Chlorobenzene	101	(80 - 120)	SW846 8260B
Bromoform	99	(70 - 130)	SW846 8260B
Ethylbenzene	108	(75 - 125)	SW846 8260B
Styrene	112	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	94	(65 - 130)	SW846 8260B
Tetrachloroethene	98	(45 - 150)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 **Work Order #...:** ML58K1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H310000-089

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichlorobenzene	**101**	**(70 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
Dibromofluoromethane	102	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
4-Bromofluorobenzene	95	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 **Work Order #...:** ML7EQ1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: F1I010000-139 ML7EQ1AD-LCSD
Prep Date.....: 09/01/11 **Analysis Date..:** 09/01/11
Prep Batch #...: 1244139 **Analysis Time..:** 08:53
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Chloroethane	**98**	**(60 - 135)**			**SW846 8260B**
	116	**(60 - 135)**	**17**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
	110	(85 - 120)
Dibromofluoromethane	99	(85 - 115)
	94	(85 - 115)
1,2-Dichloroethane-d4	96	(70 - 120)
	108	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)
	116	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H240450 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H250000-036 **Prep Batch #...:** 1237036					
Uranium	106	(80 - 120)	SW846 6020A	08/25-08/31/11	ML1V91AC
		Dilution Factor: 1		Analysis Time..: 05:35	
LCS Lot-Sample#: F1H250000-037 **Prep Batch #...:** 1237037					
Arsenic	106	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A2
		Dilution Factor: 1		Analysis Time..: 14:47	
Silver	90	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A3
		Dilution Factor: 1		Analysis Time..: 14:47	
Aluminum	108	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A4
		Dilution Factor: 1		Analysis Time..: 14:04	
Barium	107	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A5
		Dilution Factor: 1		Analysis Time..: 14:47	
Beryllium	115	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A6
		Dilution Factor: 1		Analysis Time..: 14:47	
Calcium	106	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A7
		Dilution Factor: 1		Analysis Time..: 14:04	
Cadmium	109	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A8
		Dilution Factor: 1		Analysis Time..: 14:47	
Cobalt	105	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A9
		Dilution Factor: 1		Analysis Time..: 14:47	
Chromium	105	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CA
		Dilution Factor: 1		Analysis Time..: 14:47	
Copper	103	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CC
		Dilution Factor: 1		Analysis Time..: 14:47	
Iron	109	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CD
		Dilution Factor: 1		Analysis Time..: 14:47	
Magnesium	107	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CE
		Dilution Factor: 1		Analysis Time..: 14:47	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H240450 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	108	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CF
		Dilution Factor: 1	Analysis Time..: 14:47		
Sodium	106	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CG
		Dilution Factor: 1	Analysis Time..: 14:04		
Nickel	105	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CH
		Dilution Factor: 1	Analysis Time..: 14:47		
Lead	105	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CJ
		Dilution Factor: 1	Analysis Time..: 14:47		
Antimony	107	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CK
		Dilution Factor: 1	Analysis Time..: 14:47		
Selenium	106	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CL
		Dilution Factor: 1	Analysis Time..: 14:47		
Strontium	102	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CM
		Dilution Factor: 1	Analysis Time..: 14:04		
Thallium	103	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CN
		Dilution Factor: 1	Analysis Time..: 14:47		
Vanadium	105	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CP
		Dilution Factor: 1	Analysis Time..: 14:47		
Zinc	113	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CQ
		Dilution Factor: 1	Analysis Time..: 14:47		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H240450 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: ML2331AC LCS Lot-Sample#: F1H240000-153			
	94	(90 - 110)	MCAWW 300.0A	08/24/11	1236153
		Dilution Factor: 1	Analysis Time..: 01:59		
Fluoride		Work Order #: ML2361AC LCS Lot-Sample#: F1H240000-154			
	96	(90 - 110)	MCAWW 300.0A	08/24/11	1236154
		Dilution Factor: 1	Analysis Time..: 01:59		
Nitrate		Work Order #: ML2371AC LCS Lot-Sample#: F1H240000-155			
	97	(90 - 110)	MCAWW 300.0A	08/24/11	1236155
		Dilution Factor: 1	Analysis Time..: 01:59		
Nitrite		Work Order #: ML2381AC LCS Lot-Sample#: F1H240000-156			
	101	(90 - 110)	MCAWW 300.0A	08/24/11	1236156
		Dilution Factor: 1	Analysis Time..: 01:59		
Phosphate as P, Ortho		Work Order #: ML24H1AC LCS Lot-Sample#: F1H240000-157			
	95	(90 - 110)	MCAWW 300.0A	08/24/11	1236157
		Dilution Factor: 1	Analysis Time..: 01:59		
Sulfate		Work Order #: ML24L1AC LCS Lot-Sample#: F1H240000-158			
	97	(90 - 110)	MCAWW 300.0A	08/24/11	1236158
		Dilution Factor: 1	Analysis Time..: 01:59		
Total Alkalinity		Work Order #: ML51P1AC LCS Lot-Sample#: F1H300000-085			
	94	(90 - 110)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: ML51P1AD LCS Lot-Sample#: F1H300000-085			
	94	(90 - 110)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: ML4AF1AC LCS Lot-Sample#: F1H260000-124			
	96	(90 - 113)	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 Work Order #...: ML0TA1D0-MS Matrix.....: WATER
MS Lot-Sample #: F1H240450-001 ML0TA1D1-MSD
Date Sampled...: 08/23/11 Date Received..: 08/24/11
Prep Date.....: 08/31/11 Analysis Date..: 08/31/11
Prep Batch #...: 1243089 Analysis Time..: 13:23
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Vinyl chloride	110	(50 - 145)			SW846 8260B
	107	(50 - 145)	1.9	(0-20)	SW846 8260B
Bromomethane	118	(30 - 145)			SW846 8260B
	106	(30 - 145)	10	(0-20)	SW846 8260B
Chloroethane	116	(60 - 135)			SW846 8260B
	120	(60 - 135)	1.4	(0-20)	SW846 8260B
Bromoform	102	(70 - 130)			SW846 8260B
	106	(70 - 130)	4.1	(0-20)	SW846 8260B
Ethylbenzene	106	(75 - 125)			SW846 8260B
	108	(75 - 125)	2.3	(0-20)	SW846 8260B
Styrene	109	(65 - 135)			SW846 8260B
	114	(65 - 135)	4.9	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	103	(65 - 130)			SW846 8260B
	104	(65 - 130)	1.5	(0-20)	SW846 8260B
Tetrachloroethene	99	(45 - 150)			SW846 8260B
	101	(45 - 150)	1.5	(0-20)	SW846 8260B
1,2-Dichlorobenzene	102	(70 - 120)			SW846 8260B
	104	(70 - 120)	2.0	(0-20)	SW846 8260B
Acetone	88	(40 - 140)			SW846 8260B
	88	(40 - 140)	0.79	(0-20)	SW846 8260B
1,1-Dichloroethene	108	(70 - 130)			SW846 8260B
	99	(70 - 130)	7.9	(0-20)	SW846 8260B
Methylene chloride	91	(55 - 140)			SW846 8260B
	92	(55 - 140)	0.57	(0-20)	SW846 8260B
Carbon disulfide	103	(35 - 160)			SW846 8260B
	102	(35 - 160)	0.39	(0-20)	SW846 8260B
1,1-Dichloroethane	101	(70 - 135)			SW846 8260B
	106	(70 - 135)	2.6	(0-20)	SW846 8260B
2-Butanone	93	(30 - 150)			SW846 8260B
	96	(30 - 150)	4.0	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	101	(85 - 115)			SW846 8260B
	104	(85 - 115)	2.2	(0-20)	SW846 8260B
Chloroform	101	(65 - 135)			SW846 8260B
	101	(65 - 135)	0.19	(0-20)	SW846 8260B
1,1,1-Trichloroethane	102	(65 - 130)			SW846 8260B
	103	(65 - 130)	0.78	(0-20)	SW846 8260B
Carbon tetrachloride	96	(65 - 140)			SW846 8260B
	98	(65 - 140)	1.5	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 Work Order #...: ML0TA1D0-MS Matrix.....: WATER
MS Lot-Sample #: F1H240450-001 ML0TA1D1-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,2-Dichloroethane	101	(70 - 130)			SW846 8260B
	100	(70 - 130)	0.09	(0-20)	SW846 8260B
Benzene	103	(80 - 120)			SW846 8260B
	105	(80 - 120)	2.3	(0-20)	SW846 8260B
Trichloroethene	99	(70 - 125)			SW846 8260B
	101	(70 - 125)	1.6	(0-20)	SW846 8260B
1,2-Dichloropropane	102	(75 - 125)			SW846 8260B
	103	(75 - 125)	0.87	(0-20)	SW846 8260B
Bromodichloromethane	101	(75 - 120)			SW846 8260B
	103	(75 - 120)	1.8	(0-20)	SW846 8260B
1,1,2-Trichloroethane	102	(75 - 125)			SW846 8260B
	103	(75 - 125)	0.88	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	100	(55 - 140)			SW846 8260B
	105	(55 - 140)	5.4	(0-20)	SW846 8260B
Toluene	105	(75 - 120)			SW846 8260B
	108	(75 - 120)	2.6	(0-20)	SW846 8260B
1,3-Dichlorobenzene	103	(75 - 125)			SW846 8260B
	104	(75 - 125)	0.37	(0-20)	SW846 8260B
1,4-Dichlorobenzene	97	(75 - 125)			SW846 8260B
	100	(75 - 125)	2.8	(0-20)	SW846 8260B
2-Hexanone	86	(55 - 130)			SW846 8260B
	96	(55 - 130)	11	(0-20)	SW846 8260B
4-Methyl-2-pentanone	98	(60 - 135)			SW846 8260B
	104	(60 - 135)	5.7	(0-20)	SW846 8260B
Chlorobenzene	102	(80 - 120)			SW846 8260B
	104	(80 - 120)	1.6	(0-20)	SW846 8260B
cis-1,3-Dichloropropene	94	(70 - 130)			SW846 8260B
	100	(70 - 130)	6.4	(0-20)	SW846 8260B
Dibromochloromethane	95	(60 - 135)			SW846 8260B
	99	(60 - 135)	4.0	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	100	(85 - 120)
	105	(85 - 120)
Dibromofluoromethane	99	(85 - 115)
	102	(85 - 115)
1,2-Dichloroethane-d4	96	(70 - 120)
	97	(70 - 120)
4-Bromofluorobenzene	94	(75 - 120)
	99	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H240450 Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H240450-001 **Prep Batch #...:** 1237036							
Uranium	109	(80 - 120)			SW846 6020A	08/25-08/31/11	ML0TA1CF
	107	(80 - 120)	2.0	(0-20)	SW846 6020A	08/25-08/31/11	ML0TA1CG
		Dilution Factor: 1					
		Analysis Time..: 05:55					
MS Lot-Sample #: F1H240450-001 **Prep Batch #...:** 1237037							
Aluminum	108	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1CM
	108	(80 - 120)	0.01	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1CN
		Dilution Factor: 1					
		Analysis Time..: 14:23					
Antimony	106	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DK
	107	(80 - 120)	1.0	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DL
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Arsenic	106	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1CH
	107	(80 - 120)	0.62	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1CJ
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Barium	105	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1CP
	105	(80 - 120)	0.40	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1CQ
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Beryllium	114	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1CR
	114	(80 - 120)	0.47	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1CT
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Cadmium	106	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1CW
	106	(80 - 120)	0.72	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1CX
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Calcium	27 N	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1CU
	38 N	(80 - 120)	1.2	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1CV
		Dilution Factor: 10					
		Analysis Time..: 15:38					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H240450 **Matrix.....:** WATER
Date Sampled...: 08/23/11 **Date Received..:** 08/24/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	103	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1C2
	103	(80 - 120)	0.61	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1C3
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Cobalt	102	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1C0
	102	(80 - 120)	0.60	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1C1
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Copper	101	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1C4
	101	(80 - 120)	0.38	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1C5
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Iron	107	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1C6
	107	(80 - 120)	0.57	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1C7
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Lead	102	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DH
	102	(80 - 120)	0.35	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DJ
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Magnesium	103	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1C8
	105	(80 - 120)	0.57	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1C9
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Manganese	105	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DA
	106	(80 - 120)	0.59	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DC
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Nickel	101	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DF
	102	(80 - 120)	0.68	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DG
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Selenium	81	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DM
	81	(80 - 120)	0.17	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DN
		Dilution Factor: 1					
		Analysis Time..: 15:06					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H240450 Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	90	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1CK
	90	(80 - 120)	0.52	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1CL
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Sodium	104	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DD
	104	(80 - 120)	0.12	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DE
		Dilution Factor: 1					
		Analysis Time..: 14:23					
Strontium	111	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DP
	113	(80 - 120)	1.1	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DQ
		Dilution Factor: 10					
		Analysis Time..: 15:38					
Thallium	100	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DR
	101	(80 - 120)	0.98	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DT
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Vanadium	103	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DU
	104	(80 - 120)	0.51	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DV
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Zinc	111	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DW
	111	(80 - 120)	0.56	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DX
		Dilution Factor: 1					
		Analysis Time..: 15:06					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H240450 **Matrix.....:** WATER
Date Sampled...: 08/23/11 09:30 **Date Received..:** 08/24/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: ML0TH1CF		MS Lot-Sample #: F1H240450-003	
	105	(90 - 110)	MCAWW 300.0A	08/24/11	1236153
		Dilution Factor: 10	Analysis Time..: 04:10		
Fluoride		Work Order #...: ML0TH1CH		MS Lot-Sample #: F1H240450-003	
	108	(90 - 110)	MCAWW 300.0A	08/24/11	1236154
		Dilution Factor: 5	Analysis Time..: 03:54		
Nitrate		Work Order #...: ML0TH1CK		MS Lot-Sample #: F1H240450-003	
	113 N	(90 - 110)	MCAWW 300.0A	08/24/11	1236155
		Dilution Factor: 1	Analysis Time..: 03:37		
Nitrite		Work Order #...: ML0TH1CM		MS Lot-Sample #: F1H240450-003	
	72 N	(90 - 110)	MCAWW 300.0A	08/24/11	1236156
		Dilution Factor: 10	Analysis Time..: 04:10		
Phosphate as P, Ortho		Work Order #...: ML0TH1CP		MS Lot-Sample #: F1H240450-003	
	75 N	(90 - 110)	MCAWW 300.0A	08/24/11	1236157
		Dilution Factor: 1	Analysis Time..: 03:37		
Sulfate		Work Order #...: ML0TH1CR		MS Lot-Sample #: F1H240450-003	
	101	(90 - 110)	MCAWW 300.0A	08/24/11	1236158
		Dilution Factor: 5	Analysis Time..: 03:54		
Total Alkalinity		Work Order #...: MLW9L1EM		MS Lot-Sample #: F1H230407-007	
	98	(80 - 120)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H240450 **Work Order #...:** ML0TH-SMP ML0TH-DUP **Matrix.....:** WATER

Date Sampled...: 08/23/11 09:30 **Date Received..:** 08/24/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H240450-003		
	24.4	22.7	mg/L	7.2	(0-20)	MCAWW 300.0A	08/24/11	1236153
		Dilution Factor: 10				Analysis Time..: 04:10		
Fluoride						SD Lot-Sample #: F1H240450-003		
	1.2	1.3	mg/L	6.3	(0-20)	MCAWW 300.0A	08/24/11	1236154
		Dilution Factor: 5				Analysis Time..: 03:54		
Nitrate						SD Lot-Sample #: F1H240450-003		
	0.010 B	0.016 B	mg/L	43	(0-20)	MCAWW 300.0A	08/24/11	1236155
		Dilution Factor: 1				Analysis Time..: 03:37		
Nitrite						SD Lot-Sample #: F1H240450-003		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/24/11	1236156
		Dilution Factor: 10				Analysis Time..: 04:10		
Phosphate as P, Ortho						SD Lot-Sample #: F1H240450-003		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/24/11	1236157
		Dilution Factor: 1				Analysis Time..: 03:37		
Sulfate						SD Lot-Sample #: F1H240450-003		
	36.6	36.7	mg/L	0.082	(0-20)	MCAWW 300.0A	08/24/11	1236158
		Dilution Factor: 5				Analysis Time..: 03:54		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H240450 **Work Order #...:** MLW9L-SMP MLW9L-DUP **Matrix.....:** WATER

Date Sampled...: 08/22/11 11:00 **Date Received..:** 08/23/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H230407-007		
	400	400	mg/L	0.0	(0-15)	MCAWW 160.1	08/26-08/29/11	1238124
			Dilution Factor: 1			Analysis Time..: 00:00		
Total Alkalinity						SD Lot-Sample #: F1H230407-007		
	254	254	mg/L	0.16	(0-20)	MCAWW 310.1	08/30/11	1242085
			Dilution Factor: 1			Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005

Radiochemistry

Lab Sample ID: F1H240450-001
Work Order: ML0TA
Matrix: WATER

Date Collected: 08/23/11 0000
Date Received: 08/24/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1238069	Yld % 67
Uranium 234	10.9		1.1	0.1	0.08	08/26/11	08/31/11
Uranium 235/236	0.58		0.18	0.10	0.07	08/26/11	08/31/11
Uranium 238	12.0		1.2	0.1	0.06	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW010001

Radiochemistry

Lab Sample ID: F1H240450-002
Work Order: ML0TF
Matrix: WATER

Date Collected: 08/23/11 0850
Date Received: 08/24/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238069		Yld % 43
Uranium 234	1.86		0.38	0.10	0.1	08/26/11	08/31/11
Uranium 235/236	0.020	U	0.041	0.100	0.055	08/26/11	08/31/11
Uranium 238	1.22		0.30	0.10	0.13	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001

Radiochemistry

Lab Sample ID: F1H240450-003
Work Order: ML0TH
Matrix: WATER

Date Collected: 08/23/11 0930
Date Received: 08/24/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1238069	Yld % 63
Uranium 234	12.0		1.2	0.1	0.09	08/26/11	08/31/11
Uranium 235/236	0.62		0.19	0.10	0.08	08/26/11	08/31/11
Uranium 238	12.9		1.3	0.1	0.06	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005 DISSOLVED

Radiochemistry

Lab Sample ID: F1H240450-006
Work Order: ML0T1
Matrix: WATER

Date Collected: 08/23/11 0000
Date Received: 08/24/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238069		Yld % 66
Uranium 234	10.3		1.1	0.1	0.06	08/26/11	08/31/11
Uranium 235/236	0.49		0.16	0.10	0.06	08/26/11	08/31/11
Uranium 238	10.8		1.1	0.1	0.03	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW010001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H240450-007
Work Order: ML0T4
Matrix: WATER

Date Collected: 08/23/11 0850
Date Received: 08/24/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238069		Yld % 50
Uranium 234	1.32		0.29	0.10	0.1	08/26/11	08/31/11
Uranium 235/236	-0.008	U	0.012	0.100	0.087	08/26/11	08/31/11
Uranium 238	1.24		0.28	0.10	0.09	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H240450-008
Work Order: ML0T8
Matrix: WATER

Date Collected: 08/23/11 0930
Date Received: 08/24/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1238069	Yld % 77
Uranium 234	9.68		0.99	0.10	0.05	08/26/11	08/31/11
Uranium 235/236	0.36		0.13	0.10	0.05	08/26/11	08/31/11
Uranium 238	10.4		1.1	0.1	0.04	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H240450
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1238069		Yld % 100	F1H260000-069B
Uranium 234	0.021	U	0.029	0.100	0.045	08/26/11	08/31/11
Uranium 235/236	0.004	U	0.019	0.100	0.047	08/26/11	08/31/11
Uranium 238	0.004	U	0.015	0.100	0.038	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H240450
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/L		A-01-R MOD			F1H260000-069C
Uranium 234	3.26	3.06	0.40	0.05	92	94	(76 - 136)
Uranium 238	3.39	3.36	0.42	0.04	92	99	(76 - 134)
	Batch #:	1238069		Analysis Date:	08/31/11		

NOTE(S)
MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

MATRIX SPIKE/MATRIX SPIKE DUPLICATE REPORT

Radiochemistry

Client Lot ID: F1H230464
Matrix: WATER

Date Sampled: 08/19/11 0915
Date Received: 08/23/11 0905

Parameter		Spike Amount	SPIKE Result	Total Uncert. (2 σ+/-)	Spike Yld	SAMPLE Result		Total Uncert. (2σ +/-)	QC Sample ID % Yld	%Rec	QC Control Limits
Iso URANIUM (LONG CT) DOE A				pCi/L		A-01-R MOD			F1H230464-010		
Uranium 234		3.26	2.71	0.40	69	0.023	U	0.037	65	82	(65 - 146)
	Spk2	3.26	3.11	0.45	65	0.023	U	0.037	65	95	(65 - 146)
									Precision:	14	%RPD
Uranium 238		3.39	2.84	0.41	69	0.028	U	0.036	65	83	(68 - 143)
	Spk2	3.39	3.18	0.46	65	0.028	U	0.036	65	93	(68 - 143)
									Precision:	11	%RPD

Batch #: 1238069 Analysis date: 08/31/11

NOTE(S)

Data are incomplete without the case narrative.

Calculations are performed before rounding to avoid round-off error in calculated results

U Result is less than the sample detection limit.

F1H240450 CLIENT ANALYSIS SUMMARY

Storage Loc: R21,2-106,METS,

Project Manager: LMF Quote #: 89251 SDG:

Project: 140415 Gutorl Steel

PO#: 697888 Report to: Karl VanKeuren

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 8

Date Received: 2011-08-24

Analytical Due Date: 2011-09-01

Report Due Date: 2011-09-06

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
1	A02MW9005			2011-08-23 / 0	ML0TA	WATER

SAMPLE COMMENTS:

FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of0	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H240450 CLIENT ANALYSIS SUMMARY

Storage Loc: R21,2-106,METS,

Project Manager: LMF Quote #: 89261 SDG:

Date Received: 2011-08-24

Project: 140415 Guterl Steel

Analytical Due Date: 2011-09-01

PO#: 697886 Report to: Karl VanKeuren

Report Due Date: 2011-09-06

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: B Standard Report

#SMPS in LOT: 8 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

D	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H240450 CLIENT ANALYSIS SUMMARY

Storage Loc: R21,2-106,METS,

Project Manager: LMF Quote #: 89251 SDG:

Date Received: 2011-08-24

Project: 140415 Gutsrl Steel

Analytical Due Date: 2011-09-01

PO#: 697886 Report to: Karl VanKeuren

Report Due Date: 2011-09-06

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: B Standard Report

#SMPS In LOT: 8 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

S	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A02MW010001			2011-08-23 / 850	ML0TF	WATER

SAMPLE COMMENTS:

PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

F1H240450 CLIENT ANALYSIS SUMMARY

Storage Loc: R21,2-106,METS,

Project Manager: LMF Quote #: 89251 SDG:

Project: 140415 Guterl Steel

PO#: 697886 Report to: Karl VanKouren

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 8

Date Received: 2011-08-24

Analytical Due Date: 2011-09-01

Report Due Date: 2011-09-06

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium listend of 200.8

XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A02MW020001			2011-08-23 / 930	ML0TH	WATER

SAMPLE COMMENTS:

SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

F1H240450 CLIENT ANALYSIS SUMMARY

Storage Loc: R21,2-106,METS,

Project Manager: LMF Quote #: 89251 SDG:

Project: 140415 Gutert Steel

PO#: 697886 Report to: Karl VanKeuren

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 8

Date Received: 2011-08-24

Analytical Due Date: 2011-09-01

Report Due Date: 2011-09-06

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium listed of 200.8

XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
4	A04BMW707DD0001			2011-08-23 / 0	ML0TJ	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
5	TRIP BLANK#6			2011-08-23 / 0	ML0TV	WATER

SAMPLE COMMENTS:

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
6	A02MW9005 DISSOLVED			2011-08-23 / 0	ML0T1	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H240450 CLIENT ANALYSIS SUMMARY

Storage Loc: R21,METS

Project Manager: LMF Quote #: 89251 SDG:

Project: 140415 Gutori Steel

PO#: 697886 Report to: Karl VanKeuren

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 8

Date Received: 2011-08-24

Analytical Due Date: 2011-09-01

Report Due Date: 2011-09-06

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE # 7 | CLIENT SAMPLE ID: A02MW010001 DISSOLVED | Site ID | Client Matrix | DATE/TIME SAMPLED: 2011-08-23 / 850 | WORKORDER: ML0T4 | WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE # 8 | CLIENT SAMPLE ID: A02MW020001 DISSOLVED | Site ID | Client Matrix | DATE/TIME SAMPLED: 2011-08-23 / 930 | WORKORDER: ML0T8 | WATER

SAMPLE COMMENTS:

F1H240450 CLIENT ANALYSIS SUMMARY

Storage Loc: R21,METS

Project Manager: LMF Quote #: 89251 SDG:

Date Received: 2011-08-24

Project: 140415 Guterl Steel

Analytical Due Date: 2011-09-01

PO#: 697886 Report to: Karl VanKeuren

Report Due Date: 2011-09-06

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: B Standard Report

#SMPS In LOT: 8 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium latend of 200.8

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone 314.298.8566 fax 314.298.8757

CUR 205

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/23/2011	COC No: 014
Shaw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
5050 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
Cincinnati, Ohio 45212	Calendar (C) or Work Days (W)			
(513) 782-4700 Phone	TAT if different from Below ____			SDG No.
(513) 782-4807 FAX	☐ 2 weeks			
Project Name: Former Guteri Specialty Steel Corporation FUSRA	☐ 1 week			
Site: Lockport, NY	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec) [1]	Total Uranium [2]	TAL Metals except Mercury [3]	Anions [3]	Alkalinity [4]	Total Dissolved Solids [5]	Volatile Organic Compounds (VOCs) [6]	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
A02MW9005	8/23/2011	--	Grab	GW	10	X		X*	X*	X*	X*	X*	X*	X*					1x500P HNO3 2x250P 3xVIAL
A02MW010001	8/23/2011	0850	Grab	GW	7	X		X	X	X	X	X	X						1x500P HNO3 2x250P
A02MW020001	8/23/2011	0930	Grab	GW	10	X		X	X	X	X	X	X	X					1x500P HNO3 2x250P 3xVIAL
A04BMW707DD0001	8/23/2011	--	Grab	GW	1				X										1xLP
Trip Blank #6	8/23/2011	--	TB	--	1									X					1xVIAL HCl

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☒ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Shaw E & I, Inc.	8/23/11 1665		BFLO	08-23-11 16:15
	BFLO	0823-11 16:45		BFLO	823-11 16:25
	BFLO	8-23-11 21:55		TA STL	8/24/11 0920

TestAmerica St. Louis

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica St. Louis

Lot #(s): F1H240450

CUR Form #: 2 0 5

CONDITION UPON RECEIPT FORM

Client: SHAW

Quote No: 89251

COC/RFA No: 014

Initiated By: NVD Date: 8/24/11 Time: 0920

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*						Sample Temperature (s):**					
1.	4485	0258	4958	6.		1.	3		6.		
2.	↓	↓	4969	7.		2.	ABSENT		7.		
3.				8.		3.			8.		
4.				9.		4.			9.		
5.				10.		5.			10.		

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y (N) N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

SAMPLE ID 404BMW'707DD0001 WAS REC'D WITH IMPROPER PH WHICH WAS CORRECTED BY ADDING NITRIC LOT #K11059 WHICH WAS OK'D BY P.M (LF)

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/24/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004 rev13, REVISED 05/27/11 \\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin-0004 CUR.doc

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guterl Steel

Lot #: F1I010435

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

September 20, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1I010435

This report contains the analytical results for the five samples received under chain of custody by TestAmerica in St. Louis on September 1, 2011. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1255150
The CCV %Ds for Ethyl acetate and Nonanal are outside the established QC limits. These analytes are not part of the analysis request and thus this excursion does not affect the data.

The LCS recovery for Bromoform is outside the upper QC limit, indicating a potential positive bias for these analytes. These analytes were not observed above the reporting limit or are not targets for the associated samples; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1I010435 (1): AQUEOUS IDW
F1I010435 (5): TRIP BLANK #7

Volatile Organics by GC/MS (SW-846 8260)-TCLP

Batch: 1251207
The CCV recovery was outside the upper QC limit (greater than 20% D) for Vinyl chloride indicating a potential high bias for this analyte in the samples associated with this CCV. This analyte was not detected above the reporting limit in the associated samples.

Affected Samples:
F1I010435 (2): NON-AQUEOUS IDW

Mercury in Solid Waste (Manual Cold-Vapor) (SW846 7471)-TCLP

Batch: 1256029
The MS (MSD) recovery for mercury is outside the established QC limits. The RPD is within method acceptance criteria indicating matrix interference. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:
F1I010435 (2): NON-AQUEOUS IDW

ICP-MS (SW846-6020)

Batch: 1249123
The sample was analyzed at a dilution due to the presence of matrix interferences. The digestates were cloudy. The reporting limit has been adjusted for the dilution.

Affected Samples:
F1I010435 (3): A04BMW707DD0001
F1I010435 (4): A04BMW707DD0001 DISSOLVED

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1249124
The MSD recovery for sodium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

The serial dilution for calcium, sodium and strontium are outside the established QC limits, indicating matrix interference.

Affected Samples:
F1I010435 (1): AQUEOUS IDW
F1I010435 (3): A04BMW707DD0001
F1I010435 (4): A04BMW707DD0001 DISSOLVED

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)-TCLP

Batch: 1249119
The CCV recovery was outside the upper QC limit (greater than 110%) for silver indicating a potential high bias for those analytes in the samples associated with this CCV. These analytes were not detected above the reporting limit in the associated samples or were not target analytes for the associated samples.

Affected Samples:
F1I010435 (2): NON-AQUEOUS IDW

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1I010435

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 1311/3010
Isotopic Thorium by Alpha Spectroscopy	EML A-01-R MOD	
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A	SW846 7470A
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A	SW846 7471A
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD
Semivolatile Organic Compounds by GC/MS	SW846 8270C	SW846 1311/3510
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 1311/5030
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1I010435

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
ML648	001	AQUEOUS IDW	08/31/11	09:30
ML649	002	NON-AQUEOUS IDW	08/31/11	10:20
ML65D	003	A04BMW707DD0001	08/31/11	11:50
ML65F	004	A04BMW707DD0001 DISSOLVED	08/31/11	11:50
ML65G	005	TRIP BLANK #7	08/31/11	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: AQUEOUS IDW

GC/MS Volatiles

Lot-Sample #...: F1I010435-001 Work Order #...: ML6481AC Matrix.....: WATER
Date Sampled...: 08/31/11 09:30 Date Received..: 09/01/11
Prep Date.....: 09/11/11 Analysis Date..: 09/11/11
Prep Batch #...: 1255150 Analysis Time..: 19:11
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
trans-1,3-Dichloro-propylene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Acetone	**5.2 B**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**0.10 J**	**2.0**	**ug/L**
Chloroform	**0.20 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**2.8**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**0.11 J**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**1.5 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**0.26 J**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: AQUEOUS IDW

GC/MS Volatiles

Lot-Sample #...: F1I010435-001 Work Order #...: ML6481AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	99	(85 - 120)
Dibromofluoromethane	98	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	100	(75 - 120)

NOTE(S):

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: AQUEOUS IDW

TOTAL Metals

Lot-Sample #...: F1I010435-001 Matrix.....: WATER
Date Sampled...: 08/31/11 09:30 Date Received..: 09/01/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1249123						
Uranium	0.28 J	1	ug/L	SW846 6020A	09/06-09/13/11	ML6481A5
		Dilution Factor: 1		Analysis Time..: 23:40		
Prep Batch #...: 1249124						
Silver	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML6481AF
		Dilution Factor: 1		Analysis Time..: 19:55		
Aluminum	437	200	ug/L	SW846 6010C	09/12-09/13/11	ML6481AG
		Dilution Factor: 1		Analysis Time..: 19:55		
Arsenic	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML6481AE
		Dilution Factor: 1		Analysis Time..: 19:55		
Barium	168	50	ug/L	SW846 6010C	09/12-09/13/11	ML6481AH
		Dilution Factor: 1		Analysis Time..: 19:55		
Beryllium	ND	5	ug/L	SW846 6010C	09/12-09/14/11	ML6481AJ
		Dilution Factor: 1		Analysis Time..: 09:26		
Calcium	154000 E	10000	ug/L	SW846 6010C	09/12-09/13/11	ML6481AK
		Dilution Factor: 10		Analysis Time..: 19:55		
Cadmium	ND	5	ug/L	SW846 6010C	09/12-09/13/11	ML6481AL
		Dilution Factor: 1		Analysis Time..: 19:55		
Cobalt	ND	50	ug/L	SW846 6010C	09/12-09/13/11	ML6481AM
		Dilution Factor: 1		Analysis Time..: 19:55		
Chromium	ND	10	ug/L	SW846 6010C	09/12-09/14/11	ML6481AN
		Dilution Factor: 1		Analysis Time..: 09:26		
Copper	ND	25	ug/L	SW846 6010C	09/12-09/13/11	ML6481AP
		Dilution Factor: 1		Analysis Time..: 19:55		
Iron	4040	100	ug/L	SW846 6010C	09/12-09/13/11	ML6481AQ
		Dilution Factor: 1		Analysis Time..: 19:55		
Magnesium	53600	10000	ug/L	SW846 6010C	09/12-09/13/11	ML6481AR
		Dilution Factor: 10		Analysis Time..: 19:55		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: AQUEOUS IDW

TOTAL Metals

Lot-Sample #...: F1I010435-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**124**	**15**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML6481AT**
		Dilution Factor: 1		Analysis Time..: 19:55		
Sodium	**160000 NE**	**10000**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML6481AU**
		Dilution Factor: 10		Analysis Time..: 19:55		
Nickel	ND	40	ug/L	SW846 6010C	09/12-09/13/11	ML6481AV
		Dilution Factor: 1		Analysis Time..: 19:55		
Lead	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML6481AW
		Dilution Factor: 1		Analysis Time..: 19:55		
Antimony	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML6481AX
		Dilution Factor: 1		Analysis Time..: 19:55		
Selenium	ND	15	ug/L	SW846 6010C	09/12-09/13/11	ML6481A0
		Dilution Factor: 1		Analysis Time..: 19:55		
Strontium	**1960 E**	**50**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML6481A1**
		Dilution Factor: 10		Analysis Time..: 19:55		
Thallium	ND	20	ug/L	SW846 6010C	09/12-09/13/11	ML6481A2
		Dilution Factor: 1		Analysis Time..: 19:55		
Vanadium	ND	50	ug/L	SW846 6010C	09/12-09/13/11	ML6481A3
		Dilution Factor: 1		Analysis Time..: 19:55		
Zinc	**30.2**	**20**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML6481A4**
		Dilution Factor: 1		Analysis Time..: 19:55		
Prep Batch #...: 1251138						
Mercury	ND	0.3	ug/L	SW846 7470A	09/13/11	ML6481AD
		Dilution Factor: 1		Analysis Time..: 13:03		

NOTE(S):

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: NON-AQUEOUS IDW

TCLP GC/MS Volatiles

Lot-Sample #...: F1I010435-002	**Work Order #...:** ML6491AP	**Matrix.....:** SOLID	
Date Sampled...: 08/31/11 10:20	**Date Received..:** 09/01/11		
Leach Date.....: 09/06/11	**Prep Date.....:** 09/08/11	**Analysis Date..:** 09/08/11	
Leach Batch #..: P124907	**Prep Batch #...:** 1251207	**Analysis Time..:** 23:22	
Dilution Factor: 1			
% Moisture.....: 62	**Method.....:** SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	50	ug/L
2-Butanone	ND	50	ug/L
Carbon tetrachloride	ND	50	ug/L
Chlorobenzene	**5.3 J,B**	**50**	**ug/L**
Chloroform	ND	50	ug/L
1,4-Dichlorobenzene	ND	50	ug/L
1,2-Dichloroethane	ND	50	ug/L
1,1-Dichloroethene	ND	50	ug/L
Tetrachloroethene	ND	50	ug/L
Trichloroethene	ND	50	ug/L
Vinyl chloride	ND	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(85 - 115)
Toluene-d8	101	(85 - 120)
4-Bromofluorobenzene	95	(75 - 120)
1,2-Dichloroethane-d4	105	(70 - 120)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: NON-AQUEOUS IDW

TCLP GC/MS Semivolatiles

Lot-Sample #...: F1I010435-002	**Work Order #...:** ML6491AQ	**Matrix.....:** SOLID	
Date Sampled...: 08/31/11 10:20	**Date Received..:** 09/01/11		
Leach Date.....: 09/02/11	**Prep Date.....:** 09/07/11	**Analysis Date..:** 09/11/11	
Leach Batch #..: P124506	**Prep Batch #...:** 1250060	**Analysis Time..:** 23:00	
Dilution Factor: 1			
% Moisture.....: 62	**Method.....:** SW846 8270C		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,4-Dichlorobenzene	ND	50	ug/L
2,4-Dinitrotoluene	ND	50	ug/L
Hexachlorobenzene	ND	50	ug/L
Hexachlorobutadiene	ND	50	ug/L
Hexachloroethane	ND	50	ug/L
2-Methylphenol	ND	50	ug/L
3-Methylphenol & 4-Methylphenol	ND	50	ug/L
Nitrobenzene	ND	50	ug/L
Pentachlorophenol	ND	250	ug/L
Pyridine	ND	100	ug/L
2,4,5-Trichlorophenol	ND	50	ug/L
2,4,6-Trichlorophenol	ND	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	68	(20 - 110)
Phenol-d5	62	(10 - 115)
Nitrobenzene-d5	80	(40 - 110)
2-Fluorobiphenyl	76	(50 - 110)
Terphenyl-d14	74	(50 - 135)
2,4,6-Tribromophenol	90	(40 - 125)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Shaw Environmental & Infrastructure Inc

Client Sample ID: NON-AQUEOUS IDW

TOTAL Metals

Lot-Sample #...: F1I010435-002 Matrix.....: SOLID
Date Sampled...: 08/31/11 10:20 Date Received..: 09/01/11
% Moisture.....: 62

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1256029						
Mercury	ND N	0.11	mg/kg	SW846 7471A	09/13/11	ML6491AR
		Dilution Factor: 1		Analysis Time..: 10:36		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: NON-AQUEOUS IDW

TCLP Metals

Lot-Sample #...: F1I010435-002 **Matrix.....:** SOLID
Date Sampled...: 08/31/11 10:20 **Date Received..:** 09/01/11
Leach Date.....: 09/02/11 **Leach Batch #..:** P124506

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1249119						
Silver	ND	40	ug/L	SW846 6010B	09/06-09/09/11	ML6491AH
		Dilution Factor: 1		Analysis Time..: 18:13		
Arsenic	ND	500	ug/L	SW846 6010B	09/06-09/09/11	ML6491AJ
		Dilution Factor: 1		Analysis Time..: 18:13		
Barium	**377**	**125**	**ug/L**	**SW846 6010B**	**09/06-09/12/11**	**ML6491AK**
		Dilution Factor: 1		Analysis Time..: 14:36		
Chromium	**8.8 J**	**25**	**ug/L**	**SW846 6010B**	**09/06-09/09/11**	**ML6491AL**
		Dilution Factor: 1		Analysis Time..: 18:13		
Lead	ND	250	ug/L	SW846 6010B	09/06-09/09/11	ML6491AM
		Dilution Factor: 1		Analysis Time..: 18:13		
Selenium	**7.7 J**	**800**	**ug/L**	**SW846 6010B**	**09/06-09/09/11**	**ML6491AN**
		Dilution Factor: 1		Analysis Time..: 18:13		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: NON-AQUEOUS IDW

General Chemistry

Lot-Sample #...: F1I010435-002 Work Order #...: ML649 Matrix.....: SOLID
Date Sampled...: 08/31/11 10:20 Date Received..: 09/01/11
% Moisture.....: 62

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	62.3	0.10	%	MCAWW 160.3 MOD	09/06-09/07/11	1249010
	Dilution Factor: 1			Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001

TOTAL Metals

Lot-Sample #...: F1I010435-003 Matrix.....: WATER
Date Sampled...: 08/31/11 11:50 Date Received..: 09/01/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1249123						
Uranium	34.5	10	ug/L	SW846 6020A	09/06-09/14/11	ML65D1A2
		Dilution Factor: 10		Analysis Time..: 00:08		
Prep Batch #...: 1249124						
Silver	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AC
		Dilution Factor: 1		Analysis Time..: 20:34		
Aluminum	2320	200	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AD
		Dilution Factor: 1		Analysis Time..: 20:34		
Arsenic	2.6 J	10	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AA
		Dilution Factor: 1		Analysis Time..: 20:34		
Barium	183	50	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AE
		Dilution Factor: 1		Analysis Time..: 20:34		
Beryllium	0.99 J	5	ug/L	SW846 6010C	09/12-09/14/11	ML65D1AF
		Dilution Factor: 1		Analysis Time..: 09:52		
Calcium	1200000 E	50000	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AG
		Dilution Factor: 50		Analysis Time..: 19:23		
Cadmium	ND	5	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AH
		Dilution Factor: 1		Analysis Time..: 20:34		
Cobalt	9.2 J	50	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AJ
		Dilution Factor: 1		Analysis Time..: 20:34		
Chromium	4.2 J	10	ug/L	SW846 6010C	09/12-09/14/11	ML65D1AK
		Dilution Factor: 1		Analysis Time..: 09:52		
Copper	14.4 J	25	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AL
		Dilution Factor: 1		Analysis Time..: 20:34		
Iron	3710	100	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AM
		Dilution Factor: 1		Analysis Time..: 20:34		
Magnesium	544000	50000	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AN
		Dilution Factor: 50		Analysis Time..: 19:23		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001

TOTAL Metals

Lot-Sample #...: F1I010435-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	862	15	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AP
		Dilution Factor: 1		Analysis Time..: 20:34		
Sodium	3700000 NE	50000	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AQ
		Dilution Factor: 50		Analysis Time..: 19:23		
Nickel	ND	40	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AR
		Dilution Factor: 1		Analysis Time..: 20:34		
Lead	2.0 J	10	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AT
		Dilution Factor: 1		Analysis Time..: 20:34		
Antimony	12.5	10	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AU
		Dilution Factor: 1		Analysis Time..: 20:34		
Selenium	11.2 J	15	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AV
		Dilution Factor: 1		Analysis Time..: 20:34		
Strontium	19000 E	250	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AW
		Dilution Factor: 50		Analysis Time..: 19:23		
Thallium	ND	20	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AX
		Dilution Factor: 1		Analysis Time..: 20:34		
Vanadium	4.5 J	50	ug/L	SW846 6010C	09/12-09/13/11	ML65D1A0
		Dilution Factor: 1		Analysis Time..: 20:34		
Zinc	47.3	20	ug/L	SW846 6010C	09/12-09/13/11	ML65D1A1
		Dilution Factor: 1		Analysis Time..: 20:34		

NOTE(S):

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1I010435-004 Matrix.....: WATER
Date Sampled...: 08/31/11 11:50 Date Received..: 09/01/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1249123						
Uranium	33.9	10	ug/L	SW846 6020A	09/06-09/14/11	ML65F1A2
		Dilution Factor: 10		Analysis Time..: 00:15		
Prep Batch #...: 1249124						
Silver	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AC
		Dilution Factor: 1		Analysis Time..: 20:47		
Aluminum	840	200	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AD
		Dilution Factor: 1		Analysis Time..: 20:47		
Arsenic	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AA
		Dilution Factor: 1		Analysis Time..: 20:47		
Barium	172	50	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AE
		Dilution Factor: 1		Analysis Time..: 20:47		
Beryllium	ND	5	ug/L	SW846 6010C	09/12-09/14/11	ML65F1AF
		Dilution Factor: 1		Analysis Time..: 10:05		
Calcium	1260000 E	50000	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AG
		Dilution Factor: 50		Analysis Time..: 19:36		
Cadmium	ND	5	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AH
		Dilution Factor: 1		Analysis Time..: 20:47		
Cobalt	7.3 J	50	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AJ
		Dilution Factor: 1		Analysis Time..: 20:47		
Chromium	ND	10	ug/L	SW846 6010C	09/12-09/14/11	ML65F1AK
		Dilution Factor: 1		Analysis Time..: 10:05		
Copper	ND	25	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AL
		Dilution Factor: 1		Analysis Time..: 20:47		
Iron	1400	100	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AM
		Dilution Factor: 1		Analysis Time..: 20:47		
Magnesium	586000	50000	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AN
		Dilution Factor: 50		Analysis Time..: 19:36		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1I010435-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**489**	**15**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML65F1AP**
		Dilution Factor: 1		Analysis Time..: 20:47		
Sodium	**4180000 NE**	**50000**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML65F1AQ**
		Dilution Factor: 50		Analysis Time..: 19:36		
Nickel	ND	40	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AR
		Dilution Factor: 1		Analysis Time..: 20:47		
Lead	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AT
		Dilution Factor: 1		Analysis Time..: 20:47		
Antimony	**8.0 J**	**10**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML65F1AU**
		Dilution Factor: 1		Analysis Time..: 20:47		
Selenium	ND	15	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AV
		Dilution Factor: 1		Analysis Time..: 20:47		
Strontium	**21700 E**	**250**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML65F1AW**
		Dilution Factor: 50		Analysis Time..: 19:36		
Thallium	ND	20	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AX
		Dilution Factor: 1		Analysis Time..: 20:47		
Vanadium	ND	50	ug/L	SW846 6010C	09/12-09/13/11	ML65F1A0
		Dilution Factor: 1		Analysis Time..: 20:47		
Zinc	**19.6 J**	**20**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML65F1A1**
		Dilution Factor: 1		Analysis Time..: 20:47		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #7

GC/MS Volatiles

Lot-Sample #...: F1I010435-005 **Work Order #...:** ML65G1AA **Matrix.....:** WATER
Date Sampled...: 08/31/11 **Date Received..:** 09/01/11
Prep Date.....: 09/11/11 **Analysis Date..:** 09/11/11
Prep Batch #...: 1255150 **Analysis Time..:** 18:46
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**3.2 B**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropylene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #7

GC/MS Volatiles

Lot-Sample #...: F1I010435-005 Work Order #...: ML65G1AA Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	99	(85 - 120)
Dibromofluoromethane	94	(85 - 115)
1,2-Dichloroethane-d4	94	(70 - 120)
4-Bromofluorobenzene	100	(75 - 120)

NOTE(S):

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 **Work Order #...:** MMDNX1AA **Matrix.....:** WATER
MB Lot-Sample #: F1I120000-150

Prep Date.....: 09/11/11 **Analysis Time..:** 18:18
Analysis Date..: 09/11/11 **Prep Batch #...:** 1255150
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	**1.9 J**	**2.0**	**ug/L**	**SW846 8260B**
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloro-propylene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	99	(85 - 120)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 Work Order #...: MMDNX1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Dibromofluoromethane	94	(85 - 115)		
1,2-Dichloroethane-d4	98	(70 - 120)		
4-Bromofluorobenzene	100	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

TCLP GC/MS Volatiles

Client Lot #...: F1I010435 **Work Order #...:** ML8Q21AA **Matrix.....:** SOLID
MB Lot-Sample #: F1I060000-082
Leach Date.....: 09/06/11 **Prep Date.....:** 09/08/11 **Analysis Date..:** 09/08/11
Leach Batch #..: P124907 **Prep Batch #...:** 1251207 **Analysis Time..:** 22:58
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	50	ug/L	SW846 8260B
2-Butanone	ND	50	ug/L	SW846 8260B
Carbon tetrachloride	ND	50	ug/L	SW846 8260B
Chlorobenzene	**6.0 J**	**50**	**ug/L**	**SW846 8260B**
Chloroform	ND	50	ug/L	SW846 8260B
1,4-Dichlorobenzene	**3.6 J**	**50**	**ug/L**	**SW846 8260B**
1,2-Dichloroethane	ND	50	ug/L	SW846 8260B
1,1-Dichloroethene	ND	50	ug/L	SW846 8260B
Tetrachloroethene	ND	50	ug/L	SW846 8260B
Trichloroethene	ND	50	ug/L	SW846 8260B
Vinyl chloride	ND	100	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	97	(85 - 115)
Toluene-d8	101	(85 - 120)
4-Bromofluorobenzene	97	(75 - 120)
1,2-Dichloroethane-d4	100	(70 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

TCLP GC/MS Semivolatiles

Client Lot #...: F1I010435 Work Order #...: ML7VQ1AH Matrix.....: SOLID
MB Lot-Sample #: F1I020000-029
Leach Date.....: 09/02/11 Prep Date.....: 09/07/11 Analysis Date..: 09/11/11
Leach Batch #..: P124506 Prep Batch #...: 1250060 Analysis Time..: 15:20
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,4,5-Trichloro-phenol	ND	50	ug/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	50	ug/L	SW846 8270C
3-Methylphenol & 4-Methylphenol	ND	50	ug/L	SW846 8270C
1,4-Dichlorobenzene	ND	50	ug/L	SW846 8270C
2,4-Dinitrotoluene	ND	50	ug/L	SW846 8270C
Hexachlorobenzene	ND	50	ug/L	SW846 8270C
Hexachlorobutadiene	ND	50	ug/L	SW846 8270C
Hexachloroethane	ND	50	ug/L	SW846 8270C
2-Methylphenol	ND	50	ug/L	SW846 8270C
Nitrobenzene	ND	50	ug/L	SW846 8270C
Pentachlorophenol	ND	250	ug/L	SW846 8270C
Pyridine	ND	100	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	58	(20 - 110)
Phenol-d5	56	(10 - 115)
Nitrobenzene-d5	65	(40 - 110)
2-Fluorobiphenyl	64	(50 - 110)
Terphenyl-d14	78	(50 - 135)
2,4,6-Tribromophenol	73	(40 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1I060000-123 **Prep Batch #...:** 1249123						
Uranium	ND	1	ug/L	SW846 6020A	09/06-09/13/11	ML8V01AA
		Dilution Factor: 1				
		Analysis Time..: 23:26				
MB Lot-Sample #: F1I060000-124 **Prep Batch #...:** 1249124						
Aluminum	ND	200	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AD
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Antimony	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AU
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Arsenic	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AA
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Barium	ND	50	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AE
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Beryllium	ND	5	ug/L	SW846 6010C	09/12-09/14/11	ML8V21AF
		Dilution Factor: 1				
		Analysis Time..: 09:13				
Cadmium	ND	5	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AH
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Calcium	ND	1000	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AG
		Dilution Factor: 1				
		Analysis Time..: 18:46				
Chromium	ND	10	ug/L	SW846 6010C	09/12-09/14/11	ML8V21AK
		Dilution Factor: 1				
		Analysis Time..: 09:13				
Cobalt	ND	50	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AJ
		Dilution Factor: 1				
		Analysis Time..: 18:57				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AL
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Iron	ND	100	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AM
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Lead	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AT
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Magnesium	ND	1000	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AN
		Dilution Factor: 1				
		Analysis Time..: 18:46				
Manganese	ND	15	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AP
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Nickel	ND	40	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AR
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Selenium	ND	15	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AV
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Silver	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AC
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Sodium	ND	1000	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AQ
		Dilution Factor: 1				
		Analysis Time..: 18:46				
Strontium	ND	5	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AW
		Dilution Factor: 1				
		Analysis Time..: 18:46				
Thallium	ND	20	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AX
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Vanadium	ND	50	ug/L	SW846 6010C	09/12-09/13/11	ML8V21A0
		Dilution Factor: 1				
		Analysis Time..: 18:57				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20	ug/L	SW846 6010C	09/12-09/13/11	ML8V21A1
		Dilution Factor: 1				
		Analysis Time..: 18:57				

MB Lot-Sample #: F1I080000-138 **Prep Batch #...:** 1251138

Mercury	ND	0.3	ug/L	SW846 7470A	09/13/11	ML9961AA
		Dilution Factor: 1				
		Analysis Time..: 13:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1I130000-029 **Prep Batch #...:** 1256029						
Mercury	ND	0.040	mg/kg	SW846 7471A	09/13/11	MMDP51AA
		Dilution Factor: 1				
		Analysis Time..: 10:33				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: F1I010435 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1I020000-029 **Prep Batch #...:** 1249119						
Leach Date.....: 09/02/11 **Leach Batch #..:** P124506						
Arsenic	ND	500	ug/L	SW846 6010B	09/06-09/09/11	ML7VQ1AC
		Dilution Factor: 1				
		Analysis Time..: 18:00				
Barium	ND	125	ug/L	SW846 6010B	09/06-09/12/11	ML7VQ1AD
		Dilution Factor: 1				
		Analysis Time..: 14:23				
Chromium	ND	25	ug/L	SW846 6010B	09/06-09/09/11	ML7VQ1AE
		Dilution Factor: 1				
		Analysis Time..: 18:00				
Lead	ND	250	ug/L	SW846 6010B	09/06-09/09/11	ML7VQ1AF
		Dilution Factor: 1				
		Analysis Time..: 18:00				
Selenium	ND	800	ug/L	SW846 6010B	09/06-09/09/11	ML7VQ1AG
		Dilution Factor: 1				
		Analysis Time..: 18:00				
Silver	ND	40	ug/L	SW846 6010B	09/06-09/09/11	ML7VQ1AA
		Dilution Factor: 1				
		Analysis Time..: 18:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 Work Order #...: MMDNX1AC Matrix.....: WATER
LCS Lot-Sample#: F1I120000-150
Prep Date.....: 09/11/11 Analysis Date..: 09/11/11
Prep Batch #...: 1255150 Analysis Time..: 17:29
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
cis-1,3-Dichloropropene	109	(70 - 130)	SW846 8260B
Dibromochloromethane	109	(60 - 135)	SW846 8260B
Vinyl chloride	104	(50 - 145)	SW846 8260B
Bromomethane	96	(30 - 145)	SW846 8260B
Chloroethane	102	(60 - 135)	SW846 8260B
Acetone	108	(40 - 140)	SW846 8260B
1,1-Dichloroethene	109	(70 - 130)	SW846 8260B
Methylene chloride	104	(55 - 140)	SW846 8260B
Carbon disulfide	100	(35 - 160)	SW846 8260B
1,1-Dichloroethane	112	(70 - 135)	SW846 8260B
2-Butanone	98	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	103	(85 - 115)	SW846 8260B
Chloroform	106	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	108	(65 - 130)	SW846 8260B
Carbon tetrachloride	111	(65 - 140)	SW846 8260B
1,2-Dichloroethane	100	(70 - 130)	SW846 8260B
Benzene	106	(80 - 120)	SW846 8260B
Trichloroethene	106	(70 - 125)	SW846 8260B
1,2-Dichloropropane	108	(75 - 125)	SW846 8260B
Bromodichloromethane	110	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	104	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropyle	116	(55 - 140)	SW846 8260B
Toluene	114	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	123	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	116	(75 - 125)	SW846 8260B
2-Hexanone	100	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	109	(60 - 135)	SW846 8260B
Chlorobenzene	115	(80 - 120)	SW846 8260B
Bromoform	139 a	(70 - 130)	SW846 8260B
Ethylbenzene	118	(75 - 125)	SW846 8260B
Styrene	113	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	128	(65 - 130)	SW846 8260B
Tetrachloroethene	113	(45 - 150)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 **Work Order #...:** MMDNX1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1I120000-150

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichlorobenzene	**119**	**(70 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	100	(85 - 120)
Dibromofluoromethane	95	(85 - 115)
1,2-Dichloroethane-d4	95	(70 - 120)
4-Bromofluorobenzene	110	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 **Work Order #...:** MMCWV1AA **Matrix.....:** SOLID
LCS Lot-Sample#: F1I080000-207
Prep Date.....: 09/08/11 **Analysis Date..:** 09/08/11
Prep Batch #...: 1251207 **Analysis Time..:** 22:09
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Vinyl chloride	**98**	**(50 - 145)**	**SW846 8260B**
1,1-Dichloroethene	**85**	**(70 - 130)**	**SW846 8260B**
2-Butanone	**84**	**(30 - 150)**	**SW846 8260B**
Chloroform	**96**	**(65 - 135)**	**SW846 8260B**
Carbon tetrachloride	**94**	**(65 - 140)**	**SW846 8260B**
1,2-Dichloroethane	**99**	**(70 - 130)**	**SW846 8260B**
Benzene	**103**	**(80 - 120)**	**SW846 8260B**
Trichloroethene	**94**	**(70 - 125)**	**SW846 8260B**
Tetrachloroethene	**94**	**(45 - 150)**	**SW846 8260B**
Chlorobenzene	**96**	**(80 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(85 - 115)
Toluene-d8	98	(85 - 120)
4-Bromofluorobenzene	95	(75 - 120)
1,2-Dichloroethane-d4	101	(70 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: F1I010435 Work Order #...: ML9D21AA Matrix.....: SOLID
LCS Lot-Sample#: F1I070000-060
Prep Date.....: 09/07/11 Analysis Date..: 09/11/11
Prep Batch #...: 1250060 Analysis Time..: 15:53
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Pyridine	**35**	**(20 - 52)**	**SW846 8270C**
1,4-Dichlorobenzene	**74**	**(30 - 100)**	**SW846 8270C**
2-Methylphenol	**75**	**(40 - 110)**	**SW846 8270C**
3-Methylphenol & 4-Methylphenol	**77**	**(30 - 110)**	**SW846 8270C**
Hexachloroethane	**75**	**(30 - 95)**	**SW846 8270C**
Nitrobenzene	**76**	**(45 - 110)**	**SW846 8270C**
Hexachlorobutadiene	**76**	**(25 - 105)**	**SW846 8270C**
2,4,5-Trichlorophenol	**74**	**(50 - 110)**	**SW846 8270C**
2,4,6-Trichlorophenol	**75**	**(50 - 115)**	**SW846 8270C**
2,4-Dinitrotoluene	**74**	**(50 - 120)**	**SW846 8270C**
Hexachlorobenzene	**78**	**(50 - 110)**	**SW846 8270C**
Pentachlorophenol	**63**	**(40 - 115)**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	70	(20 - 110)
Phenol-d5	67	(10 - 115)
Nitrobenzene-d5	79	(40 - 110)
2-Fluorobiphenyl	77	(50 - 110)
Terphenyl-d14	96	(50 - 135)
2,4,6-Tribromophenol	89	(40 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1I060000-123 **Prep Batch #...:** 1249123					
Uranium	102	(80 - 120)	SW846 6020A	09/06-09/13/11	ML8V01AC
		Dilution Factor: 1		Analysis Time..: 23:33	
LCS Lot-Sample#: F1I060000-124 **Prep Batch #...:** 1249124					
Arsenic	100	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21A2
		Dilution Factor: 1		Analysis Time..: 19:04	
Silver	97	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21A3
		Dilution Factor: 1		Analysis Time..: 19:04	
Aluminum	92	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21A4
		Dilution Factor: 1		Analysis Time..: 19:04	
Barium	105	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21A5
		Dilution Factor: 1		Analysis Time..: 19:04	
Beryllium	114	(80 - 120)	SW846 6010C	09/12-09/14/11	ML8V21A6
		Dilution Factor: 1		Analysis Time..: 09:20	
Calcium	106	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21A7
		Dilution Factor: 1		Analysis Time..: 18:52	
Cadmium	102	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21A8
		Dilution Factor: 1		Analysis Time..: 19:04	
Cobalt	101	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21A9
		Dilution Factor: 1		Analysis Time..: 19:04	
Chromium	105	(80 - 120)	SW846 6010C	09/12-09/14/11	ML8V21CA
		Dilution Factor: 1		Analysis Time..: 09:20	
Copper	99	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CC
		Dilution Factor: 1		Analysis Time..: 19:04	
Iron	102	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CD
		Dilution Factor: 1		Analysis Time..: 19:04	
Magnesium	102	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CE
		Dilution Factor: 1		Analysis Time..: 18:52	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	103	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CF
		Dilution Factor: 1	Analysis Time..: 19:04		
Sodium	103	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CG
		Dilution Factor: 1	Analysis Time..: 18:52		
Nickel	99	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CH
		Dilution Factor: 1	Analysis Time..: 19:04		
Lead	99	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CJ
		Dilution Factor: 1	Analysis Time..: 19:04		
Antimony	102	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CK
		Dilution Factor: 1	Analysis Time..: 19:04		
Selenium	100	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CL
		Dilution Factor: 1	Analysis Time..: 19:04		
Strontium	104	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CM
		Dilution Factor: 1	Analysis Time..: 18:52		
Thallium	98	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CN
		Dilution Factor: 1	Analysis Time..: 19:04		
Vanadium	102	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CP
		Dilution Factor: 1	Analysis Time..: 19:04		
Zinc	108	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CQ
		Dilution Factor: 1	Analysis Time..: 19:04		
LCS Lot-Sample#: F1I080000-138		**Prep Batch #...:** 1251138			
Mercury	101	(80 - 120)	SW846 7470A	09/13/11	ML9961AC
		Dilution Factor: 1	Analysis Time..: 13:02		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1I130000-029 **Prep Batch #...:** 1256029					
Mercury	112	(80 - 120)	SW846 7471A	09/13/11	MMDP51AC
		Dilution Factor: 1		Analysis Time..: 10:35	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: F1I010435 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1I060000-119 **Prep Batch #...:** 1249119					
Silver	96	(80 - 120)	SW846 6010B	09/06-09/09/11	ML8VR1AA
		Dilution Factor: 1	Analysis Time..: 18:06		
Arsenic	95	(80 - 120)	SW846 6010B	09/06-09/09/11	ML8VR1AC
		Dilution Factor: 1	Analysis Time..: 18:06		
Barium	102	(80 - 120)	SW846 6010B	09/06-09/12/11	ML8VR1AD
		Dilution Factor: 1	Analysis Time..: 14:29		
Chromium	96	(80 - 120)	SW846 6010B	09/06-09/09/11	ML8VR1AE
		Dilution Factor: 1	Analysis Time..: 18:06		
Lead	96	(80 - 120)	SW846 6010B	09/06-09/09/11	ML8VR1AF
		Dilution Factor: 1	Analysis Time..: 18:06		
Selenium	98	(80 - 120)	SW846 6010B	09/06-09/09/11	ML8VR1AG
		Dilution Factor: 1	Analysis Time..: 18:06		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 Work Order #...: ML6481DW-MS Matrix.....: WATER
MS Lot-Sample #: F1I010435-001 ML6481DX-MSD
Date Sampled...: 08/31/11 09:30 Date Received..: 09/01/11
Prep Date.....: 09/11/11 Analysis Date..: 09/11/11
Prep Batch #...: 1255150 Analysis Time..: 19:35
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	110	(70 - 130)			SW846 8260B
	109	(70 - 130)	1.6	(0-20)	SW846 8260B
Dibromochloromethane	110	(60 - 135)			SW846 8260B
	109	(60 - 135)	1.1	(0-20)	SW846 8260B
Vinyl chloride	96	(50 - 145)			SW846 8260B
	93	(50 - 145)	2.3	(0-20)	SW846 8260B
Bromomethane	92	(30 - 145)			SW846 8260B
	87	(30 - 145)	4.9	(0-20)	SW846 8260B
Chloroethane	98	(60 - 135)			SW846 8260B
	93	(60 - 135)	5.5	(0-20)	SW846 8260B
Acetone	65	(40 - 140)			SW846 8260B
	57	(40 - 140)	7.4	(0-20)	SW846 8260B
1,1-Dichloroethene	99	(70 - 130)			SW846 8260B
	98	(70 - 130)	1.0	(0-20)	SW846 8260B
Methylene chloride	107	(55 - 140)			SW846 8260B
	109	(55 - 140)	2.1	(0-20)	SW846 8260B
Carbon disulfide	98	(35 - 160)			SW846 8260B
	95	(35 - 160)	2.9	(0-20)	SW846 8260B
1,1-Dichloroethane	112	(70 - 135)			SW846 8260B
	111	(70 - 135)	0.78	(0-20)	SW846 8260B
2-Butanone	106	(30 - 150)			SW846 8260B
	109	(30 - 150)	2.9	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	107	(85 - 115)			SW846 8260B
	106	(85 - 115)	0.70	(0-20)	SW846 8260B
Chloroform	106	(65 - 135)			SW846 8260B
	109	(65 - 135)	2.6	(0-20)	SW846 8260B
1,1,1-Trichloroethane	106	(65 - 130)			SW846 8260B
	105	(65 - 130)	1.0	(0-20)	SW846 8260B
Carbon tetrachloride	104	(65 - 140)			SW846 8260B
	103	(65 - 140)	1.4	(0-20)	SW846 8260B
1,2-Dichloroethane	107	(70 - 130)			SW846 8260B
	111	(70 - 130)	3.4	(0-20)	SW846 8260B
Benzene	108	(80 - 120)			SW846 8260B
	109	(80 - 120)	0.46	(0-20)	SW846 8260B
Trichloroethene	103	(70 - 125)			SW846 8260B
	103	(70 - 125)	0.68	(0-20)	SW846 8260B
1,2-Dichloropropane	109	(75 - 125)			SW846 8260B
	107	(75 - 125)	1.2	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 Work Order #...: ML6481DW-MS Matrix.....: WATER
MS Lot-Sample #: F1I010435-001 ML6481DX-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	108	(75 - 120)			SW846 8260B
	109	(75 - 120)	0.83	(0-20)	SW846 8260B
1,1,2-Trichloroethane	108	(75 - 125)			SW846 8260B
	106	(75 - 125)	1.2	(0-20)	SW846 8260B
trans-1,3-Dichloropropyle	114	(55 - 140)			SW846 8260B
	114	(55 - 140)	0.35	(0-20)	SW846 8260B
Toluene	109	(75 - 120)			SW846 8260B
	107	(75 - 120)	1.9	(0-20)	SW846 8260B
1,3-Dichlorobenzene	108	(75 - 125)			SW846 8260B
	107	(75 - 125)	1.0	(0-20)	SW846 8260B
1,4-Dichlorobenzene	105	(75 - 125)			SW846 8260B
	106	(75 - 125)	1.1	(0-20)	SW846 8260B
2-Hexanone	97	(55 - 130)			SW846 8260B
	103	(55 - 130)	6.0	(0-20)	SW846 8260B
4-Methyl-2-pentanone	112	(60 - 135)			SW846 8260B
	116	(60 - 135)	3.9	(0-20)	SW846 8260B
Chlorobenzene	109	(80 - 120)			SW846 8260B
	108	(80 - 120)	0.46	(0-20)	SW846 8260B
Bromoform	120	(70 - 130)			SW846 8260B
	125	(70 - 130)	3.6	(0-20)	SW846 8260B
Ethylbenzene	108	(75 - 125)			SW846 8260B
	108	(75 - 125)	0.09	(0-20)	SW846 8260B
Styrene	109	(65 - 135)			SW846 8260B
	111	(65 - 135)	1.1	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	115	(65 - 130)			SW846 8260B
	117	(65 - 130)	1.4	(0-20)	SW846 8260B
Tetrachloroethene	104	(45 - 150)			SW846 8260B
	104	(45 - 150)	0.48	(0-20)	SW846 8260B
1,2-Dichlorobenzene	108	(70 - 120)			SW846 8260B
	108	(70 - 120)	0.27	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	98	(85 - 120)
	97	(85 - 120)
Dibromofluoromethane	101	(85 - 115)
	102	(85 - 115)
1,2-Dichloroethane-d4	98	(70 - 120)
	102	(70 - 120)
4-Bromofluorobenzene	103	(75 - 120)
	102	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 Work Order #...: ML6491CC-MS Matrix.....: SOLID
MS Lot-Sample #: F1I010435-002 ML6491CD-MSD
Date Sampled...: 08/31/11 10:20 Date Received..: 09/01/11
Prep Date.....: 09/08/11 Analysis Date..: 09/08/11
Prep Batch #...: 1251207 Analysis Time..: 23:47
Dilution Factor: 1 % Moisture.....: 62

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Vinyl chloride	106	(50 - 145)			SW846 8260B
	108	(50 - 145)	1.8	(0-20)	SW846 8260B
1,1-Dichloroethene	90	(70 - 130)			SW846 8260B
	90	(70 - 130)	0.22	(0-20)	SW846 8260B
2-Butanone	85	(30 - 150)			SW846 8260B
	93	(30 - 150)	8.7	(0-20)	SW846 8260B
Chloroform	98	(65 - 135)			SW846 8260B
	96	(65 - 135)	2.8	(0-20)	SW846 8260B
Carbon tetrachloride	98	(65 - 140)			SW846 8260B
	98	(65 - 140)	0.30	(0-20)	SW846 8260B
1,2-Dichloroethane	97	(70 - 130)			SW846 8260B
	94	(70 - 130)	3.5	(0-20)	SW846 8260B
Benzene	104	(80 - 120)			SW846 8260B
	102	(80 - 120)	2.0	(0-20)	SW846 8260B
Trichloroethene	92	(70 - 125)			SW846 8260B
	92	(70 - 125)	0.10	(0-20)	SW846 8260B
Tetrachloroethene	92	(45 - 150)			SW846 8260B
	90	(45 - 150)	2.2	(0-20)	SW846 8260B
Chlorobenzene	95	(80 - 120)			SW846 8260B
	94	(80 - 120)	0.60	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(85 - 115)
	100	(85 - 115)
Toluene-d8	99	(85 - 120)
	97	(85 - 120)
4-Bromofluorobenzene	100	(75 - 120)
	99	(75 - 120)
1,2-Dichloroethane-d4	104	(70 - 120)
	101	(70 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...:	F1I010435	Work Order #...:	ML6491A9-MS	Matrix.....:	SOLID
MS Lot-Sample #:	F1I010435-002		ML6491CA-MSD		
Date Sampled...:	08/31/11 10:20	Date Received..:	09/01/11		
Prep Date.....:	09/07/11	Analysis Date..:	09/11/11		
Prep Batch #...:	1250060	Analysis Time..:	23:33		
Dilution Factor:	1	% Moisture.....:	62		

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Pyridine	41	(20 - 52)			SW846 8270C
	37	(20 - 52)	9.2	(0-20)	SW846 8270C
1,4-Dichlorobenzene	73	(30 - 100)			SW846 8270C
	67	(30 - 100)	8.9	(0-20)	SW846 8270C
2-Methylphenol	70	(40 - 110)			SW846 8270C
	68	(40 - 110)	3.9	(0-20)	SW846 8270C
3-Methylphenol & 4-Methylphenol	73	(30 - 110)			SW846 8270C
	71	(30 - 110)	3.6	(0-20)	SW846 8270C
Hexachloroethane	64	(30 - 95)			SW846 8270C
	59	(30 - 95)	8.8	(0-20)	SW846 8270C
Nitrobenzene	76	(45 - 110)			SW846 8270C
	71	(45 - 110)	6.9	(0-20)	SW846 8270C
Hexachlorobutadiene	75	(25 - 105)			SW846 8270C
	69	(25 - 105)	8.9	(0-20)	SW846 8270C
2,4,5-Trichlorophenol	79	(50 - 110)			SW846 8270C
	75	(50 - 110)	5.4	(0-20)	SW846 8270C
2,4,6-Trichlorophenol	76	(50 - 115)			SW846 8270C
	72	(50 - 115)	6.6	(0-20)	SW846 8270C
2,4-Dinitrotoluene	73	(50 - 120)			SW846 8270C
	70	(50 - 120)	4.5	(0-20)	SW846 8270C
Hexachlorobenzene	75	(50 - 110)			SW846 8270C
	71	(50 - 110)	5.5	(0-20)	SW846 8270C
Pentachlorophenol	70	(40 - 115)			SW846 8270C
	63	(40 - 115)	10	(0-20)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	67	(20 - 110)
	63	(20 - 110)
Phenol-d5	63	(10 - 115)
	61	(10 - 115)
Nitrobenzene-d5	79	(40 - 110)
	72	(40 - 110)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: F1I010435 **Work Order #...:** ML6491A9-MS **Matrix.....:** SOLID
MS Lot-Sample #: F1I010435-002 ML6491CA-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorobiphenyl	74	(50 - 110)
	69	(50 - 110)
Terphenyl-d14	74	(50 - 135)
	74	(50 - 135)
2,4,6-Tribromophenol	88	(40 - 125)
	82	(40 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER
Date Sampled...: 08/31/11 09:30 **Date Received..:** 09/01/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1I010435-001 **Prep Batch #...:** 1249123							
Uranium	106	(80 - 120)			SW846 6020A	09/06-09/13/11	ML6481A8
	107	(80 - 120)	1.1	(0-20)	SW846 6020A	09/06-09/14/11	ML6481A9
		Dilution Factor: 1					
		Analysis Time..: 23:54					
MS Lot-Sample #: F1I010435-001 **Prep Batch #...:** 1249124							
Aluminum	109	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CF
	104	(80 - 120)	5.2	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CG
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Antimony	108	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481DD
	103	(80 - 120)	4.4	(0-20)	SW846 6010C	09/12-09/13/11	ML6481DE
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Arsenic	106	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CA
	100	(80 - 120)	5.4	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CC
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Barium	109	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CH
	103	(80 - 120)	4.5	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CJ
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Beryllium	112	(80 - 120)			SW846 6010C	09/12-09/14/11	ML6481CK
	112	(80 - 120)	0.90	(0-20)	SW846 6010C	09/12-09/14/11	ML6481CL
		Dilution Factor: 1					
		Analysis Time..: 09:39					
Cadmium	105	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CP
	99	(80 - 120)	5.5	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CQ
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Calcium	89	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CM
	83	(80 - 120)	0.33	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CN
		Dilution Factor: 10					
		Analysis Time..: 20:08					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER
Date Sampled...: 08/31/11 09:30 **Date Received..:** 09/01/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	103	(80 - 120)			SW846 6010C	09/12-09/14/11	ML6481CU
	105	(80 - 120)	1.7	(0-20)	SW846 6010C	09/12-09/14/11	ML6481CV
		Dilution Factor: 1					
		Analysis Time..: 09:39					
Cobalt	103	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CR
	98	(80 - 120)	5.1	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CT
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Copper	108	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CW
	103	(80 - 120)	5.1	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CX
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Iron	105	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481C0
	98	(80 - 120)	4.7	(0-20)	SW846 6010C	09/12-09/13/11	ML6481C1
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Lead	102	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481DA
	97	(80 - 120)	4.7	(0-20)	SW846 6010C	09/12-09/13/11	ML6481DC
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Magnesium	90	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481C2
	89	(80 - 120)	0.08	(0-20)	SW846 6010C	09/12-09/13/11	ML6481C3
		Dilution Factor: 10					
		Analysis Time..: 20:08					
Manganese	107	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481C4
	101	(80 - 120)	5.0	(0-20)	SW846 6010C	09/12-09/13/11	ML6481C5
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Nickel	103	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481C8
	98	(80 - 120)	5.3	(0-20)	SW846 6010C	09/12-09/13/11	ML6481C9
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Selenium	105	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481DF
	100	(80 - 120)	4.6	(0-20)	SW846 6010C	09/12-09/13/11	ML6481DG
		Dilution Factor: 1					
		Analysis Time..: 20:21					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER
Date Sampled...: 08/31/11 09:30 **Date Received..:** 09/01/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	103	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CD
	99	(80 - 120)	4.6	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CE
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Sodium	94	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481C6
	77 N	(80 - 120)	1.0	(0-20)	SW846 6010C	09/12-09/13/11	ML6481C7
		Dilution Factor: 10					
		Analysis Time..: 20:08					
Strontium	99	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481DH
	97	(80 - 120)	0.83	(0-20)	SW846 6010C	09/12-09/13/11	ML6481DJ
		Dilution Factor: 10					
		Analysis Time..: 20:08					
Thallium	101	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481DK
	95	(80 - 120)	5.5	(0-20)	SW846 6010C	09/12-09/13/11	ML6481DL
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Vanadium	106	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481DM
	101	(80 - 120)	4.9	(0-20)	SW846 6010C	09/12-09/13/11	ML6481DN
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Zinc	113	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481DP
	107	(80 - 120)	5.4	(0-20)	SW846 6010C	09/12-09/13/11	ML6481DQ
		Dilution Factor: 1					
		Analysis Time..: 20:21					

MS Lot-Sample #: F1I010435-001 **Prep Batch #...:** 1251138

Mercury	102	(80 - 120)			SW846 7470A	09/13/11	ML6481DU
	100	(80 - 120)	1.8	(0-20)	SW846 7470A	09/13/11	ML6481DV
		Dilution Factor: 1					
		Analysis Time..: 13:07					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** SOLID
Date Sampled...: 08/31/11 10:20 **Date Received..:** 09/01/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1I010435-002 **Prep Batch #...:** 1256029						**% Moisture.....:** 62	
Mercury	128 N	(80 - 120)			SW846 7471A	09/13/11	ML6491CE
	132 N	(80 - 120)	2.9	(0-20)	SW846 7471A	09/13/11	ML6491CF
		Dilution Factor: 1					
		Analysis Time..: 10:43					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: F1I010435 **Matrix.....:** SOLID
Date Sampled...: 08/31/11 10:20 **Date Received..:** 09/01/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1I010435-002 **Prep Batch #...:** 1249119							
Leach Date.....: 09/02/11 **Leach Batch #..:** P124506							
Arsenic	96	(80 - 120)			SW846 6010B	09/06-09/09/11	ML6491AV
	107	(80 - 120)	11	(0-20)	SW846 6010B	09/06-09/09/11	ML6491AW
		Dilution Factor: 1					
		Analysis Time..: 18:26					
Barium	93	(80 - 120)			SW846 6010B	09/06-09/12/11	ML6491AX
	95	(80 - 120)	1.8	(0-20)	SW846 6010B	09/06-09/12/11	ML6491A0
		Dilution Factor: 1					
		Analysis Time..: 14:48					
Chromium	99	(80 - 120)			SW846 6010B	09/06-09/09/11	ML6491A1
	109	(80 - 120)	10	(0-20)	SW846 6010B	09/06-09/09/11	ML6491A2
		Dilution Factor: 1					
		Analysis Time..: 18:26					
Lead	98	(80 - 120)			SW846 6010B	09/06-09/09/11	ML6491A3
	108	(80 - 120)	9.6	(0-20)	SW846 6010B	09/06-09/09/11	ML6491A4
		Dilution Factor: 1					
		Analysis Time..: 18:26					
Selenium	98	(80 - 120)			SW846 6010B	09/06-09/09/11	ML6491A5
	110	(80 - 120)	11	(0-20)	SW846 6010B	09/06-09/09/11	ML6491A6
		Dilution Factor: 1					
		Analysis Time..: 18:26					
Silver	92	(80 - 120)			SW846 6010B	09/06-09/09/11	ML6491AT
	101	(80 - 120)	9.2	(0-20)	SW846 6010B	09/06-09/09/11	ML6491AU
		Dilution Factor: 1					
		Analysis Time..: 18:26					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1I010435 **Work Order #...:** MLT1Q-SMP MLT1Q-DUP **Matrix.....:** SOLID

Date Sampled...: 08/10/11 11:48 **Date Received..:** 08/19/11

% Moisture.....: 41

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture						SD Lot-Sample #: F1H190417-002		
	40.9	40.9	%	0.049	(0-30)	MCAWW 160.3 MOD	09/06-09/07/11	1249010

Dilution Factor: 1 Analysis Time..: 00:00

Shaw Environmental & Infrastructure Inc

Client Sample ID: AQUEOUS IDW

Radiochemistry

Lab Sample ID: F1I010435-001
Work Order: ML648
Matrix: WATER

Date Collected: 08/31/11 0930
Date Received: 09/01/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1251056**	**Yld % 87**
Thorium 228	0.022	U	0.028	0.100	0.036	09/08/11	09/09/11
Thorium 230	**0.077**		**0.050**	0.100	**0.036**	**09/08/11**	**09/09/11**
Thorium 232	0.028	U	0.032	0.100	0.039	09/08/11	09/09/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1251057**	**Yld % 78**
Uranium 234	**0.102**		**0.062**	0.100	**0.054**	**09/08/11**	**09/09/11**
Uranium 235/236	0.011	U	0.021	0.100	0.029	09/08/11	09/09/11
Uranium 238	**0.082**		**0.054**	0.100	**0.038**	**09/08/11**	**09/09/11**

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: AQUEOUS IDW DUP

Radiochemistry

Lab Sample ID: F1I010435-001X
Work Order: ML648
Matrix: WATER

Date Collected: 08/31/11 0930
Date Received: 09/01/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1251056**	**Yld % 69**
Thorium 228	0.037	U	0.040	0.100	0.045	09/08/11	09/09/11
Thorium 230	**0.098**		**0.064**	0.100	0.045	09/08/11	09/09/11
Thorium 232	0.017	U	0.029	0.100	0.045	09/08/11	09/09/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1251057**	**Yld % 74**
Uranium 234	**0.093**		0.063	0.100	0.052	09/08/11	09/09/11
Uranium 235/236	0.003	U	0.027	0.100	0.072	09/08/11	09/09/11
Uranium 238	**0.088**		0.063	0.100	0.062	09/08/11	09/09/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: NON-AQUEOUS IDW

Radiochemistry

Lab Sample ID: F1I010435-002
Work Order: ML649
Matrix: SOLID

Date Collected: 08/31/11 1020
Date Received: 09/01/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1249211		Yld % 84
Uranium 234	0.337		0.079	0.100	0.021	09/06/11	09/14/11
Uranium 235/236	0.009	U	0.014	0.100	0.023	09/06/11	09/14/11
Uranium 238	0.322		0.077	0.100	0.011	09/06/11	09/14/11
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1249210		Yld % 51
Thorium 228	0.35		0.11	0.10	0.05	09/06/11	09/14/11
Thorium 230	0.40		0.11	0.10	0.03	09/06/11	09/14/11
Thorium 232	0.259		0.088	0.100	0.032	09/06/11	09/14/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: NON-AOUEOUS IDW DUP

Radiochemistry

Lab Sample ID: F1I010435-002X
Work Order: ML649
Matrix: SOLID

Date Collected: 08/31/11 1020
Date Received: 09/01/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 1249210	Yld % 55
Thorium 228	0.318		0.096	0.100	0.048	09/06/11	09/14/11
Thorium 230	0.38		0.10	0.10	0.03	09/06/11	09/14/11
Thorium 232	0.244		0.081	0.100	0.029	09/06/11	09/14/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 1249211	Yld % 84
Uranium 234	0.303		0.073	0.100	0.017	09/06/11	09/14/11
Uranium 235/236	0.014		0.016	0.100	0.013	09/06/11	09/14/11
Uranium 238	0.417		0.087	0.100	0.010	09/06/11	09/14/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1I010435
Matrix: SOLID

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/g**	**Batch # 1249211**		**Yld % 95**		**F1I060000-211B**
Uranium 234	-0.0009	U	0.0086	0.100	0.026	09/06/11	09/14/11	
Uranium 235/236	-0.0023	U	0.0033	0.100	0.025	09/06/11	09/14/11	
Uranium 238	0.008	U	0.011	0.100	0.010	09/06/11	09/14/11	
Iso THORIUM (LONG CT) DOE A-01-R MOD			**pCi/g**	**Batch # 1249210**		**Yld % 90**		**F1I060000-210B**
Thorium 228	0.024	U	0.021	0.100	0.025	09/06/11	09/14/11	
Thorium 230	0.021	U	0.020	0.100	0.023	09/06/11	09/14/11	
Thorium 232	-0.001	U	0.0020	0.100	0.018	09/06/11	09/14/11	

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1I010435
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID / Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1251056		Yld % 91	F1I080000-056B
Thorium 228	0.012	U	0.023	0.100	0.041	09/08/11	09/09/11
Thorium 230	0.085		0.053	0.100	0.036	09/08/11	09/09/11
Thorium 232	-0.0020	U	0.0039	0.100	0.036	09/08/11	09/09/11
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1251057		Yld % 83	F1I080000-057B
Uranium 234	0.058	U	0.050	0.100	0.059	09/08/11	09/09/11
Uranium 235/236	-0.0053	U	0.0076	0.100	0.057	09/08/11	09/09/11
Uranium 238	0.017	U	0.024	0.100	0.023	09/08/11	09/09/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1I010435
Matrix: SOLID

Parameter	Spike Amount	Result	Total Uncert. (2 σ +/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso THORIUM (LONG CT) DOE A-01-R MOD		**pCi/g**		**A-01-R MOD**			**F1I060000-210C**
Thorium 230	24.5	24.2	2.4	0.07	90	99	(77 - 122)
	Batch #:	1249210		Analysis Date:	09/14/11		
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/g**		**A-01-R MOD**			**F1I060000-211C**
Uranium 234	1.63	1.75	0.22	0.02	93	107	(74 - 139)
Uranium 238	1.70	1.72	0.22	0.02	93	102	(75 - 140)
	Batch #:	1249211		Analysis Date:	09/14/11		

NOTE (S) F1I010435

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1I010435
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID / QC Control Limits
Iso THORIUM (LONG CT) DOE A-01-R MOD		pCi/L		A-01-R MOD			F1I080000-056C
Thorium 230	2.37	2.23	0.32	0.04	89	94	(77 - 118)
	Batch #:	1251056		Analysis Date:	09/09/11		
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/L		A-01-R MOD			F1I080000-057C
Uranium 234	3.26	3.31	0.42	0.04	98	101	(76 - 136)
Uranium 238	3.39	3.53	0.44	0.04	98	104	(76 - 134)
	Batch #:	1251057		Analysis Date:	09/09/11		

NOTE(S):

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1I010435
Matrix: SOLID

Date Sampled: 08/31/11
Date Received: 09/01/11

Parameter	SAMPLE Result		Total Uncert. (2σ +/-)	% Yld	DUPLICATE Result	Total Uncert. (2 σ +/-)	% Yld	QC Sample ID Precision	
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		A-01-R MOD			F1I010435-002	
Thorium 228	0.35		0.11	51	0.318	0.096	55	11	%RPD
Thorium 230	0.40		0.11	51	0.38	0.10	55	5	%RPD
Thorium 232	0.259		0.088	51	0.244	0.081	55	6	%RPD
	Batch #:		1249210	(Sample)	1249210	(Duplicate)			
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/g		A-01-R MOD			F1I010435-002	
Uranium 234	0.337		0.079	84	0.303	0.073	84	11	%RPD
Uranium 235/236	0.009	U	0.014	84	0.014	0.016	84	48	%RPD
Uranium 238	0.322		0.077	84	0.417	0.087	84	25	%RPD
	Batch #:		1249211	(Sample)	1249211	(Duplicate)			

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results
U Result is less than the sample detection limit.

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1I010435
Matrix: WATER

Date Sampled: 08/31/11
Date Received: 09/01/11

Parameter	SAMPLE Result		Total Uncert. (2σ +/-)	% Yld	DUPLICATE Result		Total Uncert. (2 σ +/-)	% Yld	QC Sample ID Precision	
Iso THORIUM (LONG CT) DOE A-01-R MOD			**pCi/L**		**A-01-R MOD**				**F1I010435-001**	
Thorium 228	0.022	U	0.028	87	0.037	U	0.040	69	54	%RPD
Thorium 230	0.077		0.050	87	0.098		0.064	69	24	%RPD
Thorium 232	0.028	U	0.032	87	0.017	U	0.029	69	48	%RPD
	Batch #:		1251056 (Sample)		1251056 (Duplicate)					
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**		**A-01-R MOD**				**F1I010435-001**	
Uranium 234	0.102		0.062	78	0.093		0.063	74	9	%RPD
Uranium 235/236	0.011	U	0.021	78	0.003	U	0.027	74	110	%RPD
Uranium 238	0.082		0.054	78	0.088		0.063	74	7	%RPD
	Batch #:		1251057 (Sample)		1251057 (Duplicate)					

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results
U Result is less than the sample detection limit.

F1I010435

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R44,METS,V1

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-09-01

Project: 140415
Guterl Steel
Analytical Due Date: 2011-09-14

PO#: 697886
Report to: Karl VanKeuren
Report Due Date: 2011-09-15

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 5
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER /
1	AQUEOUS IDW			2011-08-31 / 930	ML648 WATER

SAMPLE COMMENTS:

FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
HG	O8	SW846 7470A	WATER, 7470 Mercury	19	METALS, TOTAL (Method exclusive) - Waters	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846 8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	2O	EML A-01-R MOD	WATER, A-01-R MOD, Iso TH (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER A
2	NON-AQUEOUS IDW			2011-08-31 / 1020	ML649 SOLID

SAMPLE COMMENTS:

HG	O9	SW846 7471A	SOLID, 7471 Mercury	70	METALS, TOTAL (Method Exclusive) - Solids	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	QO	SW846 6010B	SOLID, TCLP 6010	34	TCLP(1311) -> METALS, TOTAL	D4	DOD QSM V4.X	PROT: T	WRK LOC	06			
CR	QO	SW846 6010B	SOLID, TCLP 6010	34	TCLP(1311) -> METALS, TOTAL	D4	DOD QSM V4.X	PROT: T	WRK LOC	06			

F1I010435

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: RAD.2-152

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-09-01

Project: 140415
Guterl Steel
Analytical Due Date: 2011-09-14

PO#: 697886
Report to: Karl VanKeuren
Report Due Date: 2011-09-15

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 5
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

BA	QO	SW846	6010B	SOLID, TCLP 6010	34	TCLP(1311) -> METALS, TOTAL	D4	DOD QSM V4.X	PROT: T	WRK LOC	06		
AS	QO	SW846	6010B	SOLID, TCLP 6010	34	TCLP(1311) -> METALS, TOTAL	D4	DOD QSM V4.X	PROT: T	WRK LOC	06		
AG	QO	SW846	6010B	SOLID, TCLP 6010	34	TCLP(1311) -> METALS, TOTAL	D4	DOD QSM V4.X	PROT: T	WRK LOC	06		
SE	QO	SW846	6010B	SOLID, TCLP 6010	34	TCLP(1311) -> METALS, TOTAL	D4	DOD QSM V4.X	PROT: T	WRK LOC	06		
XX	QL	SW846	8270C	SOLID, TCLP 8270	62	TCLP(1311) -> LIQ/LIQ, SEP FUNNEL - Acid->Base	D4	DOD QSM V4.X	PROT: T	WRK LOC	06	TIC: N	
XX	QK	SW846	8260B	SOLID, TCLP 8260	58	TCLP(1311-ZHE/filter) -> PURGE-AND-TRAP (Low Level)	D4	DOD QSM V4.X	PROT: T	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	ZZ	NONE	NONE	SOLID, 1311 TCLP ZHE Extraction	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: T	WRK LOC	06		
XX	ZZ	NONE	NONE	SOLID, TCLP 1311 Non ZHE Extraction	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: T	WRK LOC	06		
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	2O	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso TH (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A04BMW707DD0001			2011-08-31 / 1150	ML65D	WATER

SAMPLE COMMENTS:

AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1I010435

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guterl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc | #SMPS in LOT: 5

Date Received: 2011-09-01

Analytical Due Date: 2011-09-14

Report Due Date: 2011-09-15

Report Type: D Expanded Deliverable

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	A04BMW707DD0001 DISSOLVED			2011-08-31 / 1150	ML65F	WATER

SAMPLE COMMENTS:

SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	TRIP BLANK #7			2011-08-31 / 0	ML65G	WATER

SAMPLE COMMENTS:

XX	QK	SW846 8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N

stAmerica St. Louis
15 Rider Trail North
th City, MO 63045
ne 314.298.8566 fax 314.298.8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/31/2011	COC No: 015
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	**Analysis Turnaround Time**			Job No. 140416.09020100
cinnati, OH 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below			SDG No.
3) 782-4807 FAX	☐ 2 weeks			
ject Name: Former Guterl Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
) #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
ueous IDW	8/31/2011	0930	Grab	GW	11		X	X	X	X				X				X	
-Aqueous IDW	8/31/2011	1020	Grab	Soil	4		X	X							X	X	X	X	
4BMW707DD0001	8/31/2011	1150	Grab	GW	3	X			X	X									
Blank #7	8/31/2011	--	TB	--	1									X					

servation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other 1, 2, and 4

sible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

cial Instructions/QC Requirements & Comments:

inquished by:	Company: Shaw E & I. Inc.	Date/Time: 8/31/11 1535	Received by:	Company: TA Buffalo	Date/Time: 8/31/11 15:55
inquished by:	Company:	Date/Time:	Received by:	Company: BFLO	Date/Time: 8/31/11 16:40
inquished by:	Company:	Date/Time:	Received by:	Company: TA	Date/Time: 9/1/11 0920

TestAmerica St. Louis

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): FI1010435 TestAmerica St. Louis

CUR Form #: 1 3 2

CONDITION UPON RECEIPT FORM

Client: Shaw

Quote No: 89251

COC/RFA No: 015

Initiated By: BD Date: 9/1/11 Time: 0920

Shipping Information

Shipper: FedEx UPS DHL Courier Client Other: _____ Multiple Packages: Y N

Shipping # (s):*		Sample Temperature (s):**	
1. 4485 0258 6001	6.	1. 2	6.
2. ↓ 6102	7.	2.	7.
3.	8.	3.	8.
4.	9.	4.	9.
5.	10.	5.	10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	Y N	Are there custody seals present on the cooler?	8.	Y N	Are there custody seals present on bottles?
2.	Y N N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N N/A	Do custody seals on bottles appear to be tampered with?
3.	Y N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	Y N	Sample received with Chain of Custody?	11.	Y N N/A	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	Y N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	Y N	Sample received in proper containers?
6.	Y N	Was sample received broken?	13.	Y N N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	Y N	Is sample volume sufficient for analysis?	14.	Y N N/A	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

A04BMW707DD0001 sample bottle only has total metals for analysis. Log total uranium, per COC & LF

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 9/2/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004 rev13, REVISED 05/27/11 \\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin-0004 CUR.doc

APPENDIX H

Data Validation Reports
(Provided on Same CD as Appendix A)

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 18, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H020470
Site Name: Guterl Steel
Samples Collected: 07/27/2011
3 Aqueous Samples and 3 Sludge Samples

Isotopic Thorium and Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
Sewer Location # 1 US-0001 Sludge	F1H020470-001	Sewer Location # 1 UW-0001 Aqueous DUP	F1H020470-002X
Sewer Location # 1 US-0001 Sludge DUP	F1H020470-001X	Sewer Location # 2 US-0002 Sludge	F1H020470-003
Sewer Location # 1 UW-0001 Aqueous	F1H020470-002	Sewer Location # 2 UW-0002 Aqueous	F1H020470-004

DUP- Laboratory Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium and isotopic thorium analytical data from aqueous and sludge samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site (Lockport Sewer Locations).

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy (EML A-01-R-MOD), according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are Th-228, Th-230, Th-232, U-234, U-235 and U-238. The sludge sample results are reported on a dry weight basis.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
X		Blank Results
X		Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
X		Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the isotopic thorium and isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site (Lockport Sewer Locations).

Based upon the Th-230 method blank result the Th-230 result for Sewer Location #1 UW-0001 is qualified as estimated (J).

The Th-228, Th-230 and Th-232 results for Sewer Location # 2 UW-0002 are qualified as non-detected estimated (UJ). The Th-229 tracer recovery is 32%.

The Th-230 result for Sewer Location #1 UW-0001 is qualified as estimated (J). The reported result is greater than the MDC and less than the two sigma uncertainty.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 07/27/2011. The condition upon receipt form indicates that aqueous radionuclide samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Solid method blank results associated with preparation batches 1223198 and 1223199 are summarized below.

Radionuclide	Sample ID	Conc pCi/g	Total Uncertainty pCi/g	MDA pCi/g	Z-Factor
Th-228	F1H110000-198B	-0.0009	0.0018	0.0166	-0.9991
Th-230	F1H110000-198B	0.0221	0.0181	0.0099	2.4428
Th-232	F1H110000-198B	0.0073	0.0103	0.0099	1.4117
U-234	F1H110000-199B	0.0106	0.0150	0.0224	1.4117
U-235	F1H110000-199B	0.0053	0.0105	0.0142	0.9991
U-238	F1H110000-199B	0.0042	0.0084	0.0114	0.9991

MDA- Minimal Detectable Activity

No sludge results are qualified based upon the positive Th-230 method blank results. Th-230 sludge results are at concentrations more than 10 X the Th-230 method blank results.

Aqueous method blank results associated with preparation batches 1227018 and 1227019 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
Th-228	F1H150000-018B	0.0000	0.0075	0.0202	0.000
Th-230	F1H150000-018B	0.0225	0.0260	0.0203	1.7275
Th-232	F1H150000-018B	0.0000	0.0075	0.0202	0.000
U-234	F1H150000-019B	0.0133	0.0218	0.0344	1.2170
U-235	F1H150000-019B	-0.0024	0.0047	0.0428	-0.9991
U-238	F1H150000-019B	0.0000	0.0076	0.0205	0.0000

MDA- Minimal Detectable Activity

Using professional judgment the Th-230 result for Sewer Location # 1 UW-0001 is qualified as estimated (J). The reported positive Th-230 result is 0.026pCi/L +/- 0.030pci/L. Statistically this result is equal to the positive method blank result. Both the positive sample result and positive method blank results are less than the laboratory reporting limit 0.10 pCi/L.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer	Tracer Recovery
Sewer Location # 2 UW-0002	Th-229	32%

The Th-228, Th-230 and Th-232 results for Sewer Location # 2 UW-0002 are qualified as non-detected estimated (UJ).

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batches 1223198, 1227018, 122319 and 1227019 are summarized below. The laboratory did not analyze a LCSD. The laboratory did analyze a laboratory duplicate pair for each isotope in each matrix.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

All LCS recoveries are within the QAPP acceptance criteria and the laboratory derived acceptance criteria. U-235, Th-228 and Th-232 are not LCS spiked isotopes.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No MS/MSDs were analyzed. The laboratory analyzed a LCS and laboratory duplicate samples for each sample matrix.

No results are qualified due to the absence of MS/MSD results.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H020470.

No results are qualified based upon the absence of field duplicate results.

Laboratory Duplicates

The laboratory analyzed sludge sample Sewer Location #1 US-0001 (F1H020470-001) as the laboratory duplicate pair for analytical batches 1223198 and 1223199. Results are summarized below.

Analyte	Sewer Location #1 US-0001			Sewer Location #1 US-0001 DUP		
	Result pCi/g	TPU	MDA	Result pCi/g	TPU	MDA
Th-228	0.270	0.073	0.031	0.220	0.066	0.031
Th-230	0.448	0.096	0.020	0.271	0.073	0.020
Th-232	0.224	0.065	0.021	0.220	0.065	0.021
U-234	3.55	0.387	0.027	3.15	0.354	0.020
U-235	0.201	0.067	0.014	0.195	0.067	0.025
U-238	3.72	0.401	0.011	3.33	0.370	0.020

TPU – Total Propagated Uncertainty

No sludge results are qualified based upon the laboratory duplicate precision.

The laboratory analyzed aqueous sample Sewer Location #1 UW-0001(F1H020470-002) as the laboratory duplicate pair for analytical batches 1227018 and 1227019. Results are summarized below.

Analyte	Sewer Location #1 UW-0001			Sewer Location #1 UW-0001 DUP		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
Th-228	-0.002 U	0.020	0.058	0.007 U	0.028	0.062
Th-230	0.026	0.030	0.023	0.018 U	0.026	0.025
Th-232	0.009 U	0.017	0.023	0.009 U	0.018	0.025
U-234	10.9	1.09	0.038	10.9	1.10	0.023
U-235	0.61	0.166	0.047	0.49	0.151	0.029
U-238	10.4	1.05	0.044	11.2	1.13	0.023

TPU – Total Propagated Uncertainty

No aqueous results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
Sewer Location #1 UW-0001	Th-230	0.026	0.030	0.023

The Th-230 result for Sewer Location #1 UW-0001 is qualified as estimated (J).

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks for the field samples are properly identified, well defined and adequately resolved.

No results are qualified due to spectral resolution.

Calculations

The U-232 tracer recovery for Lockport Sewer Location #1 UW-0001 DUP (F1H020470-002 DUP) Batch 1227019

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 377
U-232 Tracer Background Counts: 1.25
U-232 Tracer net counts: 375.75
Count Time: 240 minutes
Detector Efficiency: 28.11%

U-232 Tracer recovered = (375.75)/(240)(0.0.2811) = 5.44 DPM
U-232 Tracer % Recovery = (5.44 DPM/7.155 DPM) * 100 = 77.8%. The laboratory reported 77.8%.

The Th-229 tracer recovery for Lockport Sewer Location #1 US-0001 (F1H020470-001) Batch 1223198

Th-229 Tracer concentration: 63.40 DPM/mL (DPM = disintegrations/minute)
Th-229 Tracer volume: 0.10 mL
Th-229 Tracer added: 6.340 DPM
Th-229 Tracer Gross Counts: 331
Th-229 Tracer Background Counts: 0.500
Th-229 Tracer net counts: 330.50
Count Time: 240 minutes
Detector Efficiency: 26.63%

Th-229 Tracer recovered = (330.50)/(240)(0.2663) = 5.171 DPM
Th-229 Tracer % Recovery = (5.171 DPM/6.34 DPM) * 100 = 81.6%. The laboratory reported 81.8%.

The U-234 concentration for Lockport Sewer Location #1 UW-0001 DUP (F1H020470-002 DUP) Batch 1227019

U-234 gross counts: 1265
U-234 background counts: 0.000
U-234 net counts: 1265
Count time: 240 minutes
Detector Efficiency: 28.11%
Tracer Recovery: 77.85%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (1265)/(2.22)(1.000)(240)(0.2811)(0.7785) = 10.85 pCi/L. The laboratory reported 10.87 pCi/L

The Th-230 concentration for Lockport Sewer Location #1 US-0001 (F1H020470-001) Batch 1223198

Th-230 gross counts: 104
Th-230 background counts: 0.250
Th-230 net counts: 103.75
Count time: 240 minutes
Detector Efficiency: 26.63%
Tracer Recovery: 81.85%
Sample mass: 2.001 grams
1 picocurie = 2.22 counts/minute

Th-230 Concentration: = (103.75)/(2.22)(2.000)(240)(0.2663)(0.8185) = 0.447 pCi/g. The laboratory reported 0.448 pCi/g

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 Thorium and Uranium Isotope results

Guterl Specialty Steel
F1H020470

Table 1 – Isotopic Thorium and Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
Sewer Location # 1 US-0001 Sludge	Sludge	A
Sewer Location # 1 US-0001 Sludge DUP	Sludge	A
Sewer Location # 1 UW-0001 Aqueous	Aqueous	J^1 J^2
Sewer Location # 1 UW-0001 Aqueous DUP	Aqueous	A
Sewer Location # 2 US-0002 Sludge	Sludge	A
Sewer Location # 2 UW-0002 Aqueous	Aqueous	J^3

A - Accept all data without qualification.

J^1 - The Th-230 result is qualified as estimated (J) due to positive Th-230 method blank results.

J^2 - The Th-230 result is qualified as estimated (J). The reported Th-230 result is greater than the MDC and less than the 2 sigma uncertainty.

J^3 - The Th-228, Th-230 and Th-232 results are qualified as non-detected estimated (UJ). The Th-239 tracer recovery is 32%.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H090481
Site Name: Guterl Steel
Samples Collected: 08/04/2011
8 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04DMW240001 Tot	F1H090481-001	A04DMW240001 Diss	F1H090481-005
A04AMW230001 Tot	F1H090481-002	A04AMW230001 Diss	F1H090481-006
A04DMW713D0001 Tot	F1H090481-003	A04DMW713D0001 Diss	F1H090481-007
A04BMW190001 Tot	F1H090481-004	A04BMW190001 Diss	F1H090481-008

Tot- Total Diss- Dissolved (field filtered)

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in

conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

All isotopic uranium results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

The condition upon receipt form states that the COC did not list the bottles for the filtered fractions.

The laboratory used an incorrect sample ID on the report forms. The laboratory has used the sample ID A04DMW230001. The COC does not list this sample. The correct sample ID is A04AMW230001. This validation has used the ID that is listed on the COC, A04AMW230001 Tot and A04AMW230001 Diss.

Sample Preservation and Holding Times

Samples were collected on 08/04/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.
No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1228169 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H170000-169B	0.013	0.022	0.035	1.2171
U-235	F1H170000-169B	-0.0024	0.0047	0.043	-0.9991
U-238	F1H170000-169B	-0.0038	0.0053	0.040	-1.4117

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R).

All tracer recoveries were within the acceptance criteria. No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1228169 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 100% and 99% respectively. U-235 is not a spiked isotope. All LCS recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H090481.

No results are qualified based upon the absence of field replicate results.

Laboratory Duplicates

Guterl steel sample A04AMW220001 Tot (F1H090496-02) associated with preparation batch 1228169 was analyzed as the laboratory duplicate sample. Results are summarized below.

Analyte	A04AMW220001 Tot			A04AMW220001 Tot DUP		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	24.34	2.33	0.034	24.30	2.30	0.062
U-235	1.03	0.27	0.043	1.27	0.293	0.040
U-238	24.83	2.37	0.034	23.20	2.21	0.032

TPU – Total Propagated Uncertainty

All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Calculations

The U-232 tracer recovery for A04DMW240001 Tot (F1H090481-001)

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer net counts: 320
Count Time: 240 minutes
Detector Efficiency: 27.75%

U-232 Tracer recovered = (320)/(240)(0.2775) = 4.804 DPM
U-232 Tracer % Recovery = (4.804 DPM/7.155 DPM) * 100 = 67.14%. The laboratory reported 67.145%.

The U-238 concentration for A04DMW240001 Tot (F1H090481-001)

U-238 net counts: 1254
Count time: 240 minutes

Detector Efficiency: 27.75%
Tracer Recovery: 67.15%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute
U-238 Concentration: = (1254)/(2.22)(1.000)(240)(0.2775)(0.6715) = 12.6 pCi/L. The laboratory reported 12.6 pCi/L

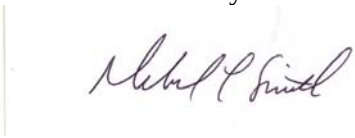
Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H090481

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04DMW240001 Tot	Aqueous	A
A04AMW230001 Tot	Aqueous	A
A04DMW713D0001 Tot	Aqueous	A
A04BMW190001 Tot	Aqueous	A
A04DMW240001 Diss	Aqueous	A
A04AMW230001 Diss	Aqueous	A
A04DMW713D0001 Diss	Aqueous	A
A04BMW190001 Diss	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 12, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H090481
Site Name: Guterl Steel
Samples Collected: 08/04/2011
8 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04DMW240001 Tot	F1H090481-001	A04DMW240001 Diss	F1H090481-005
A04AMW230001 Tot	F1H090481-002	A04AMW230001 Diss	F1H090481-006
A04DMW713D0001 Tot	F1H090481-003	A04DMW713D0001 Diss	F1H090481-007
A04BMW190001 Tot	F1H090481-004	A04BMW190001 Diss	F1H090481-008

Tot- Total Diss- Dissolved (field filtered)

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	No	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
X		ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

The ICP-MS serial dilution % difference is 18.4%. Uranium results for A04DMW240001 Tot, A04AMW230001 Tot, A04DMW713D0001 Tot, A04BMW190001Tot, A04DMW240001 Diss, A04AMW230001 Diss, A04DMW713D0001 Diss and A04BMW190001 Diss are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased low.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total results are at concentrations greater than the dissolved sample results.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

The condition upon receipt form states that the COC did not list the bottles for the filtered fractions.

The laboratory used an incorrect sample ID on the report forms. The laboratory has used the sample ID A04DMW230001. The COC does not list this sample. The correct sample ID is A04AMW230001. This validation has used the ID that is listed on the COC, A04AMW230001 Tot and A04AMW230001 Diss.

Sample Preservation and Holding Times

Samples were collected on 08/04/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time ICP-MS analysis is 180 days. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery is 94.4%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04AMW220001 Tot was the MS/MSD pair associated with preparation batch 1222061. These sample results were reported in laboratory data package F1H090496. The MS/MSD recoveries are 105.2% and 108.2% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04AMW220001 Tot, reported in laboratory data package F1H090496, was the MS/MSD pair associated with preparation batch 1222061. The laboratory duplicate RPD is 2.6%

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H090481.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Serial dilution sample A04AMW220001 Tot is associated with preparation batch 1222061. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
Uranium	73.6	87.2	18.4	J

The uranium results for A04DMW240001 Tot, A04AMW230001 Tot, A04DMW713D0001 Tot, A04BMW190001Tot, A04DMW240001 Diss, A04AMW230001 Diss, A04DMW713D0001 Diss and A04BMW190001 Diss are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased low.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution. The laboratory reported results between the method detection limit (MDL) and reporting limit (RL) as estimated (J).

All field sample results are at concentrations greater than the RL.

All total and dissolve fraction results agree within 20%.

Calculations

Sample A04AMW22001, reported in laboratory data package F1H090496, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 73.6 ug/L
MS uranium concentration: 1130 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1130 ug/L – 73.6 ug/L)/ 1000 ug/L)) * 100 = 105.7%. The laboratory reported 105.2%.

Serial Dilution:
Sample uranium concentration: 73.6 ug/L
Serial dilution concentration of the 5X dilution: 87.2 ug/L
Serial Dilution % Difference = Absolute value ((73.6 ug/L-87.2 ug/L))/ (73.6 ug/L))* 100 = 18.5%. The laboratory reported 18.4%.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

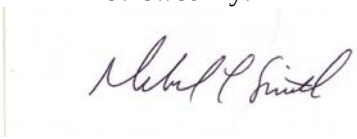
Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

295 Lower Flying Point Road Freeport ME 04032
Phone: (207) 865-1256 ☎ Fax: (207) 865-1256 Electronic Mail: KestrelET@comcast.net

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H090481

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04DMW240001 Tot	Aqueous	J[1]
A04AMW230001 Tot	Aqueous	J[1]
A04DMW713D0001 Tot	Aqueous	J[1]
A04BMW190001 Tot	Aqueous	J[1]
A04DMW240001 Diss	Aqueous	J[1]
A04AMW230001 Diss	Aqueous	J[1]
A04DMW713D0001 Diss	Aqueous	J[1]
A04BMW190001 Diss	Aqueous	J[1]

A - Accept all data.

J[1]- The uranium result is qualified as estimated (J). The ICP-MS serial dilution %D exceeds 10%. The reported result may be biased low.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 04, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H090496
Site Name: Guterl Steel
Samples Collected: 08/05/2011
6 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04AMW603D0001 Tot	F1H090496-001	A04AMW603D0001 Diss	F1H090499-004
A04AMW220001 Tot	F1H090496-002	A04AMW220001 Diss	F1H090496-005
A04AMW220001 DUP	F1H090496-002X	A04AMW220001 DUP	F1H090496-005X
A04BMW180001 Tot	F1H090496-003	A04BMW180001 Diss	F1H090496-006

Tot- Total Diss- Dissolved (field filtered) DUP-Lab Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in

conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

All isotopic uranium results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/05/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1228169 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H170000-169B	0.013	0.022	0.035	1.2171
U-235	F1H170000-169B	-0.0024	0.0047	0.043	-0.9991
U-238	F1H170000-169B	-0.0038	0.0053	0.040	-1.4117

MDA- Minimal Detectable Activity

Aqueous method blank results associated with preparation batch 1220942 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H170000-042B	-0.006	0.007	0.047	0.047
U-235	F1H170000-042B	-0.002	0.005	0.046	0.046
U-238	F1H170000-042B	0.020	0.028	0.043	0.043

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R).

All tracer recoveries were within the acceptance criteria. No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1228169 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 100% and 99% respectively. U-235 is not a spiked isotope. All LCS recoveries are within the QAPP acceptance criteria; 73-131%.

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1229042 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 99.7% and 103% respectively. U-235 is not a spiked isotope. All LCS recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H090496.

No results are qualified based upon the absence of field replicate results.

Laboratory Duplicates

Guterl steel sample A04AMW220001Tot associated with preparation batch 1228169 was analyzed as the laboratory duplicate sample. Results are summarized below.

Analyte	A04AMW220001 Tot			A04AMW220001 Tot DUP		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	24.34	2.33	0.034	24.30	2.30	0.062
U-235	1.03	0.27	0.043	1.27	0.293	0.040
U-238	24.83	2.37	0.034	23.20	2.21	0.032

TPU – Total Propagated Uncertainty

All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Guterl steel sample A04AMW220001 Dissolved associated with preparation batch 1220942 was analyzed as the laboratory duplicate sample. Results are summarized below.

Analyte	A04AMW220001 Dissolved			A04AMW220001 Dissolved DUP		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	21.58	2.06	0.088	23.09	2.18	0.058
U-235	1.05	0.26	0.037	1.22	0.28	0.062
U-238	21.20	2.03	0.030	22.69	2.15	0.069

TPU – Total Propagated Uncertainty

All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

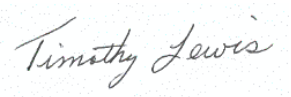
Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

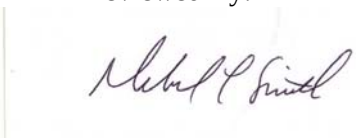
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H090496

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04AMW603D0001 Tot	Aqueous	A
A04AMW220001 Tot	Aqueous	A
A04AMW220001 DUP	Aqueous	A
A04BMW180001 Tot	Aqueous	A
A04AMW603D0001 Diss	Aqueous	A
A04AMW220001 Diss	Aqueous	A
A04AMW220001 DUP	Aqueous	A
A04BMW180001 Diss	Aqueous	A

A - Accept all data.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 04, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H090496
Site Name: Guterl Steel
Samples Collected: 08/05/2011
6 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04AMW603D0001 Tot	F1H090496-001	A04AMW603D0001 Diss	F1H090496-004
A04AMW220001 Tot	F1H090496-002	A04AMW220001 Diss	F1H090496-005
A04BMW180001 Tot	F1H090496-003	A04BMW180001 Diss	F1H090496-006

Tot- Total Diss- Dissolved (field filtered)

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
X		ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

The ICP-MS serial dilution % differences are 18.4% and 35.5%. Uranium results for A04AMW603D0001 Tot, A04AMW220001 Tot, A04BMW180001 Tot, A04AMW603D0001 Diss, A04AMW220001 Diss and A04BMW180001 Diss are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased low.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total results are at concentrations greater than the dissolved sample results.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/05/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery is 94.4%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04AMW220001 Tot was the MS/MSD pair associated with preparation batch 1222061. The MS/MSD recoveries are 105.2% and 108.2% respectively.

Sample A04AMW220001 Diss was the MS/MSD pair associated with preparation batch 1222062. The MS/MSD recoveries are 106.1% and 106.5% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04AMW220001 Tot was the MS/MSD pair associated with preparation batch 1222061. The RPD is 2.6%

Sample A04AMW220001 Diss was the MS/MSD pair associated with preparation batch 1222062. The RPD is 0.31%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H090496.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%. Two LCS samples were reported; one for preparation batch 1222061 and one for preparation batch 1222062.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Two serial dilution samples were analyzed. Serial dilution sample A04AMW220001 Tot is associated with preparation batch 1222061. Serial dilution sample A04AMW220001 Diss is associated with preparation batch 1222062. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
Uranium	73.6	87.2	18.4	J
Uranium	65.1	88.3	35.6	J

Uranium results for A04AMW603D0001 Tot, A04AMW220001 Tot, A04BMW180001 Tot, A04AMW603D0001 Diss, A04AMW220001 Diss and A04BMW180001 Diss are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased low.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution. The laboratory reported results between the method detection limit (MDL) and reporting limit (RL) as estimated (J).

All field sample results are at concentrations greater than the RL.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H090496

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04AMW603D0001 Tot	Aqueous	J[1]
A04AMW220001 Tot	Aqueous	J[1]
A04BMW180001 Tot	Aqueous	J[1]
A04AMW603D0001 Diss	Aqueous	J[1]
A04AMW220001 Diss	Aqueous	J[1]
A04BMW180001 Diss	Aqueous	J[1]

A - Accept all data.

J[1]- The uranium result is qualified as estimated (J). The ICP-MS serial dilution %D exceeds 10%. The reported result may be biased low.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

September 30, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H090504
Site Name: Guterl Steel
Samples Collected: 08/08/2011
10 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A02MW110001 Tot	F1H090504-001	A02MW110001 Diss	F1H090504-006
A02MW090001 Tot	F1H090504-002	A02MW090001 Diss	F1H090504-007
A02MW080001 Tot	F1H090504-003	A02MW080001 Diss	F1H090504-008
SEEP 01 Tot	F1H090504-004	SEEP 01 Diss	F1H090504-009
SEEP 02 Tot	F1H090504-005	SEEP 02 Diss	F1H090504-0010

Tot- Total Diss- Dissolved (field filtered)

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-*

Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004 and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
X		Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The U-232 tracer recovery for sample A02MW080001 Total is 37.4%. The U-234and U-238 results for A02MW080001 Total are qualified as estimated (J) and the U-235 result for A02MW08001 Total is qualified as non-detected estimated (UJ).

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/08/2011. According to the COC, samples were received on ice at 2° C. The temperature requirement is 4° C$\pm$ 2° C. No results are qualified based upon this deviation.

The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H170000-042B	-0.006	0.007	0.047	0.047
U-235	F1H170000-042B	-0.002	0.005	0.046	0.046
U-238	F1H170000-042B	0.020	0.028	0.043	0.043

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). The U-232 tracer recovery for sample A02MW080001 Total is 37.4%. The U-234 and U-238 results for A02MW080001 Total are qualified as estimated (J). The U-235 result for A02MW080001 Total is qualified as non-detected estimated (UJ).

All other tracer recoveries were within the laboratory derived acceptance criteria. No other results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries were 99.7% and 103% respectively. U-235 is not a spiked isotope.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H090504.

No results are qualified based upon the absence of field replicate results.

Laboratory Duplicates

Guterl steel sample A04AMW220001 Dissolved (F1H090496-005) reported in laboratory data package F1H090496 was analyzed as the laboratory duplicate sample. Results are summarized below.

Analyte	A04AMW220001 Dissolved			A04AMW220001 Dissolved DUP		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	21.58	2.06	0.088	23.09	2.18	0.058
U-235	1.05	0.26	0.037	1.22	0.28	0.062
U-238	21.20	2.03	0.030	22.69	2.15	0.069

TPU – Total Propagated Uncertainty

All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ) based upon tracer recoveries. No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

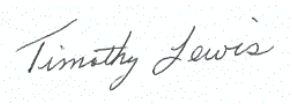
Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

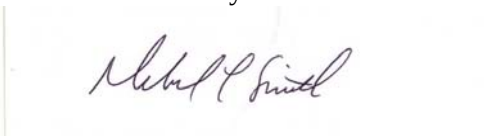
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

295 Lower Flying Point Road 🖃 Freeport ME 04032
Phone: (207) 865-1256 ☎ Fax: (207) 865-1256🖳 Electronic Mail: KestrelET@comcast.net

Guterl Specialty Steel
F1H090504

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A02MW110001 Tot	Aqueous	A
A02MW090001 Tot	Aqueous	A
A02MW080001 Tot	Aqueous	J^1 J^2
SEEP 01 Tot	Aqueous	A
SEEP 02 Tot	Aqueous	A
A02MW110001 Diss	Aqueous	A
A02MW090001 Diss	Aqueous	A
A02MW080001 Diss	Aqueous	A
SEEP 01 Diss	Aqueous	A
SEEP 02 Diss	Aqueous	A

A - Accept all data.

J^1- The U-234 and U-238 results are qualified as estimated (J). The U-232 tracer recovery is less than 40%.

J^2- The U-235 result is qualified as non-detected estimated (UJ). The U-232 tracer recovery is less than 40%.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

September 30, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H090504
Site Name: Guterl Steel
Samples Collected: 08/08/2011
10 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A02MW110001 Tot	F1H090504-001	A02MW110001 Diss	F1H090504-006
A02MW090001 Tot	F1H090504-002	A02MW090001 Diss	F1H090504-007
A02MW080001 Tot	F1H090504-003	A02MW080001 Diss	F1H090504-008
SEEP 01 Tot	F1H090504-004	SEEP 01 Diss	F1H090504-009
SEEP 02 Tot	F1H090504-005	SEEP 02 Diss	F1H090504-010

Tot- Total Diss- Dissolved (field filtered)

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 6020A (acid digestion) Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
X		ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

The ICP-MS serial dilution % difference is 35.5%. Uranium results for A02MW110001 Total, A02MW090001 Total, A02MW080001 Total, SEEP 01 Total, SEEP 02 Total, A02MW110001 Dissolved, A02MW090001 Dissolved, A02MW080001 Dissolved, SEEP 01 Dissolved and SEEP 02 Dissolved are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased low.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total results are detected at concentrations greater than the dissolved sample results.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/08/2011. According to the COC, samples were received on ice at 2° C. The temperature requirement is 4° C $\pm$ 2° C. No results are qualified based upon sample receipt temperatures.

The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery is 94.4%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	LOQ	Blank Conc
None					

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

The MS/MSD sample that was analyzed for total and dissolved uranium was reported in laboratory data package F1H090496. The Shaw sample ID is A04AMW220001 Dissolved. The MS/MSD recoveries were 106.1% and 106.5% respectively and the duplicate relative percent difference is 0.3%. The QAPP acceptance criteria are recoveries between 75-125% and RPDs $\leq$ 30%.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance %RPD for laboratory duplicate samples is $\leq$ 30%.

The MS/MSD sample that was analyzed for total and dissolved uranium was reported in laboratory data package F1H090496. The Shaw sample ID is A04AMW220001 Dissolved. The MS/MSD duplicate relative percent difference is 0.3%. The QAPP acceptance criterion are RPDs $\leq$ 30%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H090504.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP and ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04AMW220001 Dissolved reported in laboratory data package F1H090496 was analyzed as the ICP-MS serial dilution sample ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
Uranium	65.1	88.3	35.6	J

Uranium results for A02MW110001 Total, A02MW090001 Total, A02MW080001 Total, SEEP 01 Total, SEEP 02 Total, A02MW110001 Dissolved, A02MW090001 Dissolved, A02MW080001 Dissolved, SEEP 01 Dissolved and SEEP 02 Dissolved are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased low.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution. The laboratory reported results between the method detection limit (MDL) and reporting limit (RL) as estimated (J).

All field sample results are at concentrations greater than the RL.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H090504

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A02MW110001 Tot	Aqueous	J[1]
A02MW090001 Tot	Aqueous	J[1]
A02MW080001 Tot	Aqueous	J[1]
SEEP 01 Tot	Aqueous	J[1]
SEEP 02 Tot	Aqueous	J[1]
A02MW110001 Diss	Aqueous	J[1]
A02MW090001 Diss	Aqueous	J[1]
A02MW080001 Diss	Aqueous	J[1]
SEEP 01 Diss	Aqueous	J[1]
SEEP 02 Diss	Aqueous	J[1]

A - Accept all data.

J[1]- The uranium result is qualified as estimated (J). The ICP-MS serial dilution %D exceeds 10%. The reported result may be biased low.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 08, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H100419
Site Name: Guterl Steel
Samples Collected: 08/09/2011
6 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
MW705D0001 Tot	F1H100419-001	MW705D0001 Diss	F1H100419-004
MW705DD0001 Tot	F1H100419-002	MW705DD0001 Diss	F1H100419-005
A04DMW711D0001 Tot	F1H100419-003	A04DMW711D0001 Diss	F1H100419-006

Tot- Total Diss- Dissolved (field filtered) DUP-Lab Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

All isotopic uranium results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/09/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1220942 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H170000-042B	-0.006	0.007	0.047	0.047
U-235	F1H170000-042B	-0.002	0.005	0.046	0.046
U-238	F1H170000-042B	0.020	0.028	0.043	0.043

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R).

All tracer recoveries were within the acceptance criteria. No other results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1229042 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 99.7% and 103% respectively. U-235 is not a spiked isotope. All LCS recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H100419.

No results are qualified based upon the absence of field replicate results.

Laboratory Duplicates

Guterl steel sample A04AMW220001 Dissolved associated with preparation batch 1220942 was analyzed as the laboratory duplicate sample. Results are summarized below.

Analyte	A04AMW220001 Dissolved			A04AMW220001 Dissolved DUP		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	21.58	2.06	0.088	23.09	2.18	0.058
U-235	1.05	0.26	0.037	1.22	0.28	0.062
U-238	21.20	2.03	0.030	22.69	2.15	0.069

TPU – Total Propagated Uncertainty

All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H100419

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
MW705D0001 Tot	Aqueous	A
MW705DD0001 Tot	Aqueous	A
A04DMW711D0001 Tot	Aqueous	A
MW705D0001 Diss	Aqueous	A
MW705DD0001 Diss	Aqueous	A
A04DMW711D0001 Diss	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 07, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H100419
Site Name: Guterl Steel
Samples Collected: 08/09/2011
6 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
MW705D0001 Tot	F1H100419-001	MW705D0001 Diss	F1H100419-004
MW705DD0001 Tot	F1H100419-002	MW705DD0001 Diss	F1H100419-005
A04DMW711D0001 Tot	F1H100419-003	A04DMW711D0001 Diss	F1H100419-006

Tot- Total Diss- Dissolved (field filtered) FDUP- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
X		Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The laboratory has reported positive results between the method detection limit (MDL) and RL. The uranium results for MW705D0001 and MW705DD0001Diss are qualified as estimated (J). The reported results are between the MDL and RL.

All other field sample results are detected at concentrations greater than the RL. All total results are at concentrations greater than the dissolved sample results.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/09/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recoveries were 97.4% and 93.7%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample MW705D0001 Tot was analyzed as the MS/MSD pair associated with preparation batch 1223087. The MS/MSD recoveries are 112.4% and 113% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample MW705D0001 Tot was analyzed as the MS/MSD pair associated with preparation batch 1223087. The MS/MSD RPD is 0.5%

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H100419.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample MW705D0001Tot was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The uranium results for MW705D0001Tot and MW705DD0001Diss are qualified as estimated (J). The reported results are between the MDL and RL.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

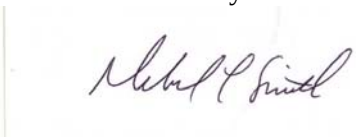
Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H100419

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
MW705D0001 Tot	Aqueous	J[1]
MW705DD0001 Tot	Aqueous	A
A04DMW711D0001 Tot	Aqueous	A
MW705D0001 Diss	Aqueous	A
MW705DD0001 Diss	Aqueous	J[1]
A04DMW711D0001 Diss	Aqueous	A

A - Accept all data.

J[1]- The uranium result is qualified as estimated (J). The reported result is between the MDL and RL.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H110460
Site Name: Guterl Steel
Samples Collected: 08/10/2011
14 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04MW604D0001 Diss	F1H110460-001	A04MW604D0001 Tot	F1H110460-008
A04DMW709DD0001 Diss	F1H110460-002	A04DMW709D0001 Tot	F1H110460-009
A04BMW605D0001 Diss FD#1	F1H110460-003	A04BMW605D0001 Tot FD#3	F1H110460-010
A04BMW260001 Diss	F1H110460-004	A04BMW260001 Tot	F1H110460-011
A04BMW9000 Diss FD#1	F1H110460-005	A04BMW9000 Tot FD#3	F1H110460-012
A04BMW9001 Diss FD#2	F1H110460-006	A04BMW9001 Tot FD#4	F1H110460-013
A04DMW704DD0001 Diss FD#2	F1H110460-007	A04DMW704DD0001 Tot FD#4	F1H110460-014

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL)

Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
X		Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	X	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The U-234, U-235 and U-238 results for A04BMW605D0001 Diss, A04BMW9000 Diss and A04BMW9000 Tot are qualified as estimated (J). The U-232 tracer recoveries for these samples are less than 40%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/10/2011. The condition upon receipt form indicates that aqueous metal samples were not properly preserved. The laboratory noted that the total and dissolved fractions for samples A04DMW709DD0001 and A04MW604D0001 were received at pH 7. The laboratory acidified the samples to a pH < 2. Samples sat for more than 24 hours at pH 2 before preparation.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1228169 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H190000-145B	0.005	0.015	0.032	0.727
U-235	F1H190000-145B	0.000	0.009	0.024	0.000
U-238	F1H190000-145B	0.005	0.015	0.032	0.727

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries

less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
A04BMW605D0001 Diss	37%
A04BMW9000 Diss	35%
A04BMW9000 Tot	38%

The U-234, U-235 and U-238 results for A04BMW605D0001 Diss, A04BMW9000 Diss and A04BMW9000 Tot are qualified as estimated (J).

Laboratory Control Samples

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1231145 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 109% and 103% respectively. The U-234 and U-238 LCSD recoveries are 95.2% and 101% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Four field duplicate pairs are reported in laboratory data package F1H110460; A04BMW605D0001 Diss/A04BMW9000 Diss, A04BMW9001 Diss/A04DMW704DD0001 Diss, A04BMW605D0001 Tot/A04BMW9000 Tot and A04BMW704DD0001 Tot/A04BMW9001 Tot. The field duplicate RPDs are less than 50%.

No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The laboratory analyzed a LCS/LCSD pair rather than a laboratory duplicate sample. Results are summarized below.

Analyte	F1H190000-145C LCS			F1H190000-145L LCS		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	3.55	0.47	0.02	3.11	0.40	0.02
U-235	0.12	0.076	0.052	0.20	0.088	0.025
U-238	3.48	0.46	0.06	3.41	0.43	0.02

TPU – Total Propagated Uncertainty

U-235 is not present in the LCS/LCSD spike solution. All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Calculations

The U-232 tracer recovery for A04DMW704DD0001 Diss (F1H110460-007)

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer net counts: 370.25
Count Time: 240 minutes
Detector Efficiency: 29.30%

U-232 Tracer recovered = (370.25)/(240)(0.2930) = 5.265 DPM
U-232 Tracer % Recovery = (5.265 DPM/7.155 DPM) * 100 = 73.58%. The laboratory reported 73.61%.

The U-234 concentration for A04DMW704DD0001 Diss (F1H110460-007)

U-234 gross counts: 1237
U-234 background counts: 1.500
U-234 net counts: 1235.5
Count time: 240 minutes
Detector Efficiency: 29.30%
Tracer Recovery: 73.61%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (1235.5)/(2.22)(1.000)(240)(0.2930)(0.7361) = 10.75 pCi/L. The laboratory reported 10.77 pCi/L

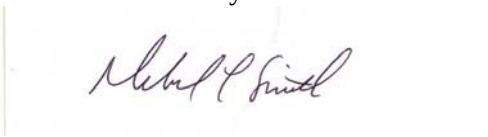
Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

295 Lower Flying Point Road Freeport ME 04032
Phone: (207) 865-1256 ☎ Fax: (207) 865-1256 Electronic Mail: KestrelET@comcast.net

Guterl Specialty Steel
F1H110460

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04MW604D0001 Diss	Aqueous	A
A04DMW709DD0001 Diss	Aqueous	A
A04BMW605D0001 Diss FD#1	Aqueous	J[1]
A04BMW260001 Diss	Aqueous	A
A04BMW9000 Diss FD#1	Aqueous	J[1]
A04BMW9001 Diss FD#2	Aqueous	A
A04DMW704DD0001 Diss FD#2	Aqueous	A
A04MW604D0001 Tot	Aqueous	A
A04DMW709D0001 Tot	Aqueous	A
A04BMW605D0001 Tot FD#3	Aqueous	A
A04BMW260001 Tot	Aqueous	A
A04BMW9000 Tot FD#3	Aqueous	J[1]
A04BMW9001 Tot FD#4	Aqueous	A
A04DMW704DD0001 Tot FD#4	Aqueous	A

A - Accept all data without qualification.

J[1]- The U-234, U-235 and U-238 results are qualified as estimated (J). The U-232 tracer recovery is less than 40%.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H110460
Site Name: Guterl Steel
Samples Collected: 08/10/2011
14 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04MW604D0001 Diss	F1H110460-001	A04MW604D0001 Tot	F1H110460-008
A04DMW709DD0001 Diss	F1H110460-002	A04DMW709D0001 Tot	F1H110460-009
A04BMW605D0001 Diss FD#1	F1H110460-003	A04BMW605D0001 Tot FD#3	F1H110460-010
A04BMW260001 Diss	F1H110460-004	A04BMW260001 Tot	F1H110460-011
A04BMW9000 Diss FD#1	F1H110460-005	A04BMW9000 Tot FD#3	F1H110460-012
A04BMW9001 Diss FD#2	F1H110460-006	A04BMW9001 Tot FD#4	F1H110460-013
A04DMW704DD0001 Diss FD#2	F1H110460-007	A04DMW704DD0001 Tot FD#4	F1H110460-014

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved

uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	X	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

All results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/10/2011. The condition upon receipt form indicates that aqueous metal samples were not properly preserved. The laboratory noted that the total and dissolved fractions for samples A04DMW709DD0001 and A04MW604D0001 were received at pH 7. The laboratory acidified the samples to a pH < 2. Samples sat for more than 24 hours at pH 2 before preparation.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was 96.8%

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04MW604D0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1224017. The MS/MSD recoveries are 102.5% and 102.3% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04MW604D0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1224017. The MS/MSD RPD is 0.2%

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Four field duplicate pairs are reported in laboratory data package F1H110460; A04BMW605D0001 Diss/A04BMW9000 Diss, A04BMW9001 Diss/A04DMW704DD0001 Diss, A04BMW605D0001 Tot/A04BMW9000 Tot and A04BMW704DD0001Tot/A04BMW9001Tot. The field duplicate RPDs are 0.1%, 2.2%, 1.9% and 5.0% respectively.

No results are qualified based upon the field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04MW604D0001 Diss was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

Calculations

Sample A04MW604D0001 Diss, reported in laboratory data package F1H110460, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 101 ug/L
MS uranium concentration: 1130 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1130 ug/L – 101 ug/L)/ 1000 ug/L)) * 100 = 102.9%. The laboratory reported 102.5%.

Serial Dilution:
Sample uranium concentration: 101 ug/L
Serial dilution concentration of the 5X dilution: 101 ug/L
Serial Dilution % Difference = Absolute value ((101 ug/L-101 ug/L))/ (101 ug/L))* 100 = 0.1%. The laboratory reported 0.12%.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

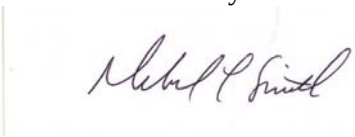
Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H110460

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04MW604D0001 Diss	Aqueous	A
A04DMW709DD0001 Diss	Aqueous	A
A04BMW605D0001 Diss FD#1	Aqueous	A
A04BMW260001 Diss	Aqueous	A
A04BMW9000 Diss FD#1	Aqueous	A
A04BMW9001 Diss FD#2	Aqueous	A
A04DMW704DD0001 Diss FD#2	Aqueous	A
A04MW604D0001 Tot	Aqueous	A
A04DMW709D0001 Tot	Aqueous	A
A04BMW605D0001 Tot FD#3	Aqueous	A
A04BMW260001 Tot	Aqueous	A
A04BMW9000 Tot FD#3	Aqueous	A
A04BMW9001 Tot FD#4	Aqueous	A
A04DMW704DD0001 Tot FD#4	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H120447
Site Name: Guterl Steel
Samples Collected: 08/11/2011
10 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04MW602D0001 Diss	F1H120447-001	A04MW602D0001 Tot	F1H120447-006
A04MW702DD0001 Diss	F1H120447-002	A04MW702DD0001 Tot	F1H120447-007
A03AMW13D0001 Diss	F1H120447-003	A03AMW13D0001 Tot	F1H120447-008
A04DMW708DD0001 Diss FD	F1H120447-004	A04DMW708DD0001 Tot FD	F1H120447-009
A04DMW9002 Diss FD	F1H120447-005	A04DMW9002 Tot FD	F1H120447-010

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	X	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

All isotopic uranium results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/11/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1231165 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H190000-165B	0.013	0.021	0.034	1.217
U-235	F1H190000-165B	0.009	0.018	0.025	0.999
U-238	F1H190000-165B	-0.004	0.005	0.039	-1.412

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1231165 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 91% and 98% respectively. The U-234 and U-238 LCSD recoveries are 100% and 106% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Two field duplicate pairs are reported in laboratory data package F1H120447; A04DMW708DD0001 Tot/A04DMW9002 Tot and A04DMW708DD0001 Diss/A04DMW9002 Diss. The field duplicate RPDs are less than 50%.

No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The U-232 tracer recoveries for these samples are less than 40%.

Analyte	F1H190000-165C			F1H190000-165L		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	2.97	0.40	0.048	3.27	0.44	0.046
U-235	0.14	0.077	0.027	0.11	0.069	0.029
U-238	3.32	0.43	0.037	3.60	0.46	0.023

TPU – Total Propagated Uncertainty

U-235 is not present in the LCS/LCSD spike solution. All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Calculations

The U-232 tracer recovery for A04MW602D0001 Diss (F1H120447-001)

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 245
U-232 Tracer Background Counts: 0.00
U-232 Tracer net counts: 245
Count Time: 240 minutes
Detector Efficiency: 27.40%
U-232 Tracer recovered = (245)/(240)(0.2740) = 3.726 DPM
U-232 Tracer % Recovery = (3.726 DPM/7.155 DPM) * 100 = 52.07%. The laboratory reported 52.09%.

The U-238 concentration for A04MW602D0001 Diss (F1H120447-001)
U-238 gross counts: 2605
U-238 background counts: 0.25

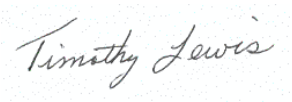
U-238 net counts: 2604.75
Count time: 240 minutes
Detector Efficiency: 27.40%
Tracer Recovery: 52.09%
Sample volume: 0.930 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (2604.75)/(2.22)(0.930)(240)(0.2740)(0.5209) = 36.83 pCi/L. The laboratory reported 36.82 pCi/L

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

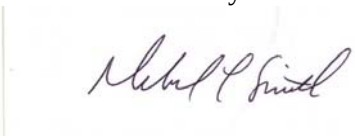
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H120447

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04MW602D0001 Diss	Aqueous	A
A04MW702DD0001 Diss	Aqueous	A
A03AMW13D0001 Diss	Aqueous	A
A04DMW708DD0001 Diss FD	Aqueous	A
A04DMW9002 Diss FD	Aqueous	A
A04MW602D0001 Tot	Aqueous	A
A04MW702DD0001 Tot	Aqueous	A
A03AMW13D0001 Tot	Aqueous	A
A04DMW708DD0001 Tot FD	Aqueous	A
A04DMW9002 Tot FD	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H120447
Site Name: Guterl Steel
Samples Collected: 08/11/2011
10 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04MW602D0001 Diss	F1H120447-001	A04MW602D0001 Tot	F1H120447-006
A04MW702DD0001 Diss	F1H120447-002	A04MW702DD0001 Tot	F1H120447-007
A03AMW13D0001 Diss	F1H120447-003	A03AMW13D0001 Tot	F1H120447-008
A04DMW708DD0001 Diss FD	F1H120447-004	A04DMW708DD0001 Tot FD	F1H120447-009
A04DMW9002 Diss FD	F1H120447-005	A04DMW9002 Tot FD	F1H120447-010

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data*

Review (OSWER 9240.1-45 and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	No	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	X	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

All results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/11/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was 96.8%

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the MS/MSD pair associated with preparation batch 1227138. The MS/MSD recoveries are 106.9% and 108.6% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the MS/MSD pair associated with preparation batch 1227138. The MS/MSD RPD is 1.42%

No results are qualified based upon laboratory duplicate precision.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

Two field duplicate pairs are reported in laboratory data package F1H120447; A04DMW708DD0001 Tot/A04DMW9002 Tot and A04DMW708DD0001 Diss/A04DMW9002 Diss. The field duplicate RPDs are 0.4% and 0.9% respectively.

No results are qualified based upon the field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

Calculations

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 112 ug/L
MS uranium concentration: 1180 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1180 ug/L – 112 ug/L)/ 1000 ug/L)) * 100 = 106.8%. The laboratory reported 106.9%.

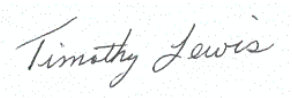
Serial Dilution:
Sample uranium concentration: 112 ug/L
Serial dilution concentration of the 5X dilution: 21.6 ug/L * 5 = 108 ug/L
Serial Dilution % Difference = Absolute value ((112 ug/L-108 ug/L))/ (112 ug/L))* 100 = 3.5%. The laboratory reported 3.4%.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

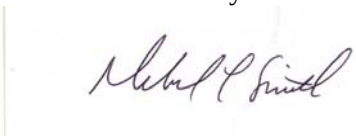
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H120447

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04MW602D0001 Diss	Aqueous	A
A04MW702DD0001 Diss	Aqueous	A
A03AMW13D0001 Diss	Aqueous	A
A04DMW708DD0001 Diss FD	Aqueous	A
A04DMW9002 Diss FD	Aqueous	A
A04MW602D0001 Tot	Aqueous	A
A04MW702DD0001 Tot	Aqueous	A
A03AMW13D0001 Tot	Aqueous	A
A04DMW708DD0001 Tot FD	Aqueous	A
A04DMW9002 Tot FD	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H130407
Site Name: Guterl Steel
Samples Collected: 08/12/2011
10 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04BMW250001 Tot FD	F1H130407-001	A04BMW250001 Diss FD	F1H130407-006
A02MW060001 Tot	F1H130407-002	A02MW060001 Diss	F1H130407-007
A02MW100001 Tot	F1H130407-003	A02MW100001 Diss	F1H130407-008
A02MW070001 Tot	F1H130407-004	A02MW070001 Diss	F1H130407-009
A04BMW9003 Tot FD	F1H130407-005	A04BMW9003 Diss FD	F1H130407-010

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in

conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
X		Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	X	Matrix Spike Results
	X	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The U-234, U-235 and U-238 results for A04BMW250001 Tot and A04BMW250001 Diss are qualified as estimated (J). The U-232 tracer recoveries for these samples are less than 40%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/12/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1231165 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H190000-165B	0.013	0.021	0.034	1.217
U-235	F1H190000-165B	0.009	0.018	0.025	0.999
U-238	F1H190000-165B	-0.004	0.005	0.039	-1.412

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
A04BMW250001 Tot	38.8%
A04BMW250001 Diss	36.6%

The U-234, U-235 and U-238 results for A04BMW250001 Tot and A04BMW250001 Diss are qualified as estimated (J).

Laboratory Control Samples

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1231165 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 91% and 98% respectively. The U-234 and U-238 LCSD recoveries are 100% and 106% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Two field duplicate pairs are reported in laboratory data package F1H130407; A04BMW250001 Tot/A04BMW9003 Tot and A04BMW250001 Diss/A04BMW9003 Diss. The field duplicate RPDs are less than 50%.

No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The U-232 tracer recoveries for these samples are less than 40%.

Analyte	F1H190000-165C			F1H190000-165L		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	2.97	0.40	0.048	3.27	0.44	0.046
U-235	0.14	0.077	0.027	0.11	0.069	0.029
U-238	3.32	0.43	0.037	3.60	0.46	0.023

TPU – Total Propagated Uncertainty

U-235 is not present in the LCS/LCSD spike solution. All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Calculations

The U-232 tracer recovery for A02MW060001 Diss (F1H130407-007)

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 329
U-232 Tracer Background Counts: 0.25
U-232 Tracer net counts: 328.75
Count Time: 240 minutes
Detector Efficiency: 27.08%
U-232 Tracer recovered = (328.75)/(240)(0.2708) = 5.058 DPM
U-232 Tracer % Recovery = (5.058 DPM/7.155 DPM) * 100 = 70.70%. The laboratory reported 70.70%.

The U-238 concentration for A02MW060001 Diss (F1H130407-007)
U-238 gross counts: 106
U-238 background counts: 0.25

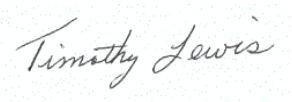
U-238 net counts: 105.75
Count time: 240 minutes
Detector Efficiency: 27.08%
Tracer Recovery: 70.71%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (105.75)/(2.22)(1.000)(240)(0.2708)(0.7071) = 1.036 pCi/L. The laboratory reported 1.036 pCi/L

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

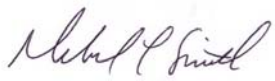
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H130407

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04BMW250001 Tot FD	Aqueous	J[1]
A02MW060001 Tot	Aqueous	A
A02MW100001 Tot	Aqueous	A
A02MW070001 Tot	Aqueous	A
A04BMW9003 Tot FD	Aqueous	A
A04BMW250001 Diss FD	Aqueous	J[1]
A02MW060001 Diss	Aqueous	A
A02MW100001 Diss	Aqueous	A
A02MW070001 Diss	Aqueous	A
A04BMW9003 Diss FD	Aqueous	A

A - Accept all data without qualification.

J[1]- The U-234, U-235 and U-238 results are qualified as estimated (J). The U-232 tracer recovery is less than 40%.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H130407
Site Name: Guterl Steel
Samples Collected: 08/12/2011
10 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04BMW250001 Tot FD	F1H130407-001	A04BMW250001 Diss FD	F1H130407-006
A02MW060001 Tot	F1H130407-002	A02MW060001 Diss	F1H130407-007
A02MW100001 Tot	F1H130407-003	A02MW100001 Diss	F1H130407-008
A02MW070001 Tot	F1H130407-004	A02MW070001 Diss	F1H130407-009
A04BMW9003 Tot FD	F1H130407-005	A04BMW9003 Diss FD	F1H130407-010

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data*

Review (OSWER 9240.1-45 and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	No	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	X	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

All results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/12/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was 96.8%

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the MS/MSD pair associated with preparation batch 1227138 for data package F1H130407. The MS/MSD recoveries are 106.9% and 108.6% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the MS/MSD pair associated with preparation batch 1227138 for data package F1H130407. The MS/MSD RPD is 1.42%

No results are qualified based upon laboratory duplicate precision.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

Two field duplicate pairs are reported in laboratory data package F1H130407; A04BMW250001 Tot/A04BMW9003 Tot and A04BMW250001 Diss/A04BMW9003 Diss. The field duplicate RPDs are 0.6% and 1.7% respectively.

No results are qualified based upon the field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the ICP-MS serial dilution sample for data package F1H130407. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

Calculations

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 112 ug/L
MS uranium concentration: 1180 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1180 ug/L – 112 ug/L)/ 1000 ug/L)) * 100 = 106.8%. The laboratory reported 106.9%.

Serial Dilution:
Sample uranium concentration: 112 ug/L
Serial dilution concentration of the 5X dilution: 21.6 ug/L * 5 = 108 ug/L
Serial Dilution % Difference = Absolute value ((112 ug/L-108 ug/L))/ (112 ug/L))*100 = 3.5%. The laboratory reported 3.4%.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H130407

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04BMW250001 Tot FD	Aqueous	A
A02MW060001 Tot	Aqueous	A
A02MW100001 Tot	Aqueous	A
A02MW070001 Tot	Aqueous	A
A04BMW9003 Tot FD	Aqueous	A
A04BMW250001 Diss FD	Aqueous	A
A02MW060001 Diss	Aqueous	A
A02MW100001 Diss	Aqueous	A
A02MW070001 Diss	Aqueous	A
A04BMW9003 Diss FD	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H160430
Site Name: Guterl Steel
Samples Collected: 08/15/2011
4 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04BMW706D0001 Diss	F1H160430-001	A04BMW706D0001 Tot	F1H160430-003
A04DMW710D0001 Diss	F1H160430-002	A04DMW710D0001 Tot	F1H160430-004

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

Using professional judgment the U-234 results for A04DMW710D0001 Diss and A04DMW710D0001 Tot are qualified as estimated (J). These results are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L
U-234	A04DMW710D0001 Diss	24.0	2.33	0.065
U-234	A04DMW710D0001 Tot	19.1	1.87	0.033

MDA- Minimal Detectable Activity

The result for the dissolved fraction of sample A04DMW710D0001 is significantly greater than the total fraction.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/15/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1234168 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H220000-168B	0.019	0.027	0.040	1.4117
U-235	F1H220000-168B	-0.002	0.005	0.043	-0.9991
U-238	F1H220000-168B	-0.002	0.004	0.035	-0.9991

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1234168 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 95% and 100% respectively. The U-234 and U-238 LCSD recoveries are 95.3% and 95.3% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H160430. No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The laboratory analyzed a LCS/LCSD pair rather than a laboratory duplicate sample. Results are summarized below.

Analyte	F1H220000-168C			F1H220000-168L		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	3.09	0.40	0.046	3.11	0.41	0.054
U-235	0.13	0.071	0.026	0.16	0.083	0.052
U-238	3.39	0.43	0.041	3.23	0.42	0.042

TPU – Total Propagated Uncertainty

U-235 is not present in the LCS/LCSD spike solution. All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Calculations

The U-232 tracer recovery for A04BMW706D0001 Tot (F1H160430-003)

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 280.0
U-232 Tracer Background Counts: 1.25
U-232 Tracer net counts: 278.75
Count Time: 240 minutes
Detector Efficiency: 28.11%

U-232 Tracer recovered = (278.75)/(240)(0.2811) = 4.13 DPM

U-232 Tracer % Recovery = (4.13 DPM/7.155 DPM) * 100 = 57.75%. The laboratory reported 57.76%.

The U-238 concentration for A04BMW706D0001 Tot (F1H160430-003)

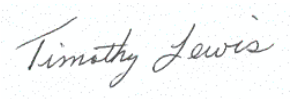
U-238 gross counts: 42
U-238 background counts: 0.500
U-238 net counts: 41.5
Count time: 240 minutes
Detector Efficiency: 28.11%
Tracer Recovery: 57.76%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (41.5)/(2.22)(1.000)(240)(0.2811)(0.5776) = 0.48 pCi/L. The laboratory reported 0.48 pCi/L

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

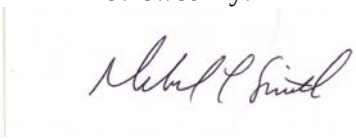
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H160430

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04BMW706D0001 Diss	Aqueous	A
A04DMW710D0001 Diss	Aqueous	J[1]
A04BMW706D0001 Tot	Aqueous	A
A04DMW710D0001 Tot	Aqueous	J[1]

A - Accept all data without qualification.

J[1]- The U-234 results are qualified as estimated (J). The U-234 concentration for the dissolved fraction is significantly greater than the total U-234 concentration for that fraction.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H160430
Site Name: Guterl Steel
Samples Collected: 08/15/2011
4 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04BMW706D0001 Diss	F1H160430-001	A04BMW706D0001 Tot	F1H160430-003
A04DMW710D0001 Diss	F1H160430-002	A04DMW710D0001 Tot	F1H160430-004

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

All results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/15/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was is 99.7%

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04BMW706D0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1229103. The MS/MSD recoveries are 111.5% and 111.7% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04BMW706D0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1229103. The MS/MSD RPD is 0.1%

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H160430.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04BMW706D0001 Diss was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below. The uranium result for A04BMW706D0001 Diss is 1.7 ug/L. The uranium sample concentration is less than 2X the reporting limit (RL). The uranium concentration is sample A04BMW706D0001 Diss is too low to evaluate the serial dilution results.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

Calculations

Sample A04BMW706D0001 Diss, reported in laboratory data package F1H160430, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 1.7 ug/L
MS uranium concentration: 1120 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1120 ug/L – 1.7 ug/L)/ 1000 ug/L)) * 100 = 111.8%. The laboratory reported 111.5%.

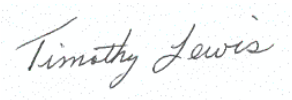
Serial Dilution:
Sample uranium concentration: 1.7 ug/L
Serial dilution concentration of the 5X dilution: 1.8 ug/L
The serial dilution% difference is not calculated because the sample concentration is not greater than 50X the IDL.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

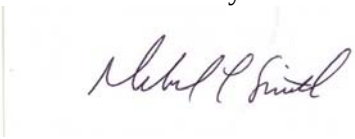
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H160430

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04BMW706D0001 Diss	Aqueous	A
A04DMW710D0001 Diss	Aqueous	A
A04BMW706D0001 Tot	Aqueous	A
A04DMW710D0001 Tot	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H170425
Site Name: Guterl Steel
Samples Collected: 08/15/2011 and 08/16/2011
12 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A03MW606D0001 Diss	F1H170425-001	A03MW606D0001 Tot	F1H170425-007
A03MW14D0001 Diss	F1H170425-002	A03MW14D0001 Tot	F1H170425-008
A03MW14D0001 Diss LDUP	F1H170425-002X	A03MW606DR0001 Tot	F1H170425-009
A03MW606DR0001 Diss	F1H170425-003	A03MW15D0001 Tot	F1H170425-010
A03MW15D0001 Diss	F1H170425-004	A03MW17D0001 Tot	F1H170425-011
A03MW17D0001 Diss	F1H170425-005	A04CMW711DD0001 Tot	F1H170425-012
A04CMW711DD0001 Diss	F1H170425-006		

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate LDUP- Laboratory Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by*

EIChroM ® Separation Resins (STL-RC-240). The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
X		Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The laboratory narrative noted that samples A03MW14D0001 Diss, A04CMW711DD0001 Diss, and A03MW17D0001 Tot had U-232 tracer recoveries below 30%. The laboratory re-extracted and re-analyzed these samples. The U-232 tracer recoveries met the laboratory acceptance criteria for the re-analyses. Due to limited sample volume 250 mLs of sample were extracted for A03MW14D0001 Diss, A04CMW711DD0001 Diss, and A03MW17D0001 Tot. The minimum detectable concentrations (MDCs) were elevated because of the smaller sample volumes.

The U-234, U-235 and U-238 results for A03MW606D0001 Diss, A03MW606DR0001 Diss and A03MW606D0001 Tot are qualified as estimated (J). The U-234 and U-238 results for A04CMW711DD0001 Tot are qualified as estimated (J) and the U-235 result for A04CMW711DD0001 Tot is qualified as non-detected estimated (UJ). The U-232 tracer recoveries are below 40%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/15/2011 and 08/16/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1234168 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H220000-168B	0.019	0.027	0.040	1.4117
U-235	F1H220000-168B	-0.002	0.005	0.043	-0.9991
U-238	F1H220000-168B	-0.002	0.004	0.035	-0.9991

MDA- Minimal Detectable Activity

Aqueous method blank results associated with preparation batch 1238036 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H260000-036B	-0.002	0.017	0.051	-0.218
U-235	F1H260000-036B	0.007	0.019	0.045	0.727
U-238	F1H260000-036B	-0.004	0.005	0.040	-1.412

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
A03MW606D0001 Diss	38.5%
A03MW606DR0001 Diss	36.6%
A03MW606D0001 Tot	36.6%
A04CMW711DD0001 Tot	30.8%

The U-234, U-235 and U-238 results for A03MW606D0001 Diss, A03MW606DR0001 Diss and A03MW606D0001 Tot are qualified as estimated (J). The U-234 and U-238 results for A04CMW711DD0001 Tot are qualified as estimated (J) and the U-235 result for A04CMW711DD0001 Tot is qualified as non-detected estimated (UJ).

Laboratory Control Samples

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1234168 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 95% and 100% respectively. The U-234 and U-238 LCSD recoveries are 95.3% and 95.3% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

The laboratory reported LCS results and laboratory duplicate results for preparation batch 1238036. LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1238036 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 97.5% and 110% respectively. U-235 is not a spiked isotope. All LCS recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS/LCSD recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H170425.

No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The laboratory analyzed a LCS/LCSD pair rather than a laboratory duplicate sample for batch 1234168. Results are summarized below.

Analyte	F1H220000-168C			F1H220000-168L		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	3.09	0.40	0.046	3.11	0.41	0.054
U-235	0.13	0.071	0.026	0.16	0.083	0.052
U-238	3.39	0.43	0.041	3.23	0.42	0.042

TPU – Total Propagated Uncertainty

U-235 is not present in the LCS/LCSD spike solution. All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Sample A03MW14D0001 Diss was analyzed as the laboratory duplicate sample for batch 1238036. Results are summarized below.

Analyte	A03MW14D0001 Diss			A03MW14D0001 Diss LDUP		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	2.49	0.82	0.39	2.35	0.64	0.25
U-235	-0.038	0.054	0.40	0.049	0.097	0.13
U-238	2.09	0.74	0.32	1.96	0.58	0.23

All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Samples A03MW14D0001 Diss, A04CMW711DD0001 Diss, and A03MW17D0001 Tot were re-extracted because of low U-232 tracer recoveries. Due to limited sample volumes for the re-extractions only 250 mLs of sample were extracted for A03MW14D0001 Diss, A04CMW711DD0001 Diss and A03MW17D0001 Tot. The minimum detectable concentrations (MDCs) were elevated because of the smaller sample volumes.

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Calculations

The U-232 tracer recovery for A03MW14D0001Tot (F1H170425-008) Batch 1234168

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 192
U-232 Tracer Background Counts: 0.250
U-232 Tracer net counts: 191.75
Count Time: 240 minutes
Detector Efficiency: 26.58%

U-232 Tracer recovered = (191.75)/(240)(0.2658) = 3.006 DPM
U-232 Tracer % Recovery = (3.006 DPM/7.155 DPM) * 100 = 42.01%. The laboratory reported 42.03%.

The U-238 concentration for A03MW14D0001Tot (F1H170425-008) Batch 1234168

U-238 gross counts: 124
U-238 background counts: 0.000
U-238 net counts: 124
Count time: 240 minutes
Detector Efficiency: 26.58%
Tracer Recovery: 42.03%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (124)/(2.22)(1.000)(240)(0.2658)(0.4203) = 2.08 pCi/L. The laboratory reported 2.08 pCi/L

The U-232 tracer recovery for A03MW14D0001 Diss (F1H170425-002) Batch 1238036

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 212
U-232 Tracer Background Counts: 0.000
U-232 Tracer net counts: 212.00
Count Time: 240 minutes
Detector Efficiency: 26.58%

U-232 Tracer recovered = (212.00)/(240)(0.2658) = 3.323 DPM
U-232 Tracer % Recovery = (3.323 DPM/7.155 DPM) * 100 = 46.44%. The laboratory reported 46.47%.

The U-238 concentration for A03MW14D0001 Diss (F1H170425-002) Batch 1238036

U-238 gross counts: 35
U-238 background counts: 0.500
U-238 net counts: 34.50
Count time: 240 minutes
Detector Efficiency: 26.58%
Tracer Recovery: 46.47%
Sample volume: 0.250 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (34.50)/(2.22)(0.250)(240)(0.2658)(0.4647) = 2.09 pCi/L. The laboratory reported 2.09 pCi/L

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H170425

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A03MW606D0001 Diss	Aqueous	J[1]
A03MW14D0001 Diss	Aqueous	A
A03MW14D0001 Diss LDUP	Aqueous	A
A03MW606DR0001 Diss	Aqueous	J[1]
A03MW15D0001 Diss	Aqueous	A
A03MW17D0001 Diss	Aqueous	A
A04CMW711DD0001 Diss	Aqueous	A
A03MW606D0001 Tot	Aqueous	J[1]
A03MW14D0001 Tot	Aqueous	A
A03MW606DR0001 Tot	Aqueous	A
A03MW15D0001 Tot	Aqueous	A
A03MW17D0001 Tot	Aqueous	A
A04CMW711DD0001 Tot	Aqueous	J[2] J[3]

A - Accept all data without qualification.

J[1]- The U-234, U-235 and U-238 results are qualified as estimated (J). The U-232 tracer recovery is less than 40%.

J[2]- The U-235 result is qualified as non-detected estimated (UJ). The U-232 tracer recovery is less than 40%. The laboratory reported the result as non-detected (U).

J[3]- The U-234 and U-238 results are qualified as estimated (J). The U-232 tracer recovery is less than 40%.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 20, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H170425
Site Name: Guterl Steel
Samples Collected: 08/15/2011 and 08/16/2011
12 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A03MW606D0001 Diss	F1H170425-001	A03MW606D0001 Tot	F1H170425-007
A03MW14D0001 Diss	F1H170425-002	A03MW14D0001 Tot	F1H170425-008
A03MW606DR0001 Diss	F1H170425-003	A03MW606DR0001 Tot	F1H170425-009
A03MW15D0001 Diss	F1H170425-004	A03MW15D0001 Tot	F1H170425-010
A03MW17D0001 Diss	F1H170425-005	A03MW17D0001 Tot	F1H170425-011
A04CMW711DD0001 Diss	F1H170425-006	A04CMW711DD0001 Tot	F1H170425-012

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data*

Review (OSWER 9240.1-45 and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%, except for A04CMW711DD0001 Diss and A04CMW711DD0001 Tot. The uranium results are 2.9 ug/L and 1.7 ug/L respectively. Both results are greater than 5X the MDL (0.23 ug/L). Using professional judgment the uranium results for A04CMW711DD0001 Diss and A04CMW711DD0001 Tot are qualified as estimated (J).

All other results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/15/2011 and 08/16/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was is 99.7%

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04BMW706D0001 Diss, reported in laboratory data package F1H160430, was analyzed as the MS/MSD pair associated with preparation batch 1229103. The MS/MSD recoveries are 111.5% and 111.7% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04BMW706D0001 Diss, reported in laboratory data package F1H160430, was analyzed as the MS/MSD pair associated with preparation batch 1229103. The MS/MSD RPD is 0.1%

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H170425.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04BMW706D0001 Diss, reported in laboratory data package F1H160430, was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below. The uranium result for A04BMW706D0001 Diss is 1.7ug/L. The uranium sample concentration is less than 2X the reporting limit (RL). The uranium concentration is sample A04BMW706D0001 Diss is too low to evaluate the serial dilution results.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%, except for A04CMW711DD0001 Diss and A04CMW711DD0001 Tot. The uranium results are 2.9 ug/L and 1.7 ug/L respectively. Both results are greater than 5X the MDL. Using professional judgment the uranium results for A04CMW711DD0001 Diss and A04CMW711DD0001 Tot are qualified as estimated (J).

Calculations

Sample A04BMW706D0001 Diss, reported in laboratory data package F1H160430, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 1.7 ug/L
MS uranium concentration: 1120 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1120 ug/L – 1.7 ug/L)/ 1000 ug/L)) * 100 = 111.8%. The laboratory reported 111.5%.

Serial Dilution:
Sample uranium concentration: 1.7 ug/L
Serial dilution concentration of the 5X dilution: 1.8 ug/L
The serial dilution% difference is not calculated because the sample concentration is not greater than 50X the IDL.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

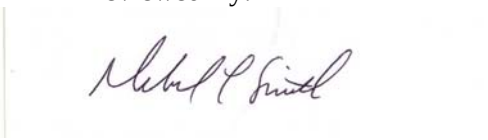
Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

295 Lower Flying Point Road Freeport ME 04032
Phone: (207) 865-1256 Fax: (207) 865-1256 Electronic Mail: KestrelET@comcast.net

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H170425

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A03MW606D0001 Diss	Aqueous	A
A03MW14D0001 Diss	Aqueous	A
A03MW606DR0001 Diss	Aqueous	A
A03MW15D0001 Diss	Aqueous	A
A03MW17D0001 Diss	Aqueous	A
A04CMW711DD0001 Diss	Aqueous	J^1
A03MW606D0001 Tot	Aqueous	A
A03MW14D0001 Tot	Aqueous	A
A03MW606DR0001 Tot	Aqueous	A
A03MW15D0001 Tot	Aqueous	A
A03MW17D0001 Tot	Aqueous	A
A04CMW711DD0001 Tot	Aqueous	J^1

A - Accept all data without qualification.

J^1 – The uranium result is qualified as estimated (J). The dissolved result is greater than the total result, both results are greater than 5X the MDL, and the % difference exceeds 20%.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H190431
Site Name: Guterl Steel
Samples Collected: 08/18/2011
12 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04DMW710DD0001 Diss	F1H190431-001	A04DMW710DD0001 Tot	F1H190431-007
A04DFB710DD0001 Diss	F1H190431-002	A04DFB710DD0001 Tot	F1H190431-008
A04DMW712DD0001 Diss	F1H190431-003	A04DMW712DD0001 Tot	F1H190431-009
A04AMW610D0001 Diss	F1H190431-004	A04AMW610D0001 Tot	F1H190431-011
A04AMW200001 Diss	F1H190431-005	A04AMW200001 Tot	F1H190431-012
A04AMW210001 Diss	F1H190431-006	A04AMW210001 Tot	F1H190431-013

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The laboratory used an incorrect sample identity. The laboratory used the client sample ID A04AM2100001 Diss rather than the client ID on the chain of custody, A04AMW210001 Diss. This validation uses the client ID as reported on the chain of custody, A04AMW210001 Diss.

All results are reported without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.
The laboratory used an incorrect sample identity. The laboratory used the client sample ID A04AM2100001 Diss rather than the client ID on the chain of custody, A04AMW210001 Diss. This validation uses the client ID as reported on the chain of custody, A04AMW210001 Diss.

Sample Preservation and Holding Times

Samples were collected on 08/18/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1235027 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H230000-027B	0.025	0.034	0.053	1.452
U-235	F1H230000-027B	-0.003	0.005	0.047	-0.999
U-238	F1H230000-027B	0.006	0.017	0.037	0.727

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1235027 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 87.6% and 98.0% respectively. The U-234 and U-238 LCSD recoveries are 94.7% and 100% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS/LCSD recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H190431. No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The laboratory analyzed a LCS/LCSD pair rather than a laboratory duplicate sample for batch 1235027. Results are summarized below.

Analyte	F1H230000-027C			F1H230000-027L		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	2.86	0.388	0.037	3.09	0.407	0.046
U-235	0.262	0.105	0.027	0.216	0.094	0.027
U-238	3.32	0.431	0.048	3.39	0.434	0.036

TPU – Total Propagated Uncertainty

U-235 is not present in the LCS/LCSD spike solution. All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks for the field samples are properly identified, well defined and adequately resolved. The spectra for LCS/LCSDs F1H230000-027C and F1H230000-027L were resolved manually. The full width half maximums for F1H230000-027C were almost twice those reported for the field samples. The LCS/LCSD recoveries were within the acceptance criteria and the U-232 tracer recoveries were 84.9% and 87.4% respectively.

No results are qualified due to spectral resolution.

Calculations

The U-232 tracer recovery for A04DMW712DD0001 Diss (F1H190431-003) Batch 1235027

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 274
U-232 Tracer Background Counts: 1.500

U-232 Tracer net counts: 272.50
Count Time: 240 minutes
Detector Efficiency: 27.67%

U-232 Tracer recovered = (272.50)/(240)(0.2767) = 4.103 DPM
U-232 Tracer % Recovery = (4.103 DPM/7.155 DPM) * 100 = 57.35%. The laboratory reported 57.37%.

The U-234 concentration for A04DMW712DD0001 Diss (F1H190431-003) Batch 1235027

U-234 gross counts: 1184
U-234 background counts: 1.250
U-234 net counts: 1182.75
Count time: 240 minutes
Detector Efficiency: 27.67%
Tracer Recovery: 57.37%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (1182.75)/(2.22)(1.000)(240)(0.2767)(0.5737) = 13.98 pCi/L. The laboratory reported 14.0 pCi/L

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H190431

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04DMW710DD0001 Diss	Aqueous	A
A04DFB710DD0001 Diss	Aqueous	A
A04DMW712DD0001 Diss	Aqueous	A
A04AMW610D0001 Diss	Aqueous	A
A04AMW200001 Diss	Aqueous	A
A04AMW210001 Diss	Aqueous	A
A04DMW710DD0001 Tot	Aqueous	A
A04DFB710DD0001 Tot	Aqueous	A
A04DMW712DD0001 Tot	Aqueous	A
A04AMW610D0001 Tot	Aqueous	A
A04AMW200001 Tot	Aqueous	A
A04AMW210001 Tot	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 21, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H190431
Site Name: Guterl Steel
Samples Collected: 08/18/2011
12 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04DMW710DD0001 Diss	F1H190431-001	A04DMW710DD0001 Tot	F1H190431-007
A04DFB710DD0001 Diss	F1H190431-002	A04DFB710DD0001 Tot	F1H190431-008
A04DMW712DD0001 Diss	F1H190431-003	A04DMW712DD0001 Tot	F1H190431-009
A04AMW610D0001 Diss	F1H190431-004	A04AMW610D0001 Tot	F1H190431-011
A04AMW200001 Diss	F1H190431-005	A04AMW200001 Tot	F1H190431-012
A04AMW210001 Diss	F1H190431-006	A04AMW210001 Tot	F1H190431-013

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data*

Review (OSWER 9240.1-45 and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
X		Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

The laboratory used an incorrect sample identity. The laboratory used the client sample ID A04AM2100001 Diss rather than the client ID on the chain of custody, A04AMW210001 Diss. This validation uses the client ID as reported on the chain of custody, A04AMW210001 Diss.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The uranium result for A04DFB710DD0001 Diss is qualified as estimated (J). The reported result is between the method detection limit (MDL) and RL.

All other results are accepted without qualification. All total and dissolved results agree within 20%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

The laboratory used an incorrect sample identity. The laboratory used the client sample ID A04AM2100001 Diss rather than the client ID on the chain of custody, A04AMW210001 Diss. This validation uses the client ID as reported on the chain of custody, A04AMW210001 Diss.

Sample Preservation and Holding Times

Samples were collected on 08/18/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was is 98.7%

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04DMW710DD0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1234135. The MS/MSD recoveries are 105% and 102% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04DMW710DD0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1234135. The MS/MSD RPD is 2.9%

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H190431.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04DMW710DD0001 Diss was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The uranium result for A04DFB710DD0001 Diss is qualified as estimated (J). The reported result is between the method detection limit (MDL) and RL.

All other results are accepted without qualification. All total and dissolved results agree within 20%.

Calculations

Sample A04DMW710D0001 Diss, reported in laboratory data package F1H190431, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 67.0 ug/L
MS uranium concentration: 1120 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1120 ug/L – 67.0 ug/L)/ 1000 ug/L)) * 100 = 105.3%. The laboratory reported 105.0%.

Serial Dilution:
Sample uranium concentration: 67.0 ug/L
Serial dilution concentration of the 5X dilution: 62.7 ug/L
ICP-MS Serial Dilution Percent Difference = ((67.0-62.7)/(67.0) * 100 = 6.41%. The laboratory reported 6.31%.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

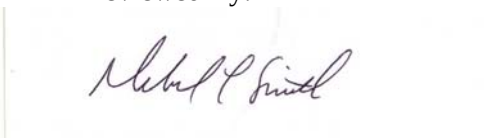
Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

295 Lower Flying Point Road Freeport ME 04032
Phone: (207) 865-1256 Fax: (207) 865-1256 Electronic Mail: KestrelET@comcast.net

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H190431

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04DMW710DD0001 Diss	Aqueous	A
A04DFB710DD0001 Diss	Aqueous	J[1]
A04DMW712DD0001 Diss	Aqueous	A
A04AMW610D0001 Diss	Aqueous	A
A04AMW200001 Diss	Aqueous	A
A04AMW210001 Diss	Aqueous	A
A04DMW710DD0001 Tot	Aqueous	A
A04DFB710DD0001 Tot	Aqueous	A
A04DMW712DD0001 Tot	Aqueous	A
A04AMW610D0001 Tot	Aqueous	A
A04AMW200001 Tot	Aqueous	A
A04AMW210001 Tot	Aqueous	A

A - Accept all data without qualification.

J[1]- The uranium result is qualified as estimated (J). The reported result is between the MDL and RL.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H230407
Site Name: Guterl Steel
Samples Collected: 08/22/2011
8 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A02MW600D0001 Diss	F1H230407-001	A02MW600D0001 Tot	F1H230407-006
A02MW50001 Diss	F1H230407-002	A02MW50001 Tot	F1H230407-007
A02MW120001 Diss	F1H230407-003	A02MW120001 Tot	F1H230407-008
A02MW30001 Diss	F1H230407-004	A02MW30001 Tot	F1H230407-009

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in

conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The laboratory used an incorrect sample identity. The laboratory used the client sample ID A02M600D0001 Tot rather than the client ID on the chain of custody, A02MW600D0001 Tot. This validation used the client ID as reported on the chain of custody, A02MW600D0001 Tot.

The laboratory condition upon receipt form noted that the sample label on the sample container for A02MW600D0001 read A05BMW600D0001. The laboratory and this validation memo used A02MW600D0001 as the sample ID.

The laboratory condition upon receipt form noted that the sample label on the sample containers for the matrix spike and matrix spike duplicate (MS/MSD) had an A03 sample prefix rather than A02. The A02 prefix is correct and the laboratory and the validation memo used the A02 prefix for the MS/MSD samples; A02MW50001MS/MSD total and dissolved fractions.

All results are reported without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

The laboratory used an incorrect sample identity. The laboratory used the client sample ID A02M600D0001 Tot rather than the client ID on the chain of custody, A02MW600D0001 Tot. This validation used the client ID as reported on the chain of custody, A02MW600D0001 Tot.

The laboratory condition upon receipt form noted that the sample label on the sample container for A02MW600D0001 read A05BMW600D0001. The laboratory and this validation memo used A02MW600D0001 as the sample ID.

The laboratory condition upon receipt form noted that the sample label on the sample containers for the matrix spike and matrix spike duplicate (MS/MSD) had an A03 sample prefix rather than A02. The A02 prefix is correct and the laboratory and the validation memo used the A02 prefix for the MS/MSD samples; A02MW50001MS/MSD total and dissolved fractions.

Sample Preservation and Holding Times

Samples were collected on 08/22/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1236047 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H240000-047B	0.015	0.032	0.059	0.961
U-235	F1H240000-047B	-0.003	0.005	0.049	-0.999
U-238	F1H240000-047B	-0.004	0.006	0.046	-1.412

MDA- Minimal Detectable Activity

Aqueous method blank results associated with preparation batch 1236152 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H240000-152B	-0.007	0.008	0.057	-1.728
U-235	F1H240000-152B	0.000	0.012	0.032	0.000
U-238	F1H240000-152B	0.010	0.036	0.077	0.534

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1236047 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 95.2% and 102% respectively. The U-234 and U-238 LCSD recoveries are 95.5% and 99.2% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1236152 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 100% and 100% respectively. The U-234 and U-238 LCSD recoveries are 104% and 120% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS/LCSD recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H230407.

No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The laboratory analyzed a LCS/LCSD pair rather than a laboratory duplicate sample for batch 1236047. Results are summarized below.

Analyte	F1H240000-047C			F1H240000-047L		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	3.11	0.416	0.044	3.12	0.411	0.051
U-235	0.164	0.085	0.047	0.237	0.100	0.045
U-238	3.47	0.449	0.038	3.36	0.434	0.051

TPU – Total Propagated Uncertainty

The laboratory analyzed a LCS/LCSD pair rather than a laboratory duplicate sample for batch 1236152. Results are summarized below.

Analyte	F1H240000-152C			F1H240000-152L		
	Result pCi/L	**TPU**	**MDA**	**Result pCi/L**	**TPU**	**MDA**
U-234	3.27	0.424	0.063	3.41	0.434	0.056
U-235	0.111	0.070	0.058	0.180	0.086	0.052
U-238	3.40	0.435	0.047	4.09	0.495	0.053

TPU – Total Propagated Uncertainty

U-235 is not present in the LCS/LCSD spike solution. The U-238 laboratory duplicate Z factor is 2.068 and the relative percent difference (RPD) is 18.2%. The QAPP RPD acceptance criteria for the laboratory duplicate is the RPD < 40%.

No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Calculations

The U-232 tracer recovery for A02MW120001 Diss (F1H230407-003) Batch 1236047

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 358
U-232 Tracer Background Counts: 0.000
U-232 Tracer net counts: 358.00
Count Time: 240 minutes
Detector Efficiency: 26.58%

U-232 Tracer recovered = (358.00)/(240)(0.2658) = 5.612 DPM
U-232 Tracer % Recovery = (5.612 DPM/7.155 DPM) * 100 = 78.44%. The laboratory reported 78.48%.

The U-234 concentration for A02MW120001 Diss (F1H230407-003) Batch 1236047

U-234 gross counts: 119
U-234 background counts: 1.000
U-234 net counts: 118
Count time: 240 minutes
Detector Efficiency: 26.58%
Tracer Recovery: 78.48%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (118.00)/(2.22)(1.000)(240)(0.2658)(0.7848) = 1.06 pCi/L. The laboratory reported 1.06 pCi/L

The U-232 tracer recovery for A02MW120001 Tot (F1H230407-008) Batch 1236152

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 355
U-232 Tracer Background Counts: 0.500
U-232 Tracer net counts: 354.50
Count Time: 240 minutes
Detector Efficiency: 27.22%

U-232 Tracer recovered = (354.50)/(240)(0.2722) = 5.426 DPM
U-232 Tracer % Recovery = (5.426 DPM/7.155 DPM) * 100 = 75.84%. The laboratory reported 75.87%.

The U-238 concentration for A02MW120001 Tot (F1H230407-008) Batch 1236152

U-238 gross counts: 158
U-238 background counts: 0.250
U-238 net counts: 157.75

Count time: 240 minutes
Detector Efficiency: 27.22%
Tracer Recovery: 75.87%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (157.75)/(2.22)(1.000)(240)(0.2722)(0.7587) = 1.43 pCi/L. The laboratory reported 1.43 pCi/L

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H230407

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A02MW600D0001 Diss	Aqueous	A
A02MW50001 Diss	Aqueous	A
A02MW120001 Diss	Aqueous	A
A02MW30001 Diss	Aqueous	A
A02MW600D0001 Tot	Aqueous	A
A02MW50001 Tot	Aqueous	A
A02MW120001 Tot	Aqueous	A
A02MW30001 Tot	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 24, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H230407
Site Name: Guterl Steel
Samples Collected: 08/22/2011
8 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A02MW600D0001 Diss	F1H230407-001	A02MW600D0001 Tot	F1H230407-006
A02MW50001 Diss	F1H230407-002	A02MW50001 Tot	F1H230407-007
A02MW120001 Diss	F1H230407-003	A02MW120001 Tot	F1H230407-008
A02MW30001 Diss	F1H230407-004	A02MW30001 Tot	F1H230407-009

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

The laboratory used an incorrect sample identity. The laboratory used the client sample ID A02M600D0001 Tot rather than the client ID on the chain of custody, A02MW600D0001 Tot. This validation used the client ID as reported on the chain of custody, A02MW600D0001 Tot.

The laboratory condition upon receipt form noted that the sample label on the sample container for A02MW600D0001 read A05BMW600D0001. The laboratory and this validation memo used A02MW600D0001 as the sample ID.

The laboratory condition upon receipt form noted that the sample label on the sample containers for the matrix spike and matrix spike duplicate (MS/MSD) had an A03 sample prefix rather than A02. The A02 prefix is correct and the laboratory and the validation memo used the A02 prefix for the MS/MSD samples; A02MW50001MS/MSD total and dissolved fractions.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All results are accepted without qualification. All total and dissolved results agree within 20%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

The laboratory used an incorrect sample identity. The laboratory used the client sample ID A02M600D0001 Tot rather than the client ID on the chain of custody, A02MW600D0001 Tot. This validation used the client ID as reported on the chain of custody, A02MW600D0001 Tot.

The laboratory condition upon receipt form noted that the sample label on the sample container for A02MW600D0001 read A05BMW600D0001. The laboratory and this validation memo used A02MW600D0001 as the sample ID.

The laboratory condition upon receipt form noted that the sample label on the sample containers for the matrix spike and matrix spike duplicate (MS/MSD) had an A03 sample prefix rather than A02. The A02 prefix is correct and the laboratory and the validation memo used the A02 prefix for the MS/MSD samples; A02MW50001MS/MSD total and dissolved fractions.

Sample Preservation and Holding Times

Samples were collected on 08/22/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection

limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was is 98.7%
No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A02MW50001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1236076. The MS/MSD recoveries are 98.4% and 98.8% respectively.

Sample A02MW50001 Tot was analyzed as the MS/MSD pair associated with preparation batch 1236076. The MS/MSD recoveries are 97.3% and 95.8% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is ≤ 30%.

Sample A02MW50001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1236076. The MS/MSD RPD is 0.4%.

Sample A02MW50001 Tot was analyzed as the MS/MSD pair associated with preparation batch 1236076. The MS/MSD RPD is 1.5%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H230407.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A02MW50001 Diss was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All results are accepted without qualification. All total and dissolved results agree within 20%.

Calculations

Sample A02MW50001 Diss, reported in laboratory data package F1H230407, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 6.2 ug/L
MS uranium concentration: 991 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((991 ug/L – 6.2 ug/L)/ 1000 ug/L)) * 100 = 98.5%. The laboratory reported 98.8%.

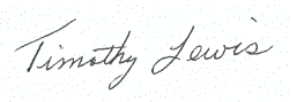
Serial Dilution:
Sample uranium concentration: 6.2 ug/L
Serial dilution concentration of the 5X dilution: 6.1 ug/L
ICP-MS Serial Dilution Percent Difference = ((6.2-6.1)/(6.2) * 100 = 1.6%. The laboratory reported 0.91%. The sample concentration is too low to evaluate the ICP-MS serial dilution results.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

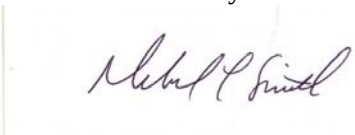
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H230407

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A02MW600D0001 Diss	Aqueous	A
A02MW50001 Diss	Aqueous	A
A02MW120001 Diss	Aqueous	A
A02MW30001 Diss	Aqueous	A
A02MW600D0001 Tot	Aqueous	A
A02MW50001 Tot	Aqueous	A
A02MW120001 Tot	Aqueous	A
A02MW30001 Tot	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 21, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H230464
Site Name: Guterl Steel
Samples Collected: 08/19/2011
12 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A03MW607D0001 Tot	F1H230464-001	A03MW607D0001 Diss	F1H230464-009
A03MW703DD0001 Tot	F1H230464-002	A03MW703DD0001 Diss	F1H230464-010
A03MW16D0001 Tot (FD)	F1H230464-003	A03MW16D0001 Diss (FD)	F1H230464-011
A02MW40001 Tot	F1H230464-004	A02MW40001 Diss	F1H230464-012
A03MW9004 Tot (FD)	F1H230464-005	A03MW9004 Diss (FD)	F1H230464-013
A04AMW701DD0001 Tot	F1H230464-006	A04AMW701DD0001 Diss	F1H230464-014

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	X	Matrix Spike Results
	X	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The laboratory used an incorrect sample ID. The laboratory used a sample ID of A03MW607D001 Tot (F1H230464-001) rather than A03MW607D0001 Tot; the sample ID on the chain of custody. The validation used the A03MW607D0001 Tot ID.

All isotopic uranium results are reported without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates were recorded for all field samples. Sampling times were not recorded for sample A03MW9004. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

The laboratory used an incorrect sample ID. The laboratory used a sample ID of A03MW607D001 Tot (F1H230464-001) rather than A03MW607D0001 Tot; the sample ID on the chain of custody. The validation used the A03MW607D0001 Tot ID.

Sample Preservation and Holding Times

Samples were collected on 08/19/2011. The condition upon receipt form indicates that all aqueous metal samples were properly preserved except for A03MW607D0001 Tot and A03MW703DD0001. The laboratory noted that these samples were received at a pH of 7. The laboratory added sufficient nitric acid to lower the pH to < 2. The pH was adjusted on 08/23/2011 and the samples were prepared for analysis on 08/26/2011.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1238042 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H260000-042B	0.007	0.027	0.060	0.493
U-235	F1H260000-042B	-0.0027	0.0055	0.050	-0.999
U-238	F1H260000-042B	0.009	0.026	0.056	0.664

MDA- Minimal Detectable Activity

Aqueous method blank results associated with preparation batch 1238069 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H260000-069B	0.021	0.029	0.045	1.452
U-235	F1H260000-069B	0.004	0.019	0.047	0.471
U-238	F1H260000-069B	0.004	0.015	0.038	0.471

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1238042 are summarized below. The laboratory did not analyze a LCSD because a MS/MSD pair was analyzed.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 97.2% and 94.4% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 75-131%.

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1238069 are summarized below. The laboratory did not analyze a LCSD because a MS/MSD pair was analyzed.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 93.8% and 99.2% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 75-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

Guterl Steel sample A03MW703DD0001 Tot (F1H230464-002) was analyzed as the batch 1238042 MS/MSD pair. All MS/MSD recoveries were within the QAPP acceptance criteria, 59-150%. U-235 is not part of the MS/MSD spike solution.

Guterl Steel sample A03MW703DD0001 Diss (F1H230464-10)) was analyzed as the batch 1238069 MS/MSD pair. All MS/MSD recoveries were within the QAPP acceptance criteria, 59-150%. U-235 is not part of the MS/MSD spike solution.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Samples A03MW16D0001Tot and A03MW9004 Tot are a field duplicate pair. Results are summarized below.

Analyte	A03MW16D0001 Tot			A03MW9004 Tot		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	8.8	1.0	0.09	8.38	0.95	0.08
U-235	0.44	0.18	0.08	0.42	0.16	0.08
U-238	9.7	1.1	0.07	8.88	0.99	0.06

TPU – Total Propagated Uncertainty

Samples A03MW16D0001Diss and A03MW9004 Diss are a field duplicate pair. Results are summarized below.

Analyte	A03MW16D0001 Diss			A03MW9004 Diss		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	8.9	1.0	0.06	9.2	1.0	0.06
U-235	0.45	0.18	0.05	0.58	0.20	0.04
U-238	10.2	1.1	0.04	10.1	1.1	0.08

TPU – Total Propagated Uncertainty

No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The MS/MSD results are evaluated as laboratory duplicate samples.
The laboratory analyzed sample A03MW703DD0001 Tot (F1H230464-2) as the laboratory MS/MSD pair for analytical batch 1238042. Results are summarized below.

Analyte	A03MW703DD0001 Tot MS			A03MW703DD0001 Tot MSD		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	3.588	0.3495	0.077	3.119	0.430	0.067
U-235	0.180	0.101	0.071	0.135	0.081	0.052
U-238	3.338	0.471	0.073	3.135	0.340	0.025

TPU – Total Propagated Uncertainty

The laboratory analyzed sample A03MW703DD0001 Diss (F1H230464-10) as the laboratory MS/MSD pair for analytical batch 1238069. Results are summarized below.

Analyte	A03MW703DD0001 Diss MS			A03MW703DD0001 Diss MSD		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	3.115	0.450	0.057	2.712	0.397	0.062
U-235	0.130	0.085	0.061	0.090	0.069	0.064
U-238	3.176	0.455	0.049	2.837	0.408	0.051

TPU – Total Propagated Uncertainty

No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks for the field samples are properly identified, well defined and adequately resolved.

No results are qualified due to spectral resolution.

Calculations

The U-232 tracer recovery for A03MW16D0001 Tot (F1H230464-003) Batch 1238042

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 234
U-232 Tracer Background Counts: 1.250
U-232 Tracer net counts: 232.75
Count Time: 240 minutes
Detector Efficiency: 26.42%

U-232 Tracer recovered = (232.75)/(240)(0.2642) = 3.671 DPM
U-232 Tracer % Recovery = (3.671 DPM/7.155 DPM) * 100 = 51.30%. The laboratory reported 51.33%.

The U-234 concentration for A03MW16D0001 Tot (F1H230464-003) Batch 1238042

U-234 gross counts: 634
U-234 background counts: 1.250
U-234 net counts: 632.75
Count time: 240 minutes
Detector Efficiency: 26.42%
Tracer Recovery: 51.33%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (632.75)/(2.22)(1.000)(240)(0.2642)(0.5130) = 8.76 pCi/L. The laboratory reported 8.77 pCi/L.

The U-232 tracer recovery for A03MW703DD0001 Diss MS (F1H230464-010S) Batch 1238069

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 334
U-232 Tracer Background Counts: 0.75
U-232 Tracer net counts: 333.25

Count Time: 240 minutes
Detector Efficiency: 28.11%

U-232 Tracer recovered = (333.25)/(240)(0.2811) = 4.940 DPM
U-232 Tracer % Recovery = (4.940 DPM/7.155 DPM) * 100 = 69.03%. The laboratory reported 69.07%.

The U-238 concentration for A03MW703DD0001 Diss MS (F1H230464-010S) Batch 1238069

U-238 gross counts: 294
U-238 background counts: 0.500
U-238 net counts: 293.50
Count time: 240 minutes
Detector Efficiency: 28.11%
Tracer Recovery: 69.07%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute
CPM = Counts/minute

U-238 Concentration: = (293.50)/(2.22)(1.000)(240)(0.2811)(0.6907) = 2.837 pCi/L. The laboratory reported 2.837 pCi/L.

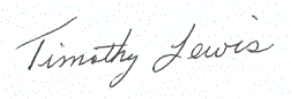
Matrix spike added: (75.26CPM/ml)(0.10 mL)(1.0 pCi/2.22 CPM)(1.000 Liters) = 3.39 pCi/L

Matrix Spike % Recovery : (Concentration measured)/(Calculated Concentration) * 100 = (2.837 pCi/L)/(3.39 pCi/L) * 100 = 83.7%. The laboratory reported the MS recovery 83.7%.

Table 1 summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

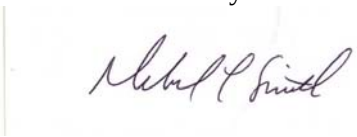
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H230464

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A03MW607D0001 Tot	Aqueous	A
A03MW703DD0001 Tot	Aqueous	A
A03MW16D0001 Tot (FD)	Aqueous	A
A02MW40001 Tot	Aqueous	A
A03MW9004 Tot (FD)	Aqueous	A
A04AMW701DD0001 Tot	Aqueous	A
A03MW607D0001 Diss	Aqueous	A
A03MW703DD0001 Diss	Aqueous	A
A03MW16D0001 Diss (FD)	Aqueous	A
A02MW40001 Diss	Aqueous	A
A03MW9004 Diss (FD)	Aqueous	A
A04AMW701DD0001 Diss	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 21, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H230464
Site Name: Guterl Steel
Samples Collected: 08/19/2011
12 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A03MW607D0001 Tot	F1H230464-001	A03MW607D0001 Diss	F1H230464-009
A03MW703DD0001 Tot	F1H230464-002	A03MW703DD0001 Diss	F1H230464-010
A03MW16D0001 Tot (FD)	F1H230464-003	A03MW16D0001 Diss (FD)	F1H230464-011
A02MW40001 Tot	F1H230464-004	A02MW40001 Diss	F1H230464-012
A03MW9004 Tot (FD)	F1H230464-005	A03MW9004 Diss (FD)	F1H230464-013
A04AMW701DD0001 Tot	F1H230464-006	A04AMW701DD0001 Diss	F1H230464-014

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data*

Review (OSWER 9240.1-45 and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	X	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
X		Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Samples were collected on 08/19/2011. The condition upon receipt form indicates that all aqueous metal samples were properly preserved except for A03MW607D0001 Tot and A03MW703DD0001. The laboratory noted that these samples were received at a pH of 7. The laboratory added sufficient nitric acid to lower the pH to < 2. The pH was adjusted on 08/23/2011 and the sample was prepared for analysis on 08/24/2011.

The laboratory used an incorrect sample ID. The laboratory used a sample ID of A03MW607D001 Tot (F1H230464-001) rather than A03MW607D0001 Tot; the sample ID on the chain of custody. The validation used the A03MW607D0001 Tot ID.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The uranium result for A03MW703DD0001 Tot is qualified as estimated (J). The reported result is between the method detection limit (MDL) and RL.

All total and dissolved results agree within 20%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates were recorded for all field samples. Sampling times were not recorded for sample A03MW9004. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

The laboratory used an incorrect sample ID. The laboratory used a sample ID of A03MW607D001 Tot (F1H230464-001) rather than A03MW607D0001 Tot; the sample ID on the chain of custody. The validation used the A03MW607D0001 Tot ID.

Sample Preservation and Holding Times

Samples were collected on 08/19/2011. The condition upon receipt form indicates that all aqueous metal samples were properly preserved except for A03MW607D0001 Tot and A03MW703DD0001. The laboratory noted that these samples were received at a pH of 7. The laboratory added sufficient nitric acid to lower the pH to < 2. The pH was adjusted on 08/23/2011 and the samples were prepared for analysis on 08/24/2011.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was 98.7%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A03MW703DD0001 Tot was analyzed as the MS/MSD pair associated with preparation batch 1236077. The MS/MSD recoveries are 109% and 109% respectively.

Sample A03MW703DD0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1236077. The MS/MSD recoveries are 103% and 101% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is ≤ 30%.

Sample A03MW703DD0001 Tot was analyzed as the MS/MSD pair associated with preparation batch 1236077. The MS/MSD relative percent difference is 0.46%.

Sample A03MW703DD0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1236077. The MS/MSD relative percent difference is 1.3%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Samples A03MW16D0001/A03MW9004 total and dissolved fractions are two field duplicate pairs. The field duplicate RPDs are less than 50%. The RPDs are 3.1% and 1.8% respectively.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10%, results are qualified as estimated (J).

Sample A03MW703DD0001 Tot was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
Uranium	0.28	1.2 U	NC	None

The uranium sample concentration is less than 50X the IDL. The concentration is too low to evaluate the serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All total and dissolved results agree within 20%.

The uranium result for A03MW703DD0001 Tot is qualified as estimated (J). The reported result is between the MDL and RL.

Calculations

Sample A03MW703DD0001 Tot, reported in laboratory data package F1H230464, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 0.28 ug/L
MS uranium concentration: 1090 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1090 ug/L – 0.28 ug/L)/ 1000 ug/L)) * 100 = 109%. The laboratory reported 109.4%.

Serial Dilution:
Sample uranium concentration: 0.28 ug/L
Serial dilution concentration of the 5X dilution: 1.2 ug/L (U)
ICP-MS Serial Dilution Percent Difference = Not Calculated. The ICP-MS serial dilution result is reported as non-detected (U) at 1.2 ug/L. The uranium IDL is 0.23 ug/L.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

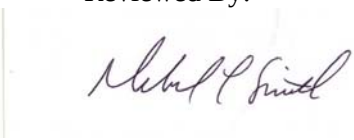
Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H230464

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A03MW607D0001 Tot	Aqueous	A
A03MW703DD0001 Tot	Aqueous	J[1]
A03MW16D0001 Tot (FD)	Aqueous	A
A02MW40001 Tot	Aqueous	A
A03MW9004 Tot (FD)	Aqueous	A
A04AMW701DD0001 Tot	Aqueous	A
A03MW607D0001 Diss	Aqueous	A
A03MW703DD0001 Diss	Aqueous	A
A03MW16D0001 Diss (FD)	Aqueous	A
A02MW40001 Diss	Aqueous	A
A03MW9004 Diss (FD)	Aqueous	A
A04AMW701DD0001 Diss	Aqueous	A

A - Accept all data without qualification.

J[1]- The uranium result is qualified as estimated (J). The reported result is between the MDL and RL.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 21, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H240450
Site Name: Guterl Steel
Samples Collected: 08/23/2011
6 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A02MW9005 Tot	F1H240450-001	A02MW9005 Diss	F1H240450-006
A02MW010001 Tot	F1H240450-002	A02MW010001 Diss	F1H240450-007
A02MW020001 Tot	F1H240450-003	A02MW020001 Diss	F1H240450-008

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in

conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	X	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

All results are reported without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/23/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1238069 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H260000-069B	0.021	0.029	0.045	1.452
U-235	F1H260000-069B	0.004	0.019	0.047	0.471
U-238	F1H260000-069B	0.004	0.015	0.038	0.471

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch

1238069 are summarized below. The laboratory did not analyze a LCSD because a MS/MSD pair was analyzed.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 93.8% and 99.2% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 75-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

Guterl Steel sample A03MW703DD0001 Diss (F1H230464-10) reported in laboratory data package F1H230464) was analyzed as the batch 1238069 MS/MSD pair. All MS/MSD recoveries were within the QAPP acceptance criteria, 59-150%. U-235 is not part of the MS/MSD spike solution.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H240450.

No results are qualified based upon the absence of field duplicate results.

Laboratory Duplicates

The laboratory analyzed sample A03MW703DD0001 Diss (F1H230464-10) reported in laboratory data package F1H230464) as the laboratory MS/MSD pair for analytical batch 1238069. Results are summarized below.

Analyte	A03MW703DD0001 Diss MS			A03MW703DD0001 Diss MSD		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	3.115	0.450	0.057	2.712	0.397	0.062
U-235	0.130	0.085	0.061	0.090	0.069	0.064
U-238	3.176	0.455	0.049	2.837	0.408	0.051

TPU – Total Propagated Uncertainty

No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks for the field samples are properly identified, well defined and adequately resolved.

No results are qualified due to spectral resolution.

Calculations

The U-232 tracer recovery for A02MW9005 Tot (F1H240450-001) Batch 1238069

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 308
U-232 Tracer Background Counts: 1.500
U-232 Tracer net counts: 306.50
Count Time: 240 minutes
Detector Efficiency: 26.47%

U-232 Tracer recovered = (306.50)/(240)(0.2647) = 4.824 DPM
U-232 Tracer % Recovery = (4.824 DPM/7.155 DPM) * 100 = 67.42%. The laboratory reported 67.46%.

The U-234 concentration for A02MW9005 Tot (F1H240450-001) Batch 1238069

U-234 gross counts: 1039
U-234 background counts: 1.750
U-234 net counts: 137.25
Count time: 240 minutes
Detector Efficiency: 26.47%
Tracer Recovery: 67.46%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (1037.25)/(2.22)(1.000)(240)(0.2647)(0.6745) = 10.90 pCi/L. The laboratory reported 10.90 pCi/L

Table 1 summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H240450

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A02MW9005 Tot	Aqueous	A
A02MW010001 Tot	Aqueous	A
A02MW020001 Tot	Aqueous	A
A02MW9005 Diss	Aqueous	A
A02MW010001 Diss	Aqueous	A
A02MW020001 Diss	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 14, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H240450
Site Name: Guterl Steel
Samples Collected: 08/23/2011
7 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A02MW9005 Tot	F1H240450-001	A02MW9005 Diss	F1H240450-005
A02MW010001 Tot	F1H240450-002	A02MW010001 Diss	F1H240450-006
A02MW020001 Tot	F1H240450-003	A02MW020001 Diss	F1H240450-007
A04BMW707DD0001	F1H240450-004		

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
X		ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

The condition upon receipt form indicates that all aqueous metal samples were properly preserved except for A04BMW707DD0001 Tot. The laboratory noted that this sample was received at an improper pH. The laboratory added sufficient nitric acid to lower the pH to < 2. The pH was adjusted on 08/24/2011 and the sample was prepared for analysis on 08/25/2011.

The ICP-MS serial dilution % difference was 20.3%. Uranium results for A02MW9005 Tot, A02MW010001 Tot, A02MW020001 Tot, A02MW9005 Diss, A02MW010001 Diss and A02MW020001 Diss are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased high. Sample A04BMW707DD0001 Tot was analyzed at a 5 X dilution. Using professional judgment the uranium result for A04BMW707DD0001 Tot was not qualified.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

Sample A04BMW707DD0001 Tot was analyzed at a 5X dilution.

All results are accepted without qualification. All total and dissolved results agree within 20%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates were recorded for all field samples. Sampling times were not recorded for samples A02MW9005 Total and Dissolved and A04BMW707DD0001. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/23/2011. The condition upon receipt form indicates that all aqueous metal samples were properly preserved except for A04BMW707DD0001 Tot. The laboratory noted that this sample was received at an improper pH. The laboratory added sufficient nitric acid to lower the pH to < 2. The pH was adjusted on 08/24/2011 and the sample was prepared for analysis on 08/25/2011.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recoveries were 102.7% and 98.0%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A02MW9005 Tot was analyzed as the MS/MSD pair associated with preparation batch 1237036. The MS/MSD recoveries are 109% and 107% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A02MW9005 Tot was analyzed as the MS/MSD pair associated with preparation batch 1237036. The MS/MSD RPD is 2.0%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H240450.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A02MW9005 Tot was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
Uranium	40.1	31.9	20.3%	J+

Uranium results for A02MW9005 Tot, A02MW010001 Tot, A02MW020001 Tot, A02MW9005 Diss, A02MW010001 Diss and A02MW020001 Diss are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased high. Sample A04BMW707DD0001 Tot was analyzed at a 5 X dilution. Using professional judgment the uranium result for A04BMW707DD0001 Tot was not qualified.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All total and dissolved results agree within 20%.

Sample A04BMW707DD0001 Tot was analyzed at a 5X dilution.

Calculations

Sample A02MW9005 Tot, reported in laboratory data package F1H240450, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 40.1 ug/L
MS uranium concentration: 1130 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1130 ug/L – 40.1 ug/L)/ 1000 ug/L)) * 100 = 109%. The laboratory reported 109.2%.

Serial Dilution:
Sample uranium concentration: 40.1 ug/L
Serial dilution concentration of the 5X dilution: 31.9 ug/L
ICP-MS Serial Dilution Percent Difference = ((40.1-31.9)/(40.1) * 100 = 20.4%. The laboratory reported 20.3%. The uranium IDL is 0.23 ug/L.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H240450

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A02MW9005 Tot	Aqueous	J[1]
A02MW010001 Tot	Aqueous	J[1]
A02MW020001 Tot	Aqueous	J[1]
A04BMW707DD0001	Aqueous	A
A02MW9005 Diss	Aqueous	J[1]
A02MW010001 Diss	Aqueous	J[1]
A02MW020001 Diss	Aqueous	J[1]

A - Accept all data without qualification.

J[1]- The uranium result is qualified as estimated (J). The ICP-MS serial dilution %D exceeds 10%. The reported result may be biased high.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 19, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1I010435
Site Name: Guterl Steel
Samples Collected: 08/31/2011
2 Aqueous Samples and 2 Solid Samples

Isotopic Thorium and Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
AQUEOUS IDW	F1I010435-001	NON-AQUEOUS IDW	F1I010435-002
AQUEOUS IDW DUP	F1I010435-001X	NON-AQUEOUS IDW DUP	F1I010435-002X

DUP- Laboratory Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium and isotopic thorium analytical data from aqueous and solid samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy (EML A-01-R-MOD), according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are Th-228, Th-230, Th-232, U-234, U-235 and U-238. The solid sample results are reported on a dry weight basis.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in

conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
X		Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the isotopic thorium and isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Using professional judgment the Th-230 results for AQUEOUS IDW and AQUEOUS IDW DUP are qualified as estimated (J). These Th-230 results are summarized below. Statistically these results are equal to the positive method blank result. Both the positive sample results and positive method blank results are less than the laboratory reporting limit 0.10 pCi/L.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/31/2011. The condition upon receipt form indicates that aqueous radionuclide samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Solid method blank results associated with preparation batches 1249210 and 1249211 are summarized below.

Radionuclide	Sample ID	Conc pCi/g	Total Uncertainty pCi/g	MDC pCi/g	Z-Factor
Th-228	F1I060000-210B	0.024	0.021	0.025	2.2251
Th-230	F1I060000-210B	0.021	0.020	0.023	2.0952
Th-232	F1I060000-210B	-0.001	0.002	0.018	-0.9991
U-234	F1I060000-211B	-0.0009	0.0086	0.026	-0.2182
U-235	F1I060000-211B	-0.0023	0.0033	0.025	-1.4117
U-238	F1I060000-211B	0.008	0.011	0.010	1.4117

MDC- Minimal Detectable Concentration

All method blank results are reported as non-detected (U).

Aqueous method blank results associated with preparation batches 1251056 and 1251057 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDC pCi/L	Z-Factor
Th-228	F1I080000-056B	0.012	0.023	0.041	1.0399
Th-230	F1I080000-056B	0.085	0.053	0.036	3.2027
Th-232	F1I080000-056B	-0.0020	0.0039	0.036	-0.9991
U-234	F1I080000-057B	0.058	0.050	0.059	2.3300
U-235	F1I080000-057B	-0.0053	0.0076	0.057	-1.4117
U-238	F1I080000-057B	0.017	0.024	0.023	1.4117

MDC- Minimal Detectable Concentration

Using professional judgment the Th-230 results for AQUEOUS IDW and AQUEOUS IDW DUP are qualified as estimated (J). These Th-230 results are summarized below

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDC pCi/L
Th-230	AQUEOUS IDW	0.077	0.050	0.036
Th-230	AQUEOUS IDW DUP	0.098	0.064	0.045

Statistically these results are equal to the positive method blank result. Both the positive sample results and positive method blank results are less than the laboratory reporting limit 0.10 pCi/L.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batches 1249210, 1249211, 1251056 and 1251057 are summarized below. The laboratory did not analyze a LCSD. The laboratory did analyze a laboratory duplicate pair for each isotope in each matrix.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

All LCS recoveries are within the QAPP acceptance criteria and the laboratory derived acceptance criteria. U-235, Th-228 and Th-232 are not LCS spiked isotopes.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No MS/MSDs were analyzed. The laboratory analyzed a LCS and laboratory duplicate samples for each sample matrix.

No results are qualified due to the absence of MS/MSD results.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1I010435.

No results are qualified based upon the absence of field duplicate results.

Laboratory Duplicates

The laboratory analyzed aqueous sample AQUEOUS IDW (F1I010435-001) as the laboratory duplicate pair for analytical batches 1251056 and 1251057. Results are summarized below.

Analyte	AQUEOUS IDW			AQUEOUS IDW DUP		
	Result pCi/L	TPU	MDC	Result pCi/L	TPU	MDC
Th-228	0.022 U	0.028	0.036	0.037 U	0.040	0.045
Th-230	0.077 J	0.050	0.036	0.098 J	0.064	0.045
Th-232	0.028 U	0.032	0.039	0.017 U	0.029	0.045
U-234	0.102	0.062	0.054	0.093	0.063	0.052
U-235	0.011 U	0.021	0.029	0.003 U	0.027	0.072
U-238	0.082	0.054	0.038	0.088	0.063	0.062

TPU – Total Propagated Uncertainty

No aqueous results are qualified based upon the laboratory duplicate precision.

The laboratory analyzed solid sample NON-AQUEOUS IDW (F1I010435-002) as the laboratory duplicate pair for analytical batches 1249210 and 1249211. Results are summarized below.

Analyte	NON-AQUEOUS IDW			NON-AQUEOUS IDW DUP		
	Result pCi/g	TPU	MDC	Result pCi/g	TPU	MDC
Th-228	0.355	0.105	0.048	0.318	0.096	0.048
Th-230	0.400	0.111	0.030	0.379	0.130	0.029
Th-232	0.259	0.088	0.032	0.244	0.081	0.029
U-234	0.337	0.079	0.021	0.303	0.073	0.017
U-235	0.009 U	0.014	0.023	0.014	0.016	0.013
U-238	0.322	0.077	0.011	0.417	0.087	0.010

TPU – Total Propagated Uncertainty

No solid results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks for the field samples are properly identified, well defined and adequately resolved.

No results are qualified due to spectral resolution.

Calculations

The U-232 tracer recovery for NON-AQUEOUS IDW (F1I010435-002) Batch 1249211

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 405
U-232 Tracer Background Counts: 0.5000
U-232 Tracer net counts: 404.50
Count Time: 240 minutes
Detector Efficiency: 28.11%

U-232 Tracer recovered = (404.50)/(240)(0.0.2811) = 5.995 DPM

U-232 Tracer % Recovery = (5.995 DPM/7.155 DPM) * 100 = 83.8%. The laboratory reported 83.9%.

The Th-229 tracer recovery for AQUEOUS IDW (F1I010435-001) Batch 1251056

Th-229 Tracer concentration: 63.40 DPM/mL (DPM = disintegrations/minute)
Th-229 Tracer volume: 0.10 mL
Th-229 Tracer added: 6.340 DPM
Th-229 Tracer Gross Counts: 363
Th-229 Tracer Background Counts: 0.000
Th-229 Tracer net counts: 363
Count Time: 240 minutes
Detector Efficiency: 27.43%

Th-229 Tracer recovered = (363)/(240)(0.2743) = 5.514 DPM
Th-229 Tracer % Recovery = (5.514 DPM/6.34 DPM) * 100 = 87.0%. The laboratory reported 87.3%.

The U-234 concentration for NON-AQUEOUS IDW (F1I010435-002) Batch 1249211

U-234 gross counts: 85
U-234 background counts: 0.500
U-234 net counts: 84.5
Count time: 240 minutes
Detector Efficiency: 28.11%
Tracer Recovery: 83.87%
Sample Mass: 2.000 grams
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (84.5)/(2.22)(2.000)(240)(0.2811)(0.8378) = 0.337 pCi/g. The laboratory reported 0.337 pCi/g

The Th-230 concentration for LCS (F1I080000-056C) Batch 1251056

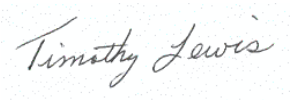
Th-230 gross counts: 292
Th-230 background counts: 0.500
Th-230 net counts: 291.50
Count time: 240 minutes
Detector Efficiency: 27.61%
Tracer Recovery: 89.11%
Sample Volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

Th-230 Concentration: = (291.5)/(2.22)(1.000)(240)(0.2761)(0.89115) = 2.224 pCi/L. The laboratory reported 2.23 pCi/L. The laboratory spike concentration added is 2.37 pCi/L. The LCS calculated recovery is (2.22/2.37)* 100 = 93.6%. The laboratory reported the LCS Th-230 recovery at 94%.

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 Thorium and Uranium Isotope results

Guterl Specialty Steel
F1I010435

Table 1 – Isotopic Thorium and Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
AQUEOUS IDW	Aqueous	J[1]
AQUEOUS IDW DUP	Aqueous	J[1]
NON-AQUEOUS IDW	Solid	A
NON-AQUEOUS IDW DUP	Solid	A

A - Accept all data without qualification.

J[1] - The Th-230 result is qualified as estimated (J) due to positive Th-230 method blank results.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 18, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1I010435
Site Name: Guterl Steel
Samples Collected: 08/31/2011
3 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
AQUEOUS IDW	F1I010435-001	A04BMW707DD0001 Diss	F1I010435-004
A04BMW707DD0001 Tot	F1I010435-003		

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
X		Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The uranium result for AQUEOUS IDW is qualified as estimated (J). The reported result is between the method detection limit (MDL) and RL.

All total and dissolved results agree within 20%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

The COC noted that the A04BMW707DD0001 Tot sample bottle listed only total metals for analysis. This bottle was also logged in for total uranium.

Sample Preservation and Holding Times

Samples were collected on 08/31/2011. The condition upon receipt form indicates that all aqueous metal samples were properly preserved.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was 97.0%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample AQUEOUS IDW was analyzed as the MS/MSD pair associated with preparation batch 1249123. The MS/MSD recoveries are 106% and 107% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample AQUEOUS IDW was analyzed as the MS/MSD pair associated with preparation batch 1249123. The MS/MSD relative percent difference is 1.0%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1I010435.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample AQUEOUS IDW was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
Uranium	0.28	1.2 U	NC	None

The uranium sample concentration is less than 50X the IDL. The concentration is too low to evaluate the serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The uranium result for AQUEOUS IDW is qualified as estimated (J). The reported result is between the method detection limit (MDL) and RL.

All total and dissolved results agree within 20%.

Calculations

Sample AQUEOUS IDW was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 0.28 ug/L
MS uranium concentration: 1060 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1060 ug/L – 0.28 ug/L)/ 1000 ug/L)) * 100 = 106%. The laboratory reported 105.6%.

Serial Dilution:
Sample uranium concentration: 0.28 ug/L
Serial dilution concentration of the 5X dilution: 1.2 ug/L (U)
ICP-MS Serial Dilution Percent Difference = Not Calculated. The ICP-MS serial dilution result is reported as non-detected (U) at 1.2 ug/L. The uranium IDL is 0.23 ug/L.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1I010435

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
AQUEOUS IDW	Aqueous	J[1]
A04BMW707DD0001 Tot	Aqueous	A
A04BMW707DD0001 Diss	Aqueous	A

A - Accept all data without qualification.

J[1]- The uranium result is qualified as estimated (J). The reported result is between the MDL and RL.

APPENDIX I

IDW Bill of Lading
(Provided on Same CD as Appendix A)

THIS MEMORANDUM is an acknowledgement that a bill of lading has been issued and is not the Original Bill of Lading, not a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper's No. _____

(Carrier) Hazmat Environmental SCAC. _____ Carrier's No. _____

Received, subject to the classifications and tariffs in effect on the date of this Bill of Lading:

at _____, date _____ from _____

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own road or its own water line, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained (as specified in Appendix B to Part 1035) which are hereby agreed to by the shipper and accepted for himself and his assigns.

TO: (Mail or street address of consignee for purposes of notification only.)	**FROM:**
Consignee: US Ecology Texas	Shipper: USACE Buffalo District
Street: 3.5 miles South on Petronila Road	Street: 695 Ohio Street
Destination: Robstown, TX Zip: 78380	Origin: Lockport, NY Zip: 14094
Route:	

Delivering Carrier	Trailer Initial/Number	U.S. DOT Hazmat Reg. Number

No. of packages	HM	Description of articles, special marks, and exceptions	Hazard Class	I.D. Number	Packing Group	*Weight (subject to correction)	Class or rate	Labels required (or exemption)	Check column
39		Non-Hazardous IDW Soils Approval #: 090074405				15,600 lbs		OUTS3181	
23-25	PG	Non-Hazardous IDW Waters Approval #: 090074406				9,200 lbs		OUTS1191	

Remit C.O.D. to:
Address:
City: State: Zip:

COD AMT: $

Charges Advanced $ _____

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of consignor)

C. O. D. FEE: Prepaid ☐ Collect ☐ $

FREIGHT CHARGES ☐ Prepaid ☐ Collect

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight". Note. – where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Per _____

PLACARDS REQUIRED

PLACARDS SUPPLIED ☐ YES ☐ NO - FURNISHED BY CARRIER

DRIVER'S SIGNATURE:

SPECIAL INSTRUCTIONS:

SHIPPER: Kevin Cronin
PER: KEVIN CRONIN - SHAW E&I ON BEHALF OF USACE DATE: 12/16/11

CARRIER: HAZMAT
PER: Greg Norden DATE: 12-16-11

EMERGENCY RESPONSE TELEPHONE NUMBER: (419) 348-4621 Shaw E&I Greg Norden
Monitored at all times the Hazardous Material is in transportation including storage incidental to transportation (§172.604).

Permanent post office address of shipper

29-BLS-C3 (Rev. 6/95)

HazMat

ENVIRONMENTAL GROUP, INC
60 Commerce Drive, Buffalo, NY 14218
www.hazmatinc.com
FAX (716) 827-7217
(716) 827-7200

HAZMAT

NYDEC #9A-278
EPA ID# NYD980769947

DATE / /

511650

PICK UP

SHIPPER

NAME: ATI ALCVAC
STREET: 695 OHIO ST.
CITY: LOCKPORT, NEW YORK
STATE / ZIP CODE
CONTACT NAME: KEVIN CRONIN
PHONE: 716-472-0434
SCHEDULED TIME: KEVIN W. HER

DELIVERY

CONSIGNEE

NAME: US ECOLOGY
STREET: 3277 COUNTY RD. 69
CITY: ROBSTOWN, TEXAS
STATE / ZIP CODE
CONTACT NAME
PHONE
12-19-11 15:00

ADDITIONAL INFORMATION / EQUIPMENT DAMAGE
If damaged at pickup site, did you send in Equipment Damage Report (EDR) via Qualcomm? Y N Explain damage below.

K

Pursuant to 6NYCRR 372.2 (b) (2) (iii) HazMat certifies that it is Authorized to deliver this shipment of manifested waste to the TSDF listed on this Bill of Lading. Shipment valuation limits apply from HazMat Rules Publication 101, Item 848.

ADDITIONAL INFORMATION / EQUIPMENT DAMAGE
If damaged at delivery site, did you send in Equipment Damage Report (EDR) via Qualcomm? Y N Explain damage below.

PURCHASE ORDER NO.	WORK ORDER NUMBER	MANIFEST NUMBER	H.M. NUMBER
			214394

LOAD NUMBER	TRACTOR	TRAILER	ROLL OFF BOX	DRIVER NUMBER	DRIVER'S NAME
	435	B-140		2070	GARY A. KING

EQUIPMENT	MATERIAL DESCRIPTION/MANIFEST NUMBER	QUANTITY
EQUIPMENT TYPE V UNIT# DROPPED UNIT# PICKED UP CONDITION REPORT 6	NON-HAZ	64 PM

Product unloading station and/or tank approved by:

CONSIGNEE'S SIGNATURE

Compressor used YES ____ NO ____
In-Transit Heat used: YES ____ NO ____
Analysis/C of A: YES ____ NO ____

PICK UP

PICK UP DATE 12-16-11
ARRIVAL TIME 0700 AM/PM RELEASE TIME ____ AM/PM
DAY #2 DATE ____
ARRIVAL TIME ____ AM/PM RELEASE TIME ____ AM/PM

TRAILER EMPTY UPON ARRIVAL ☐ YES
(if not, explain below—)
DIP MEASUREMENT (Tankers Only) ____ INCHES
COMMENTS: (EXPLAIN ALL DELAYS) ____

HAZMAT MATERIALS USED (ex. overpacks, etc.): ☐ YES ☐ NO
IF YES EXPLAIN:

I, THE UNDERSIGNED, CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND COMPLETE.

SHIPPER'S SIGNATURE Kevin Cronin **Date** 12/16/11
KEVIN CRONIN - SIGNED ON BEHALF OF USAGE

DELIVERY

DRIVER ____ DAY #1 DATE ____
ARRIVAL TIME ____ AM/PM RELEASE TIME ____ AM/PM
DAY #2 DATE ____ ARRIVAL TIME ____ AM/PM RELEASE TIME ____ AM/PM
DAY #3 DATE ____ ARRIVAL TIME ____ AM/PM RELEASE TIME ____ AM/PM

TRAILER CLEAN AND EMPTY UPON DEPARTURE ☐ YES ☐ NO
(if not, explain below—)
COMMENTS: (Explain all delays or discrepancies)) ____

IF YES EXPLAIN:

I, THE UNDERSIGNED, CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND COMPLETE.

CONSIGNEE'S SIGNATURE **Date**

HAZMAT BILL OF LADING GENERATOR COPY

APPENDIX J

Geotechnical Report
(Provided on Same CD as Appendix A)

Shaw Environmental & Infrastructure, Inc.

Geotechnical Laboratory
304 Directors Drive
Knoxville TN 37923
(865) 690-3211

CERTIFICATE OF ANALYSIS

Karl Van Keuren
Shaw Environmental & Infrastructure
5050 Section Ave
Cincinnati, OH 45212

September 21, 2011

This is the Certificate of Analysis for the following samples:

Shaw Project ID:	**GUTERL STEEL**
Shaw Project Number:	**140416**
Date Received by Lab:	August 18, 2011
Number of Samples:	Eight (8)
Sample Type:	Soil

I. Introduction/Case Narrative

Eight (8) soil samples were received by the Shaw Geotechnical Laboratory on August 18, 2011. All samples were submitted for analysis of density by ASTM D 2937, specific gravity by AASHTO T-100, porosity by EM-1110-2-1906, field moisture capacity by ASTM D425, total uranium by SW-846 Method 6020, and 24-h batch-type Kd by modified ASTM D4646.

All methods were performed following method specifications. Twenty-four-hour nonequilibrium desorption coefficients were calculated using a modified ASTM D4646. The method was modified to determine soil desorption using SPLP (east) fluid as defined in SW-846 Method 1312 which was then air saturated. The oxidation-reduction potential of the blank and each sample were measured using "Standard Methods for the Examination of Water and Wastewater" Method 2580 before and after extraction to determine if the system remained oxidative during the leaching process. Uranium concentrations were measured in the soil before extraction and in the leaching solutes after extraction using SW-846 Method 6020. The uranium concentrations in the 24-h solutes for sample 702 DD soil and its duplicates were found at concentrations between the method detection limit and the lowest standard and therefore the Kd for this sample has been estimated.

Please see Appendix A, Sample Number Cross Reference List; Appendix B, Data Results; Appendix C, Chain-of-Custody/Sample Receipt Records.

Reviewed and Approved:

R. Gregory Bennett
Geotechnical Laboratory Manager, Technology Applications Group

Shaw
Geotechnical Laboratory
Knoxville,TN (865) 690-3211

II. Analytical Results/Methodology

REFERENCES: United Nations, *Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria*, third ed. New York, 1999. United States Army Corps of Engineers (USACE), Engineer Manual 1110-2-1906, *Laboratory Soils Testing*, appendix II, 1970; United States Environmental Protection Agency, SW-846, *Test Methods for Examining Solid Waste, hysical/Chemical Methods*, 3rd ed., Nov 1986 (EPA SW-846). Annual Book of ASTM Standards, Section 4, Construction, Volume 04.08, *Soil and Rock (I)*, and Volume 04.09, *Soil and Rock (II)*, 2009. *Standard Method for the Examination of Water and Wastewaster*, 18th ed. American Public Health Association 1992. Shaw Environmental and Infrastructure, Standard Operating Procedures.

Bulk Density……..	**ASTM D 2937**
Moisture Content of Soil and Rock…….	**ASTM D 2216**
Phase Relations in Soils (porosity)…..…….	**EM-1110-2-1906 Appx II**
Specific Gravity…….	**AASHTO T-100**
Centrifuge Moisture Equivalent……..	**ASTM D 425**
Total Uranium…….	**SW-846 Method 6020**
24-h Batch-Type Measurement of Contaminate Sorption (Kd)……	**Mod. ASTM D 4646**
Oxidation Reduction Potential…….	**SM 2580**
pH…….	**SW-846 Method 9045**

III. Quality Control

Quality control checks such as duplicates and spikes (QC samples), are not normally applicable to geotechnical testing. This is due largely to the inability of obtaining samples with known characteristics, the heterogeneous nature of the samples, and the inherent quality control procedures built into the analytical method.

QC measures to ensure accuracy and precision of test results include the following:

- 100% verification of all numerical results - raw data entries, transcriptions and calculations entered by lab technicians are checked, recalculated and verified. Most data calculations are performed by computer programs.

- Data validation through test reasonableness - summaries of all test results for individual reports are reviewed to determine the overall reasonableness of data and to determine the presence of any data that may be considered outliers.

- Quality control procedures are built into most standardized geotechnical procedures. For example, liquid limit and plastic limit analyses call for re-analyses and specify acceptance criteria.

Shaw
Geotechnical Laboratory
Knoxville,TN (865) 690-3211

- Routine instrument calibration - instruments, gauges and equipment used in testing are calibrated on a routine basis. All instrument calibration follows ASTM or manufacturer guidelines.

- Maintenance of all past calibration records - calibration records and certification documents of all instruments, gauges and equipment are updated routinely and maintained in the Quality Control Coordinators Quality/Operations files.

- Certified and trained personnel - all technicians are trained in the application of standard laboratory procedures for geotechnical analyses as well as the quality assurance measures implemented by Shaw.

- Quantitative analyses frequently used in geotechnical/physical testing programs do not use QC tools common to wet chemistry or radiochemistry laboratories. Measures not employed in the analysis of samples reported in this report include: laboratory control samples (LCS), blanks, matrix spikes (MS), duplicate analyses, dilutions, digestions, correction factors, surrogate sample analyses, detection limit determinations, control charts, and/or tentatively identified compounds (TICs).

- Kd extractions and soluble uranium concentrations were determined in triplicate per the method. Percent relative standard deviations (RSD) were calculated for each sample. All of the RSDs for these samples were within laboratory limits of ± 20 percent.

IV. Data Qualification

The uranium concentrations in the 24-h solutes for the Kd analysis of sample 702 DD soil and its duplicates were found at concentrations between the method detection limit and the lowest standard and are considered to be estimated values as well as the final Kd value for this sample.

Appendix A
Sample Cross-Reference List

Report Number: GUTS0911100
Karl Van Kueren
Client: Shaw Environmental & Infrastructure
Shaw Project Name: Guterl Steel
Shaw Project No. 140416

Shaw
Geotechnical Laboratory
Knoxville,TN (865) 690-3211

SAMPLE NUMBER CROSS-REFERENCE LIST

Client Transfer Record #: 192209

LAB SAMPLE NO.	CLIENT SAMPLE NO.	MATRIX
SEK 6156	701 DD Soil	Soil
SEK 6157	702 DD Soil	Soil
SEK 6158	703 DD Soil	Soil
SEK 6159	704 DD Soil	Soil
SEK 6160	706 DD Soil	Soil
SEK 6161	707 DD Soil	Soil
SEK 6162	708 DD Soil	Soil
SEK 6163	709 DD Soil	Soil

Appendix B
Data Results

Report Number: GUTS0911100
Karl Van Kueren
Client: Shaw Environmental & Infrastructure
Shaw Project Name: Guterl Steel
Shaw Project No. 140416

Shaw
Geotechnical Laboratory
Knoxville,TN (865) 690-3211

BULK DENSITY/DRY DENSITY
ASTM D 2937

PROJECT NAME: **Guterl Steel**

PROJECT NUMBER: **140416.09020200**

LAB SAMPLE NUMBER	CLIENT SAMPLE NUMBER	AVERAGE LENGTH, inches	AVERAGE DIAMETER, inches*	WET WEIGHT, grams	MOISTURE CONTENT, %	BULK DENSITY, pcf	DRY DENSITY, pcf
SEK 6156	701 DD 5-7'	15.5000	2.2537	1903.09	13.7	117.3	103.1
SEK 6157	702 DD 2-4'	16.3958	2.2470	1728.67	10.1	101.3	92.0
SEK 6158	703 DD 0-2'	11.5833	2.2480	1397.11	21.1	115.8	95.6
SEK 6159	704 DD 0-2'	10.7917	2.2467	989.28	9.4	88.1	80.6
SEK 6160	706 DD ~4.5'	8.3958	2.2570	1144.52	14.4	129.8	113.5
SEK 6161	707 DD 0.5-2.5	8.8333	2.2403	1059.85	16.9	116.0	99.2
SEK 6162	708 DD 0-2'	13.2500	2.2120	1401.69	12.5	104.9	93.3
SEK 6163	709 DD 0-2'	5.8208	2.2403	464.73	19.2	77.2	64.7

Moisture content calculated by ASTM D 2216 based on sample dry weight.

Bulk density is the weight of wet sample divided by the volume of the wet sample (as-received).

Dry density is the weight of the dry sample solids divided by the volume of the original sample.

Report Number: GUTS0911100
Karl Van Kueren
Client: Shaw Environmental & Infrastructure
Shaw Project Name: Guterl Steel
Shaw Project No. 140416

Shaw
Geotechnical Laboratory
Knoxville,TN (865) 690-3211

MOISTURE CONTENT OF -#10 SIEVED MATERIAL ASTM D 2216

PROJECT NAME: **Guterl Steel**

PROJECT NUMBER: **140416.09020200**

		% Moistures for minus #10 sieve alliquots		
LAB SAMPLE NO.	CLIENT SAMPLE NO.	MOISTURE, % ASTM D 2216	MOISTURE , % SW846	SOLIDS, % SW846
SEK 6156	701 DD (-10)	16.71	14.32	85.68
SEK 6157	702 DD (-10)	13.67	12.02	87.98
SEK 6158	703 DD (-10)	23.50	19.03	80.97
SEK 6159	704 DD (-10)	14.10	12.36	87.64
SEK 6160	705 DD (-10)	15.69	13.56	86.44
SEK 6161	706 DD (-10)	11.56	10.36	89.64
SEK 6162	707 DD (-10)	17.95	15.22	84.78
SEK 6163	708 DD (-10)	18.40	15.54	84.46

ASTM D 2216 results are based on dry sample weight.
SW846 results are based on wet sample weight.
Solids content is determined by subtracting the SW846 moisture (%) from 100.

Report Number: GUTS0911100
Karl Van Kueren
Client: Shaw Environmental & Infrastructure
Shaw Project Name: Guterl Steel
Shaw Project No. 140416

Shaw
Geotechnical Laboratory
Knoxville,TN (865) 690-3211

PHASE RELATIONS IN SOILS
EM-1110-2-1906, APPENDIX II

PROJECT NAME: **Guterl Steel**

PROJECT NUMBER: **140416.09020200**

LAB SAMPLE NUMBER	CLIENT SAMPLE NUMBER	SPECIFIC GRAVITY	EFFECTIVE POROSITY, %	PORE VOLUME, cc	VOID RATIO:	DEGREE OF SATURATION, %
SEK 6156	701 DD 5-7'	2.9234	43.49	440.69	0.77	52.05
SEK 6157	702 DD 2-4'	2.7508	46.42	494.62	0.87	32.03
SEK 6158	703 DD 0-2'	2.7239	43.85	329.96	0.78	73.87
SEK 6159	704 DD 0-2'	2.8257	54.34	380.94	1.19	22.24
SEK 6160	706 DD ~4.5'	2.9566	38.53	212.11	0.63	67.98
SEK 6161	707 DD 0.5-2.5'	2.6897	40.94	233.62	0.69	65.68
SEK 6162	708 DD 0-2'	2.6717	44.09	367.93	0.79	42.24
SEK 6163	709 DD 0-2'	2.5954	60.05	225.79	1.50	33.18

Void ratio is the ratio of the volume of voids to the volume of dry solids.

Effective porosity is the ratio of the volume of voids to the total sample volume. Effective porosity includes any voids contained within, and isolated in, solid particles.

Specific gravity is the ratio of the wt. of a volume of sample to the wt. of an equal volume of water.

Degree of saturation is the percentage of void spaces filled with water.

Shaw
Geotechnical Laboratory
Knoxville,TN (865) 690-3211

SPECIFIC GRAVITY
AASHTO T-100

PROJECT NAME: **Guterl Steel**

PROJECT NUMBER: **140406.090202**

LAB SAMPLE NO.	CLIENT SAMPLE NO.	SPECIFIC GRAVITY
SEK 6156	701 DD SOIL	2.9234
SEK 6157	702 DD SOIL	2.7508
SEK 6158	703 DD SOIL	2.7239
SEK 6159	704 DD SOIL	2.8257
SEK 6160	706 DD SOIL	2.9566
SEK 6161	707 DD SOIL	2.6897
SEK 6162	708 DD SOIL	2.6717
SEK 6163	709 DD SOIL	2.5954

Shaw
Geotechnical Laboratory
Knoxville,TN (865) 690-3211

CENTRIFUGE MOISTURE EQUIVALENT ASTM D 425

PROJECT NAME
Guterl Steel

PROJECT NUMBER
140416.09090200

LAB SAMPLE NO.	CLIENT SAMPLE NO.	MOISTURE, % ASTM D 2216	CENTRIFUGE MOISTURE EQUIVALEVT, % ASTM D 425
SEK 6156	701 DD 5-7'	16.6	
SEK 6156	701 DD 5-7'	17.4	**17**
SEK 6157	702 DD 2-4'	12.1	
SEK 6157	702 DD 2-4'	12.0	**12**
SEK 6158	703 DD 4-5'	15.2	
SEK 6158	703 DD 4-5'	16.9	**16**
SEK 6159	704 DD 0-2'	19.9	
SEK 6159	704 DD 0-2'	20.4	**20**
SEK 6160	706 DD 4-5'	15.6	
SEK 6160	706 DD 4-5'	16.3	**16**
SEK 6161	707 DD 0.5-2.5'	15.8	
SEK 6161	707 DD 0.5-2.5'	15.7	**16**
SEK 6162	708 DD 0-2'	17.3	
SEK 6162	708 DD 0-2'	17.5	**17**
SEK 6163	709 DD 0-2'	32.4	
SEK 6163	709 DD 0-2'	31.8	**32**

Report Number: GUTS0911100
Karl Van Kueren
Client: Shaw Environmental & Infrastructure
Shaw Project Name: Guterl Steel
Shaw Project No. 140416

Shaw
Geotechnical Laboratory
Knoxville,TN (865) 690-3211

Total Uranium
SW-846 Method 6020

PROJECT NAME: **GUTERL STEEL** PROJECT NUMBER: **140416.09020200**

Lab Sample No.	Client sample	Total Uranium (wet Wt.) Conc. [ug/Kg]	Solids Content %	Total Uranium (dry Wt.) Conc. [mg/Kg]
SEK 6156	701 DD Soil	19469	85.7	0.2
SEK 6157	702 DD Soil	1412	88.0	0.02
SEK 6158	703 DD Soil	604	81.0	0.01
SEK 6159	704 DD Soil	5011	87.6	0.06
SEK 6160	706 DD Soil	2825	86.4	0.03
SEK 6161	707 DD Soil	2287	89.6	0.03
SEK 6162	708 DD Soil	6062	84.8	0.07
SEK 6163	709 DD Soil	1657	84.5	0.02

Sample Name	Type	Analyzed Conc. [ug/Kg]	Spike Value (ug/Kg)	Recovery %
PBLK I1505	QC	<71.4	-	-
PLCS 1505	QC	13171	12860	102

Shaw
Geotechnical Laboratory
Knoxville,TN (865) 690-3211

24-h BATCH-TYPE CONTAMINANT SORPTION MODIFIED ASTM METHOD D 4646[1]

PROJECT NAME: GUTERL STEEL PROJECT NUMBER: 140416.09020200

CONSTITUENT OF CONCERN (COC): URANIUM

SHAW LAB SAMPLE NUMBER	CLIENT SAMPLE NUMBER	WEIGHT SAMPLE, g	VOLUME SOLUTE, mL	SOIL COC CONC. µg/g	FINAL SOLUTE CONC. µg/mL	Kd[2] mL/g	TEMP. °C	RSD[3] %
SEK 6156	701 DD Soil	24.5	500	22.7	0.00706	3.19E+03	23	
SEK 6156DUP.	701 DD Soil	24.5	500	22.7	0.00658	3.43E+03	23	
SEK 6156TRP.	701 DD Soil	24.5	500	22.7	0.00677	3.33E+03	23	3.55
SEK 6157	702 DD Soil	24.7	500	1.60	0.0000200	8.00E+04	23	
SEK 6157DUP.	702 DD Soil	24.7	500	1.60	0.0000160	1.00E+05	23	
SEK 6157TRP.	702 DD Soil	24.7	500	1.60	0.0000150	1.07E+05	23	14.53
SEK 6158	703 DD Soil	24.7	500	0.75	0.000477	1.55E+03	23	
SEK 6158DUP.	703 DD Soil	24.7	500	0.75	0.000477	1.55E+03	23	
SEK 6158TRP.	703 DD Soil	24.7	500	0.75	0.000470	1.58E+03	23	0.87
SEK 5159	704 DD Soil	24.5	500	5.72	0.00177	3.21E+03	23	
SEK 5159DUP.	704 DD Soil	24.5	500	5.72	0.00178	3.19E+03	23	
SEK 5159TRP.	704 DD Soil	24.5	500	5.72	0.00177	3.21E+03	23	0.33
SEK 5160	706 DD Soil	24.4	500	3.27	0.00139	2.33E+03	23	
SEK 5160DUP.	706 DD Soil	24.4	500	3.27	0.00142	2.28E+03	23	
SEK 5160TRP.	706 DD Soil	24.4	500	3.27	0.00137	2.37E+03	23	1.82
SEK 6161	707 DD Soil	24.6	500	2.55	0.00237	1.06E+03	23	
SEK 6161DUP.	707 DD Soil	24.6	500	2.55	0.00227	1.10E+03	23	
SEK 6161TRP.	707 DD Soil	24.6	500	2.55	0.00251	9.96E+02	23	5.12
SEK 6162	708 DD Soil	24.6	500	7.15	0.000445	1.60E+04	23	
SEK 6162DUP.	708 DD Soil	24.6	500	7.15	0.000422	1.69E+04	23	
SEK 6162TRP.	708 DD Soil	24.6	500	7.15	0.000437	1.63E+04	23	2.71
SEK 6163	709 DD Soil	24.3	500	1.96	0.000108	1.81E+04	23	
SEK 6163DUP.	709 DD Soil	24.3	500	1.96	0.000113	1.73E+04	23	
SEK 6163TRP.	709 DD Soil	24.3	500	1.96	0.000104	1.88E+04	23	4.15

BLANK RESULTS	Replicate 1	Replicate 2	Replicate 3
FINAL CONSTIUENT CONCENTRATION µg/mL	<0.000005	<0.000005	<0.000005
EXTRACTION TEMPERATURE	23° C		

[1]METHOD MODIFIED TO USE SPLP FLUID (SW-846 1312) WHICH WAS AIR SATURATED AND TO MEASURE DESORPTION FROM MEDIA RATHER THAN ADSORPTION ONTO MEDIA

[2]Kd - NONEQUILIBRIUM 24-h DISTRIBUTION COEFFICIENT

[3]RSD=RELATIVE STANDARD DEVIATION FOR ORIGINAL, DUPLICATE AND TRIPLICATE SAMPLES

Shaw
Geotechnical Laboratory
Knoxville,TN (865) 690-3211

EXTRACTION
pH/OXIDATION-REDUCTION POTENTIAL (ORP)
SW-846 9045/STANDARD METHODS 2580[1]

PROJECT NAME: GUTERL STEEL PROJECT NUMBER: 140416.09020200

SHAW LAB SAMPLE NUMBER	CLIENT SAMPLE NUMBER	EXTRACTION TYPE	INITIAL ORP MV	24-h pH s.u.	24-h ORP MV
BLANK[2]	-	24-h Kd/SPLP EAST	366	8.1	425
SEK 6156	701 DD Soil	24-h Kd/SPLP EAST	435	6.7	298
SEK 6156DUP.	701 DD Soil	24-h Kd/SPLP EAST	507	6.8	265
SEK 6156TRP.	701 DD Soil	24-h Kd/SPLP EAST	490	6.9	279
SEK 6157	702 DD Soil	24-h Kd/SPLP EAST	355	9.8	169
SEK 6157DUP.	702 DD Soil	24-h Kd/SPLP EAST	305	9.8	143
SEK 6157TRP.	702 DD Soil	24-h Kd/SPLP EAST	302	10.0	138
SEK 6158	703 DD Soil	24-h Kd/SPLP EAST	330	8.5	183
SEK 6158DUP.	703 DD Soil	24-h Kd/SPLP EAST	338	8.2	184
SEK 6158TRP.	703 DD Soil	24-h Kd/SPLP EAST	507	8.0	193
SEK 5159	704 DD Soil	24-h Kd/SPLP EAST	239	8.2	191
SEK 5159DUP.	704 DD Soil	24-h Kd/SPLP EAST	126	8.2	192
SEK 5159TRP.	704 DD Soil	24-h Kd/SPLP EAST	154	8.3	196
SEK 5160	706 DD Soil	24-h Kd/SPLP EAST	164	8.2	201
SEK 5160DUP.	706 DD Soil	24-h Kd/SPLP EAST	170	8.2	299
SEK 5160TRP.	706 DD Soil	24-h Kd/SPLP EAST	179	8.1	295
SEK 6161	707 DD Soil	24-h Kd/SPLP EAST	187	8.9	166
SEK 6161DUP.	707 DD Soil	24-h Kd/SPLP EAST	188	8.8	163
SEK 6161TRP.	707 DD Soil	24-h Kd/SPLP EAST	193	9.0	157
SEK 6162	708 DD Soil	24-h Kd/SPLP EAST	205	8.4	265
SEK 6162DUP.	708 DD Soil	24-h Kd/SPLP EAST	205	8.2	260
SEK 6162TRP.	708 DD Soil	24-h Kd/SPLP EAST	209	8.1	264
SEK 6163	709 DD Soil	24-h Kd/SPLP EAST	216	7.9	296
SEK 6163DUP.	709 DD Soil	24-h Kd/SPLP EAST	216	7.9	297
SEK 6163TRP.	709 DD Soil	24-h Kd/SPLP EAST	220	7.5	285

[1]Standard Methods for the Examination of Water and Wastewater 18th ed. 1992

[2]Blank SPLP Fluid (East) prepared in accordance with SW-846 Method 1312, pH adjusted with dilute 60/40 sulfuric/nitric acid, starting pH 4.15 then saturated with air

Appendix C
Chain of Custody Records

Chain of Custody Record

TAL-4124 (1007)

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client: SHAW ENVIRONMENTAL & INFRASTRUCTURE	Project Manager: KARL VAN KEUREN	Date: 8/16/2011	Chain of Custody Number: 192209
Address: 5050 SECTION AVE	Telephone Number (Area Code)/Fax Number: (513) 782-4745	Lab Number:	Page 1 of 1
City: CINCINNATI; State: OH; Zip Code: 45212	Site Contact: K. CRONIN; Lab Contact:		
Project Name and Location (State): GUTERL STEEL LOCKPORT, NY	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis	Special Instructions/ Conditions of Receipt
701 DD SOIL SAMPLE						X	X						SEK 6156	SHIP ALL SOIL SAMPLES TO: SHAW E & I 304 DIRECTORS DRIVE KNOXVILLE, TN 37923 ATTN: GREG BENNETT (865) 694-7311
702 DD "						X	X						SEK 6157	
703 DD "						X	X						SEK 6158	
704 DD "						X	X						SEK 6159	
706 DD "						X	X						SEK 6160	
707 DD "						X	X						SEK 6161	
708 DD "						X	X						SEK 6162	
709 DD "						X	X						SEK 6163	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature]	8/16/11	1615	1. Received By: [signature]	08-16-11	16:15
2. Relinquished By: [signature]	08-16-11	16:40	2. Received By: [signature] TABUFFALO	08/16/11	1640
3. Relinquished By: [signature] TABUFFALO	08/17/11	1600	3. Received By: Marcus Burgess Shaw	8/18/11	13:30

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

APPENDIX K

Historical Documents
(Provided on Same CD as Appendix A)

PHOTO-GEOLOGIC ANALYSIS (FRACTURE TRACE ANALYSIS) OF THE FORMER GUTERL SPECIALTY STEEL CORPORATION, LOCKPORT, NEW YORK.

Prepared by the
US Army Corps of Engineers,
Army Geospatial Center,
Warfighter Geospatial Support &
Production Directorate,
Hydrologic and Environmental
Analysis Branch
7701 Telegraph Road
Alexandria, Virginia 22315-3864

March 2010

Prepared for the US Corps of Engineers, Buffalo District, Buffalo, New York

TABLE OF CONTENTS

PAGE 1 COVER

PAGE 2 TABLE OF CONTENTS

PAGE 3 PROJECT LOCATION, LOCKPORT NY STUDY AREA

PAGE 4 NOTICE

PAGE 5 INTRODUCTION

PAGE 6 AERIAL PHOTOGRAPHIC SOURCES

PAGE 7 PRESENTATION OF ANALYSIS

PAGE 8 METHODOLOGY

PAGE 9 FRACTURE TRACES

PAGE 10 FRACTURE TRACES (continued)

PAGE 11 ROSE DIAGRAMS

PAGE 12 GEOLOGY OF AREA

PAGE 13 GEOLOGY OF AREA WITH FRACTURE TRACES

PAGE 14 FRACTURE TRACES IN STUDY AREA, 1942 BASE

PAGE 15 FRACTURE TRACES IN STUDY AREA, 2003 BASE

PAGE 16 COMPARISON OF ROSE DIAGRAMS

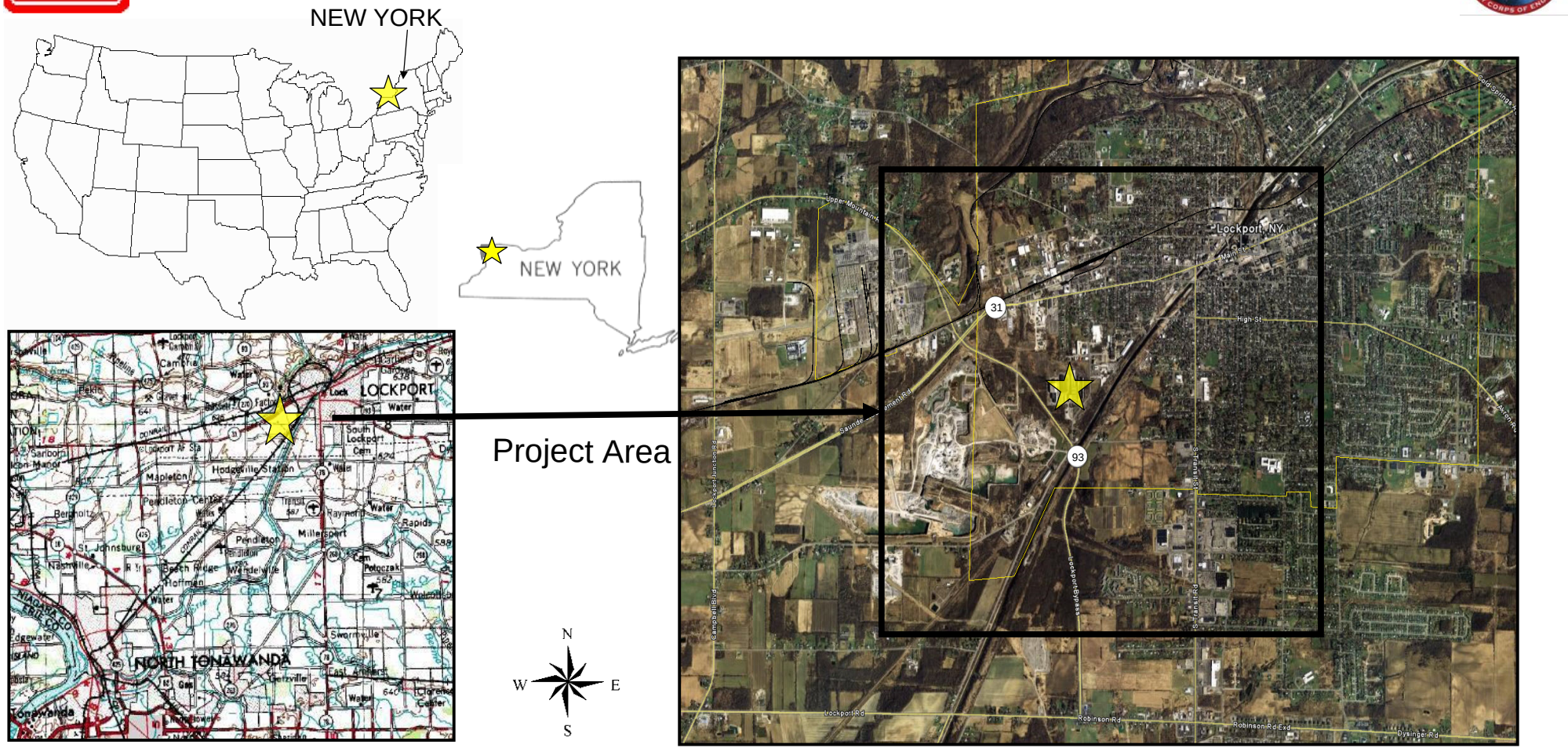
PAGE 17 HALF MILE RADIUS ROSE DIAGRAM

PAGE 18 ONE MILE RADIUS ROSE DIAGRAM

PAGE 19 FIVE MILE RADIUS ROSE DIAGRAM

PAGE 20 RESOURCES

PROJECT LOCATION



FORMER GUTERL SPECIALTY STEEL CORPORATION, LOCKPORT, NEW YORK, FRACTURE TRACE ANALYSIS AREA

NOTICE

The views, opinions, and conclusions presented by the authors of this report should not be construed as official Department of the Army positions or policy unless so designated by other documentation.

The use of commercial software names in this report does not indicate an endorsement of these products.

INTRODUCTION

This report presents the results of a historical photogeologic analysis of the surface terrain features found at the former Guterl Specialty Steel Corporation, Lockport, New York.

Lockport is about 25 miles from Buffalo, New York. The Former Guterl Specialty Steel Corporation site is located about twenty (20) miles northeast of Buffalo, New York. The Guterl Specialty Steel Corporation is located at NY State Plane coordinates 1114090.84 W and 1150985.80 N. The study area is located in Niagara county, New York, within an area bounded by the approximate latitude and longitudes:

Upper left coordinates: 1108177.67 W; 1158729.81 N

Lower right coordinates: 1121703.97 W; 1143373.36 N

This analysis was compiled for the Corps of Engineers, Buffalo District, Buffalo, New York. It was compiled by the U.S. Corps of Engineers, Army Geospatial Center (AGC), Warfighter Geospatial Support & Production Directorate, Hydrologic and Environmental Analysis Branch located in Alexandria, Virginia. This analysis was performed to support the site characterization of surficial terrain features which may influence pathways for contaminant flow. This data should be used in conjunction with other data collected for the site, e.g. geophysical, geologic, and/or hydrologic.

The fracture analysis relies primarily upon 1:20,000 scale aerial photography taken in September 1938 and April 1942. These historical aerial photos were obtained from the National Archives and Records Administration, College Park, Maryland. In addition, the year 2003 mosaic aerial photos were acquired from US Geological Survey (USGS) Digital Ortho Quads (DOQ). These photos were used to create a current digital orthophoto* of the area. A digital rectified mosaic was also created by AGC for the 1942 aerial photos to use as a base for analysis and display.

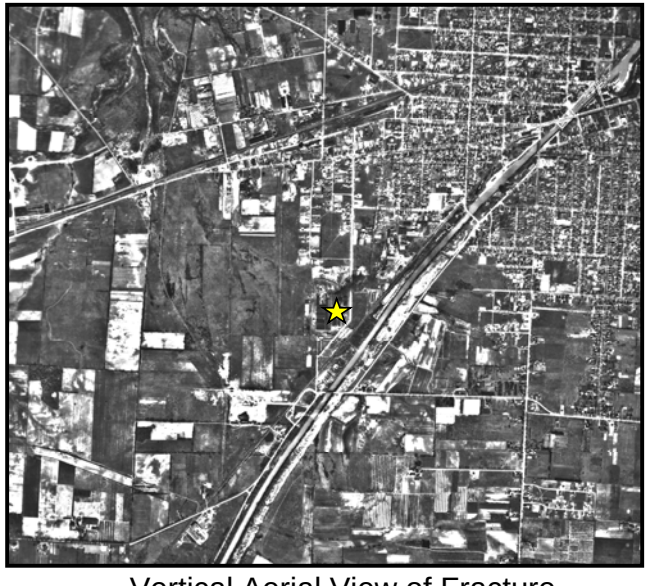
Stereo viewing was employed where overlapping photographs permitted its use. ESRI's ArcGIS 9.3 software was used to digitize and create vector layers. This data can be shown in a Geographic Information System (GIS). Digital analysis is presented using ArcGIS 9.3 shape files. The shape files, digital orthophotos, and this Power Point report are on a DVD. The analysis was completed January 2010.

*A digital orthophoto is a computer generated image of an aerial photograph in which displacements caused by camera orientation and terrain have been removed.

AERIAL PHOTOGRAPHIC SOURCES

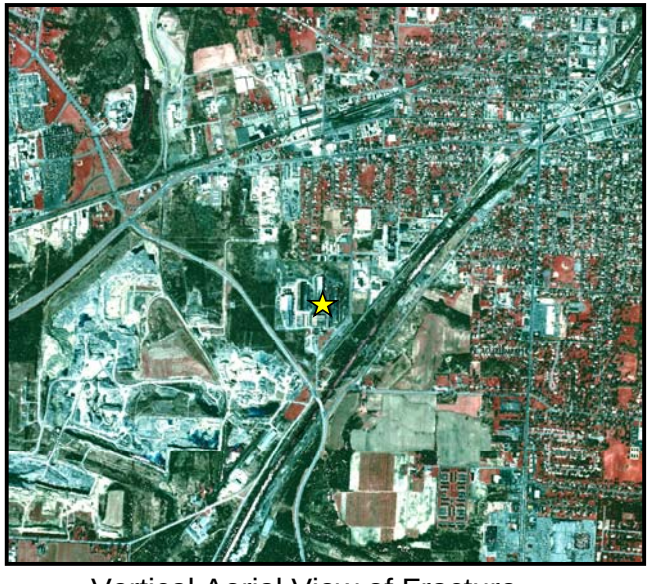
Vertical Aerial View of Fracture Trace area in September 1938

Date: September 6, 1938
Scale: 1:20,000
Source: NARA, College Park, Maryland



Vertical Aerial View of Fracture Trace area in April 1942

Date: April 23, 1942
Scale: 1:20,000
Source: NARA, College Park, Maryland



Vertical Aerial View of Fracture Trace area in February 2003

Date: February 20, 2003
Scale 1 meter resolution
Source USGS, originally UTM projection zone 17; GRS 1980; Datum NAD 83

NARA = National Archives & Records Administration USGS = U.S. Geological Survey ☆ = Project Site Location

N W E S

GIS package is delivered in NY State Plane, FIPS Zone 3103, GRS 1980, NAD 83

PRESENTATION OF ANALYSIS

The analysis is presented on an orthophoto compiled using year 2003 aerial photography. These maps depict fracture traces/ lineaments analyzed from the 1938 and 1942 aerial photography. Fracture traces appear in red, cyan, and light brown on the maps in this report. They should not be thought of as different types of fracture traces. The fracture traces were colored to express which traces were being included in the different Rose diagrams.

All GIS data layers are presented on the enclosed DVD in the New York State Plane (West – Zone 3103) projection, North American Datum 1983, GRS 1980 Spheroid, units in feet. The data were produced by AGC in 2009.

METHODOLOGY

METHODOLOGY

Photographic analysis of historical aerial photography was the primary method of identifying natural occurring fracture traces in the area of the former Guterl Specialty Steel Company in Lockport, NY.

The analysis in this report is primarily based upon interpretation of black and white aerial photography over the project area for the period 1939 and 1942. Stereo viewing was employed where overlapping photographs permitted its use. A list of aerial photography used by AGC appears on the Aerial Photographic Source slide.

Both single-optical and stereoscopic viewing, at various magnifications, were performed on AGC's collection of historical aerial photographs. Visible signatures such as size, scale, shape, shadow, tone, texture, and pattern allow features to be recognized on the aerial photography.

Stereo-paired images viewed through a stereoscopic microscope allows for a three-dimensional view of the terrain.

Sample of aerial photographs examined.

GEOREFERENCED DATA

Geodetic Control was applied to the aerial photography using 2003 New York State GIS data (http://www.nysgis.state.ny.us/gateway/mg/). This georeferenced image file is placed on DVD for quick and easy access. A "world file", or .tfw file, is associated with each .tif image file included in the DVD. The .tfw file contains the coordinate information of the upper left (x,y) pixel and the pixel size (in feet). This .tfw file must be placed in the same directory as the .tif image file before viewing in any Geographic Information System (GIS) software.

The 2003 orthophoto was used for the horizontal control for the historical photos. ERDAS 9.3 software was used to geo-reference the 1942 selected historical photos to the 2003 photomap of the site. ESRI's ArcGIS 9.3 software was used to digitize and create vector layers for the historical years. The data can be shown in a Geographic Information System (GIS) such as ArcMAP. Digital analysis is presented using ArcGIS shape files. Shape files, digital orthophotos and the report are on a DVD. Microsoft PowerPoint 2003 was used to create this report.

Fracture traces, derived through photo analysis, are displayed on selected photos in this study. All GIS image and vector data are projected in a State Plane coordinate system, New York West, FIPS Zone 3103 ; Spheroid: GRS 1980; Datum: NAD83, Units: feet.

FRACTURE TRACES

Fracture traces and lineaments are important when addressing aquifer contamination because they may represent conduits for groundwater flows and may provide possible subsurface contaminant pathways. A monitoring well network may be designed by considering fracture patterns identified by photogeologic analysis.*

Lattman (1958) defined fracture traces and lineaments as linear features visible on aerial photography. Photogeologic fracture traces are natural linear features, expressed as topographic characteristics (including straight stream segments), vegetation, or soil tonal alignments, which are continuous for less than one mile. If the feature continues for more than a mile, it is termed a lineament. Lineaments may be expressed continuously or discontinuously for many miles.

Linear features on aerial photography may reflect geological features such as faults, joints, zones of weakness, or bedrock contacts. Linear features may also reflect man-made structures such as fence lines, buried pipeline, and drainage ditches.

Aerial photographs for the years 1938 and 1942 were analyzed because there was less human intervention on the area in those years. Both years are at a scale of 1:20,000 and were examined both monoscopically and stereoscopically. Fracture traces and lineaments discovered monoscopically were checked stereoscopically. Clear acetate over the aerial photography was used to record delineated photo linear features identified as fracture traces or lineaments. The analysis done on both years was combined into one shape file.

* **The fracture trace information depicted in this report should not be used alone to precisely site monitoring wells.**

FRACTURE TRACES continued

The photos were scanned and rectified in ERDAS IMAGINE 9.3 software. The 1942 rectified photo was used to keep accurate map control of the rectified data. The fractures were then digitized using Arc GIS 9.3 software. Approximately 7.5 square miles of terrain were analyzed.

No fracture traces were field checked. Traces such as power lines, fence lines, buried pipeline traces, right-of-ways, drainage ditches, or other artifacts and biologic false-positives may be present. Cultural changes over the site since 1942 have also obscured or removed the surface expression of certain historical features.

The fracture traces and lineaments depicted on the maps may be water bearing. Some traces may be very narrow, closed, and/or clay filled. Others may be greatly fractured and water filled, and may provide a high speed pathway for possible contaminant flow. Additional geophysical data or exploratory drilling is required to determine the nature of the fracture zone. Distances of less than a few feet can determine whether or not a well is located on a fracture.

NOTE:

THE TERM "FRACTURE TRACE" AS USED IN THIS REPORT, WILL INCLUDE FRACTURE TRACES AND LINEAMENTS

ROSE DIAGRAMS

A rose diagram plots strikes of planar features. It indicates orientation and frequency of data (lineaments and fracture traces). It consists of radiating rays drawn proportional in length to the number of lineaments in a particular direction. ESRI ArcGIS 9.3 software was used to record lines of strike. Computer scrip written by Shan Chen in 2005 recorded on ESRI's Support Center website was use to create the Rose Diagrams from the AGC analysis.

Some notes on the accuracy of the rose diagrams:

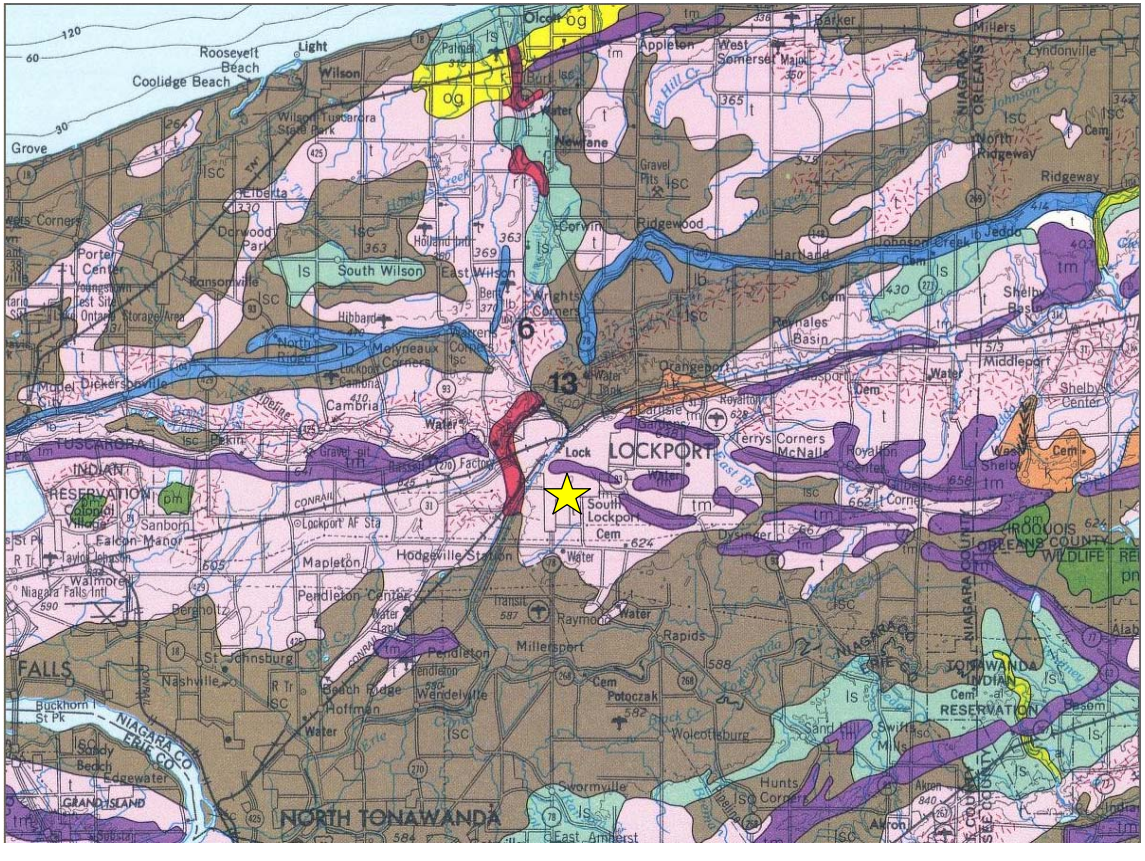
1) the fracture traces analyzed by AGC did not require field checking

2) the scale of the imagery used by AGC is 1:20,000 (1938 & 1942) while the scale of the NY State Fracture Trace analysis is 1:250,000 (2003).

3) more fractures are seen in a specific area if the scale is larger for that local area

4) there are fewer fractures distinguished in the northeast quarter of the area because of the human development that took place before 1938. This fact may skew the rose diagrams.

GEOLOGY OF AREA



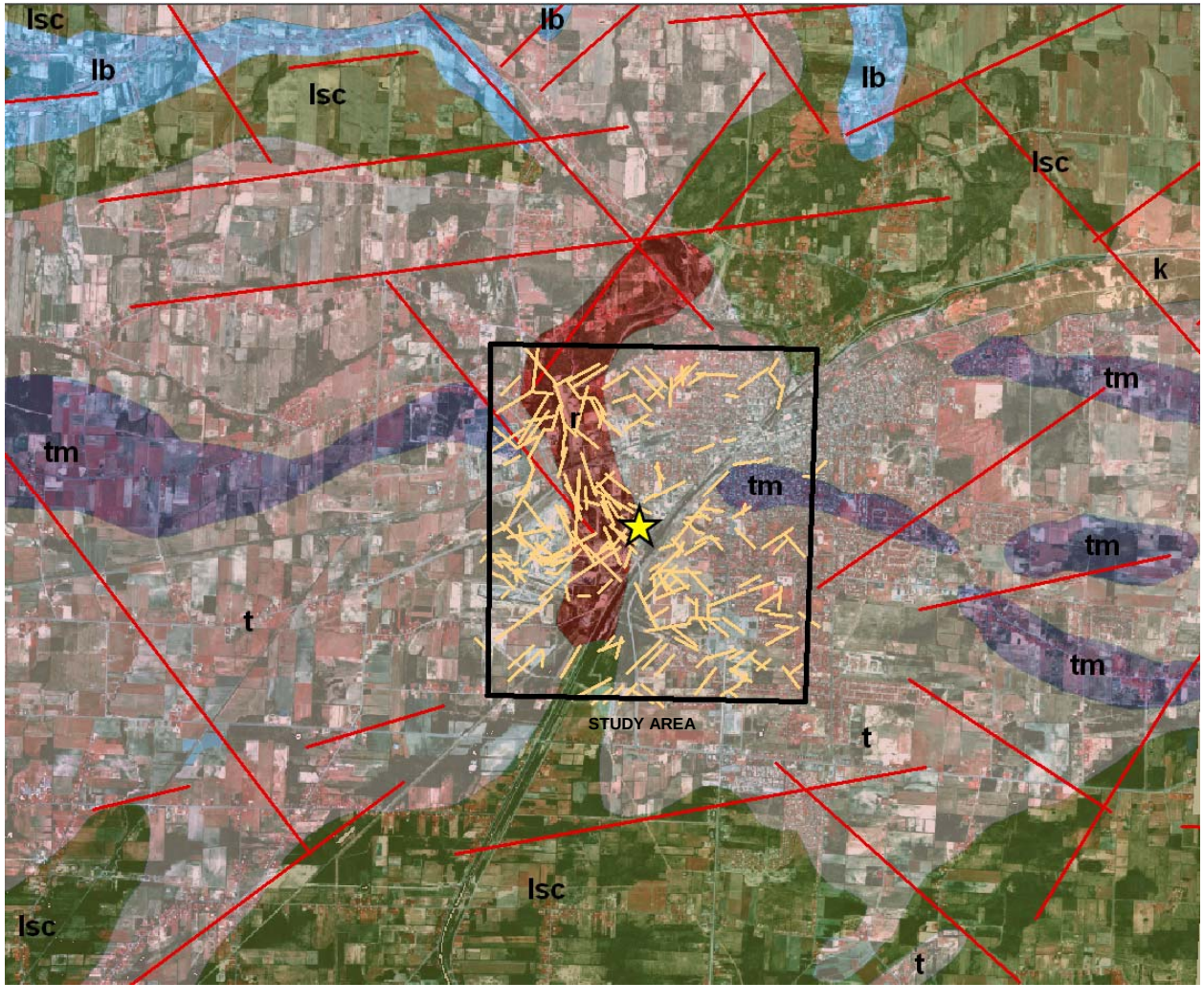
Stippling seen in this image does not appear in the shape files downloaded for the Niagara sheet. The explanation stipulates - Bedrock stipple overprint: Bedrock may be within 1-3 meters of the surface, may sporadically crop out, variable mantle of rock debris and glacial till.

From: Surficial geologic map of New York: Niagara sheet, 1991

EXPLANATION

- al - Recent deposits
  Generally confined to floodplains within a valley, oxidized, non-calcareous, fine sand to gravel, in larger valleys may be overlain by silt, subject to frequent flooding, thickness 1-10 meters.
- pm- Swamp deposits
  Peat-muck, organic silt and sand in poorly drained area, un-oxidized, may overlay marl and lake silts, potential land instability, thickness generally 2-20 meters.
- lb – Lacustrine beach
  Generally well sorted sand and gravel, stratified, permeable and well drained, deposited at a lake shoreline, generally non-calcareous, may have wave-winnowed lag gravel, thickness variable (1-5 meters).
- lsc – Lacustrine silt and clay
  Generally laminated silt and clay, deposited in proglacial lakes, generally calcareous, potential land instability, thickness variable (up to 1—meters); stipple overprint where bedrock is within 1-3 meters of the surface.
- ls – Lacustrine sand
  Sand deposits associated with large bodies of water, generally a near-shore deposit or near a sand source, well sorted, stratified, generally quartz and sand, thickness variable (2-20 meters).
- og – Outwash sand and gravel
  Coarse to fine gravel with sand, proglacial fluvial deposition, well rounded and stratified, generally finer texture away from ice border, may be calcreted beyond Winsonsinan glacial limit, thickness variable (2-20 meters).
- k - Kame deposits
  Includes kame, eskers, kame terraces, kame deltas, coarse to fine gravel and/or sand, deposition adjacent to ice (if at ice margin, relief is below elevation of associated outwash), lateral variability in sorting, coarseness and thickness, may be calcreted beyond Wisconsinan glacial limit, thickness variable (10 – 30 meters)
- tm - Till moraine
  More variably sorted than till, generally more permeable than till, deposition adjacent to ice, more variably drained, may include ablation till, thickness variable (10-30 meters).
- t – Till
  Variable texture (e.g. clay, silt-clay, bolder clay), usually poorly sorted diamict, deposition beneath glacier ice, relatively impermeable (loamy matrix), variable clast content - ranging from abundant well-rounded diverse lithologies in valley tills to relatively angular, more limited lithologies in upland tills, tends to be sandy in area underlain by gneiss or sandstone, potential land instability on steep slopes, thickness variable (1-50 meters).
- r – Bedrock
  Exposed or generally within 1 meter of the surface

GEOLOGY OF AREA WITH FRACTURE TRACES



EXPLANATION

lb – Lacustrine beach
Generally well sorted sand and gravel, stratified, permeable and well drained, deposited at a lake shoreline, generally non-calcareous, may have wave-winnowed lag gravel, thickness variable (1-5 meters).

lsc – Lacustrine silt and clay
Generally laminated silt and clay, deposited in proglacial lakes, generally calcareous, potential land instability, thickness variable (up to 1— meters); stipple overprint where bedrock is within 1-3 meters of the surface.

k - Kame deposits
Includes kame, eskers, kame terraces, kame deltas, coarse to fine gravel and/or sand, deposition adjacent to ice (if at ice margin, relief is below elevation of associated outwash), lateral variability in sorting, coarseness and thickness, may be calcreted beyond Wisconsinan glacial limit, thickness variable (10 – 30 meters)

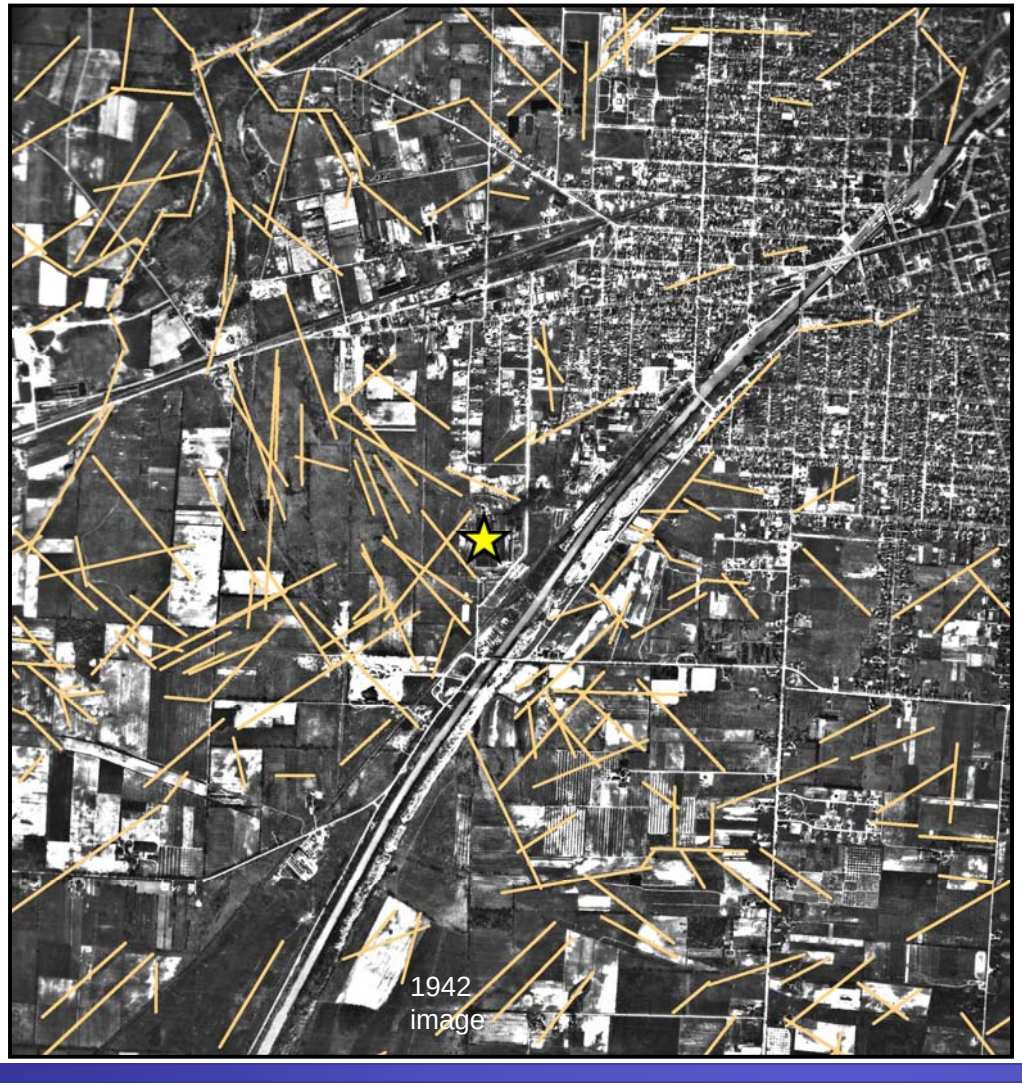
tm - Till moraine
More variably sorted than till, generally more permeable than till, deposition adjacent to ice, more variably drained, may include ablation till, thickness variable (10-30 meters).

t – Till
Variable texture (e.g. clay, silt-clay, bolder clay), usually poorly sorted diamict, deposition beneath glacier ice, relatively impermeable (loamy matrix), variable clast content - ranging from abundant well-rounded diverse lithologies in valley tills to relatively angular, more limited lithologies in upland tills, tends to be sandy in area underlain by gneiss or sandstone, potential land instability on steep slopes, thickness variable (1-50 meters).

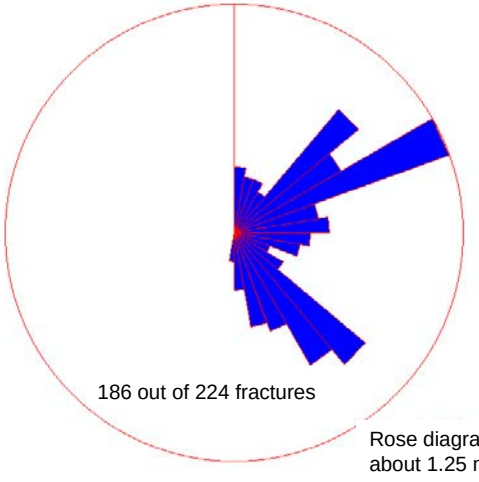
r – Bedrock
Exposed or generally within 1 meter of the surface

Area of Interest (AOI)
NY State Fractures
AGC Fractures
Former Location of Guterl Specialty Steel Corporation

FRACTURE TRACES IN STUDY AREA, 1942



View of fracture traces and lineaments that were mapped for this presentation. Distance from the former location of Guterl Specialty Steel Corporation site is about 1.25 miles in all four directions.



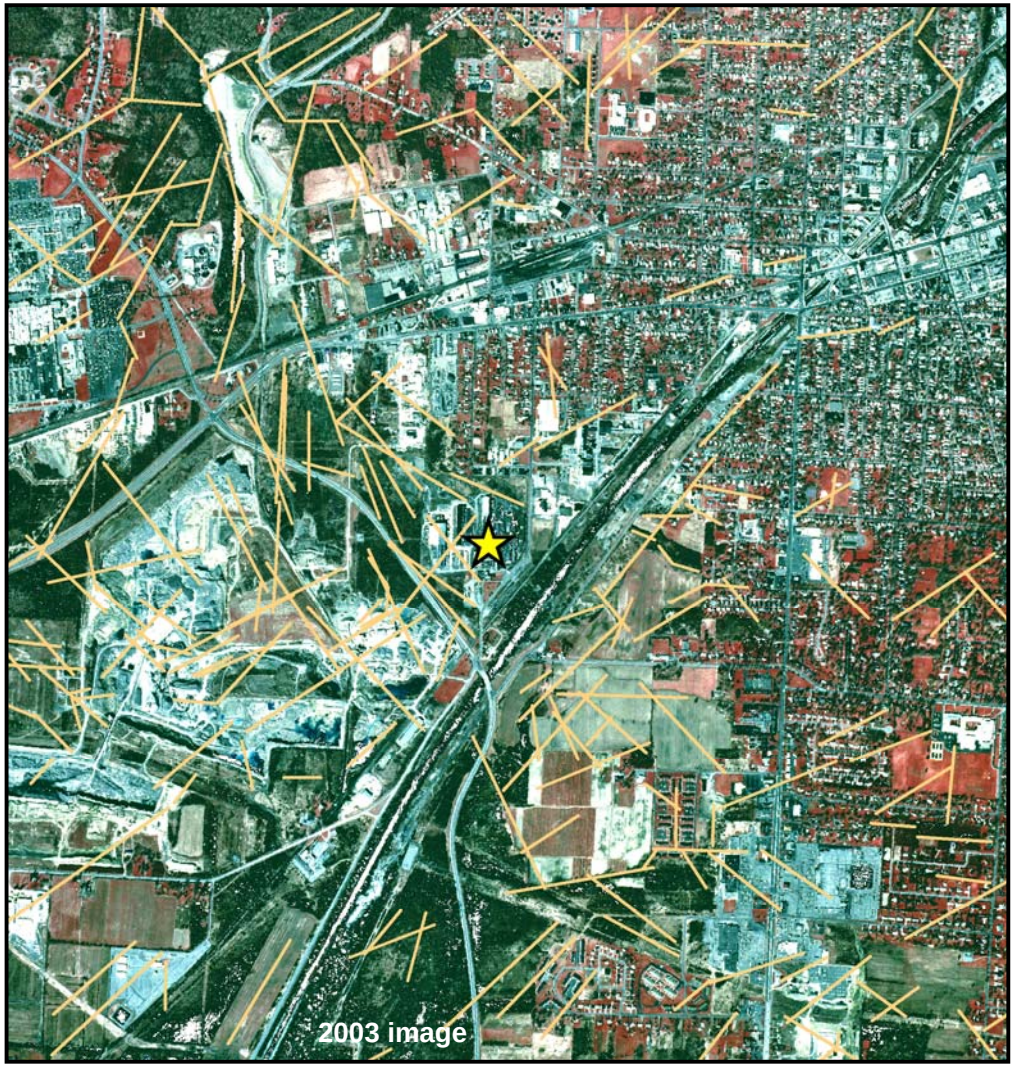
Rose diagram of fracture traces in the area presented.

Scale approximately
0.5 mile or 880 meters

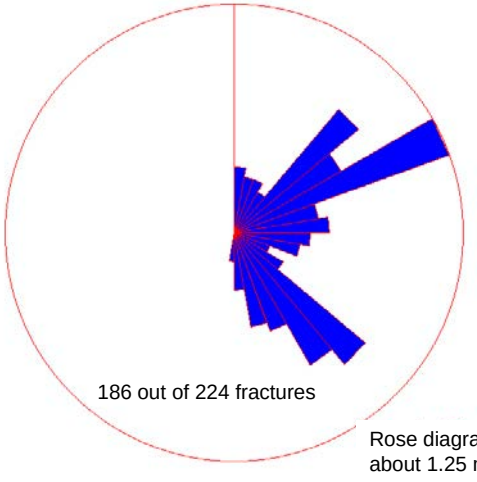
☆ = Project Site Location

N
W E
S

FRACTURE TRACES IN STUDY AREA, 2003



View of fracture traces and lineaments that were mapped for this presentation. Distance from the former location of Guterl Specialty Steel Corporation site is about 1.25 miles in all four directions.



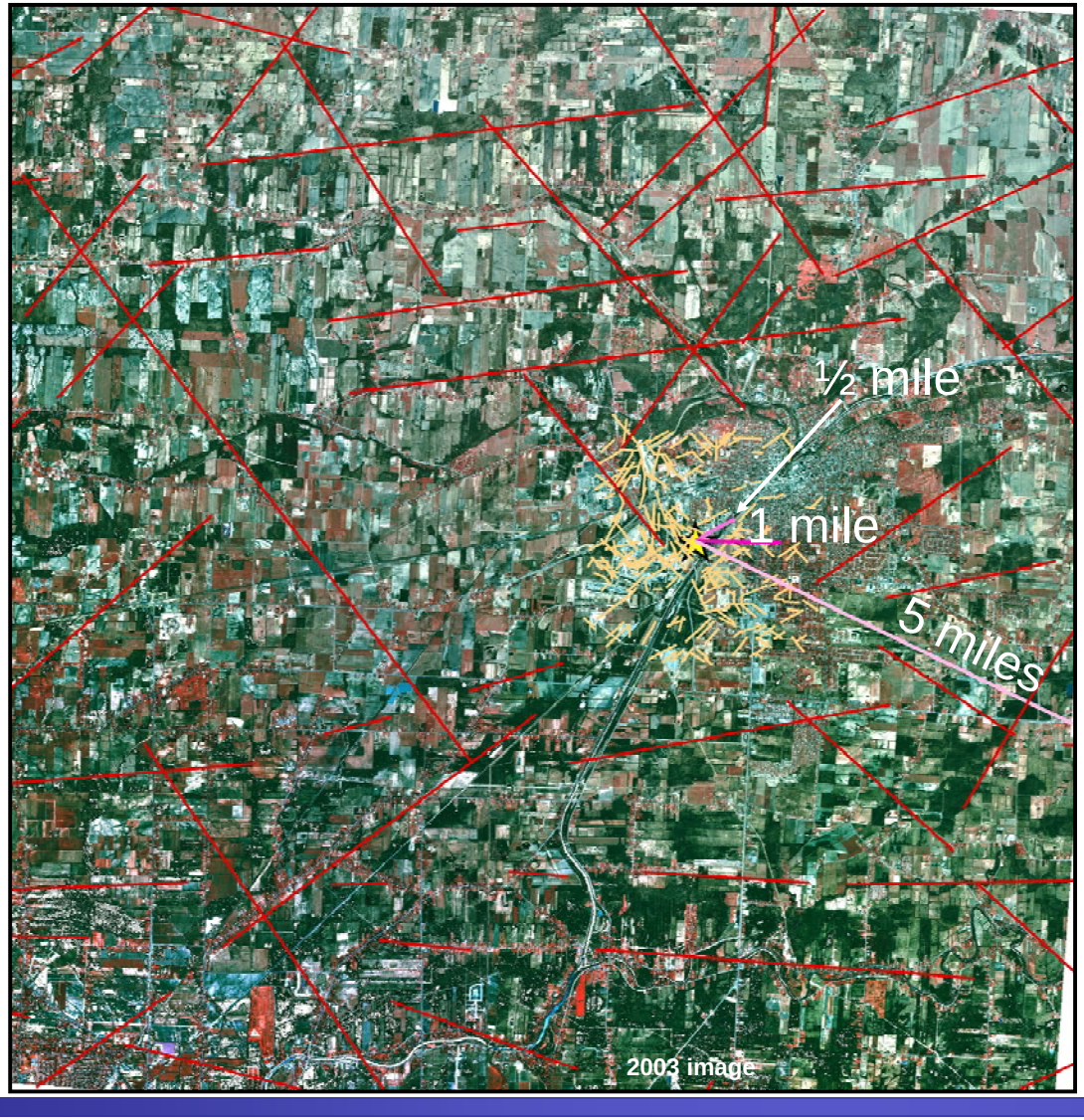
Rose diagram of fracture traces in the area presented.

Scale approximately
0.5 mile or 880 meters

☆ = Project Site Location

N
W E
S

COMPARISON OF ROSE DIAGRAMS



This image demonstrates the distance of the radius' of the three rose diagrams compared in this report.

I

The first rose diagram has a radius of approximately ½ mile (0.8 km) from the former Guterl Specialty Steel Corporation. It does not include any of the NY State analysis of fracture traces.

II

The second rose diagram has a radius of approximately 1 mile (1.6 km) from the former Guterl Specialty Steel Corporation. This rose includes most of the feature traces collected by AGC but none of the NY State analysis of fracture traces.

III

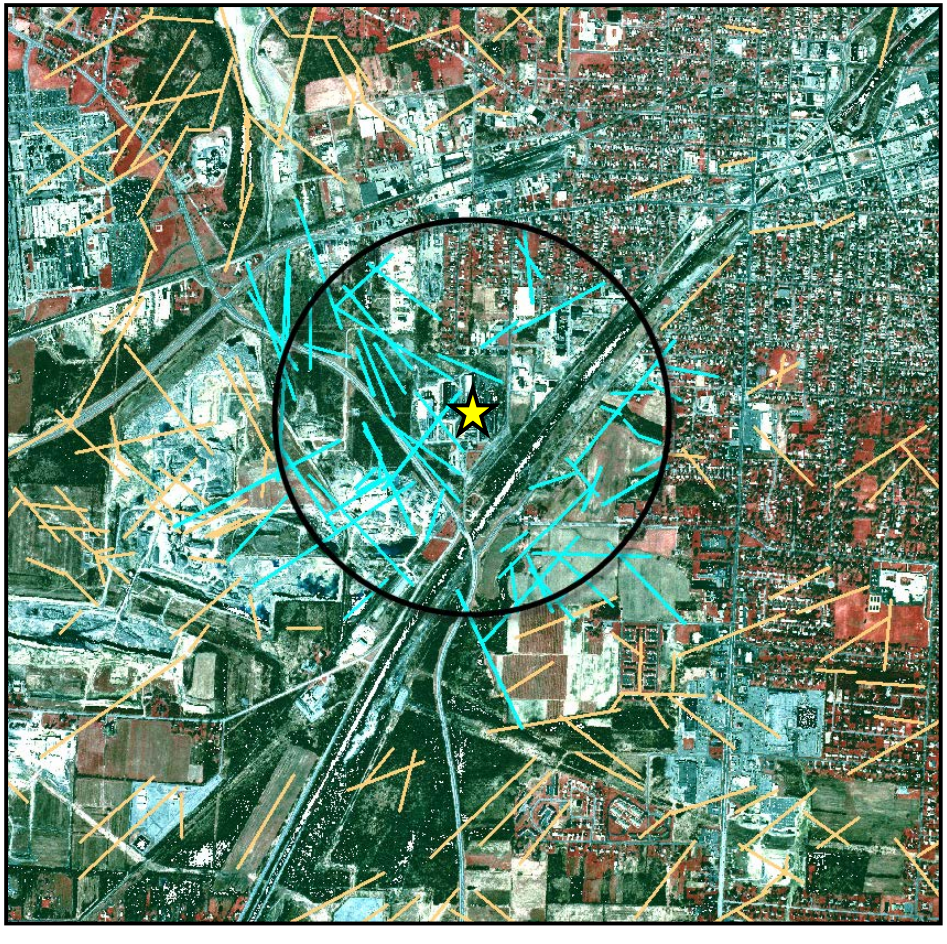
The third rose diagram has a radius of approximately 5 miles (8.0 km) and is only composed of the NY State analysis of fracture traces.

- 0.5 mile radius
- 1.0 mile radius
- 5 mile radius
- NY State fracture traces
- AGC Study area fracture traces

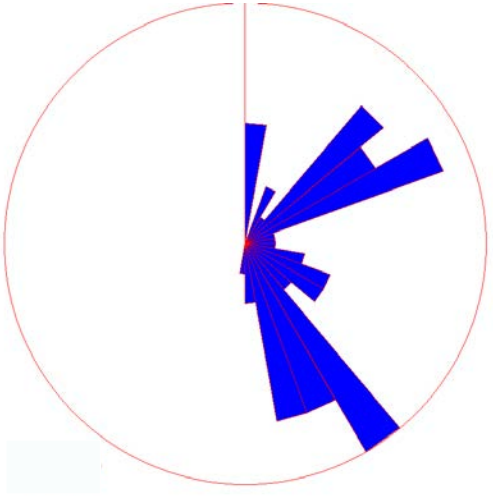
N W E S

☆ = Project Site Location

HALF MILE RADIUS ROSE DIAGRAMS
AGC STUDY AREA



The cyan colored fractures show the 61 fractures collected by AGC analysis in a 1/2 mile radius rose diagram. If a portion of a fracture is crossed by the circle, the complete length of the fracture trace is considered in the rose diagram.



Half mile radius Rose Diagram

(61 fracture traces out of 224 total number of fracture traces in the study area)

AGC Study area fracture traces included in rose diagram

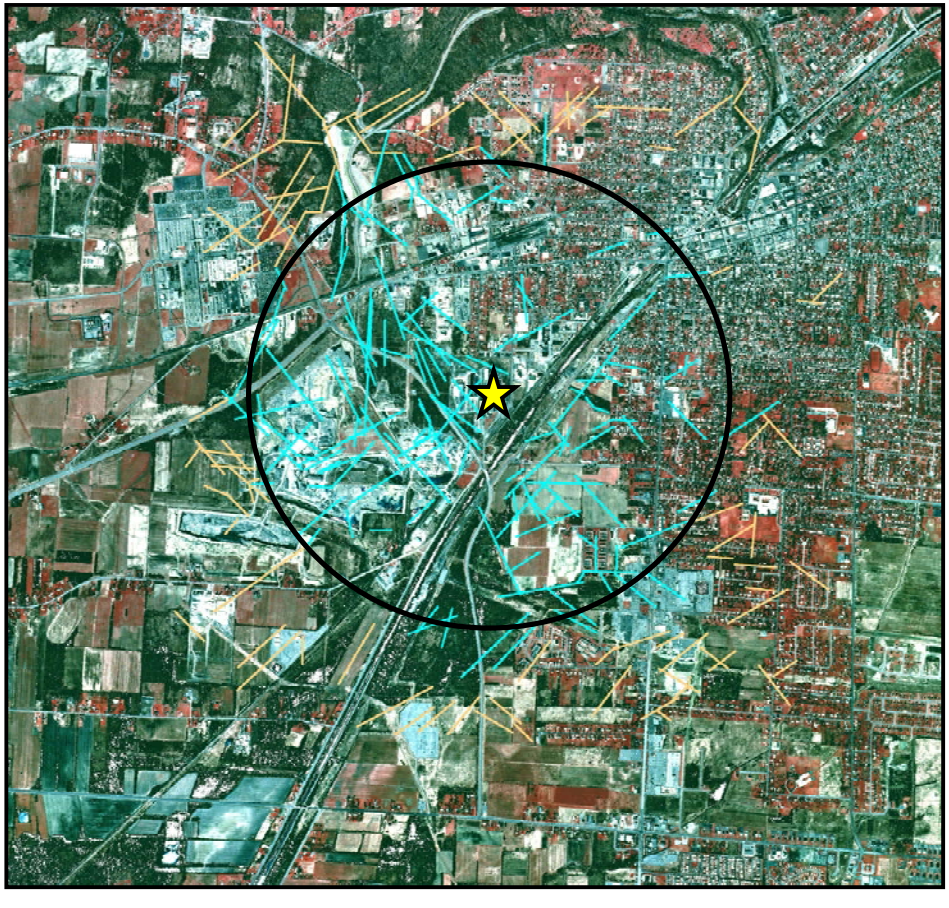
AGC Study area fracture traces not included in rose diagram

☆ = Project Site Location

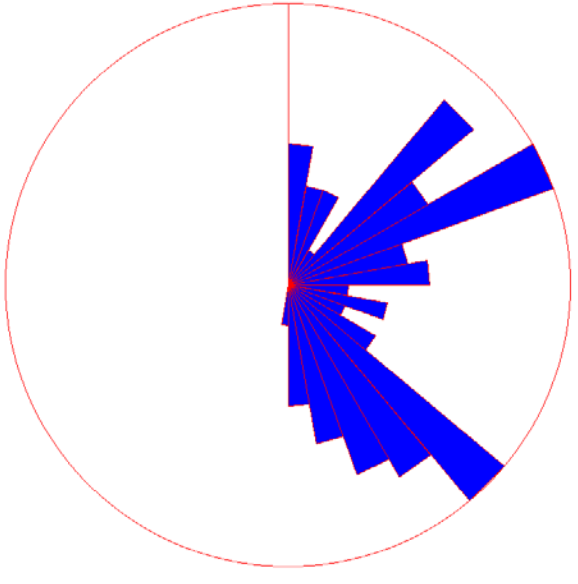
N
W E
S

ONE MILE RADIUS ROSE DIAGRAMS

AGC STUDY AREA



The cyan colored fractures show the 133 fractures collected by AGC analysis in a one mile radius rose diagram. If a portion of a fracture is crossed by the circle, the complete length of the fracture trace is considered in the rose diagram.



One mile radius Rose Diagram

(133 fracture traces out of 224 total number of fracture traces in the study area)

AGC Study area fracture traces included in rose diagram

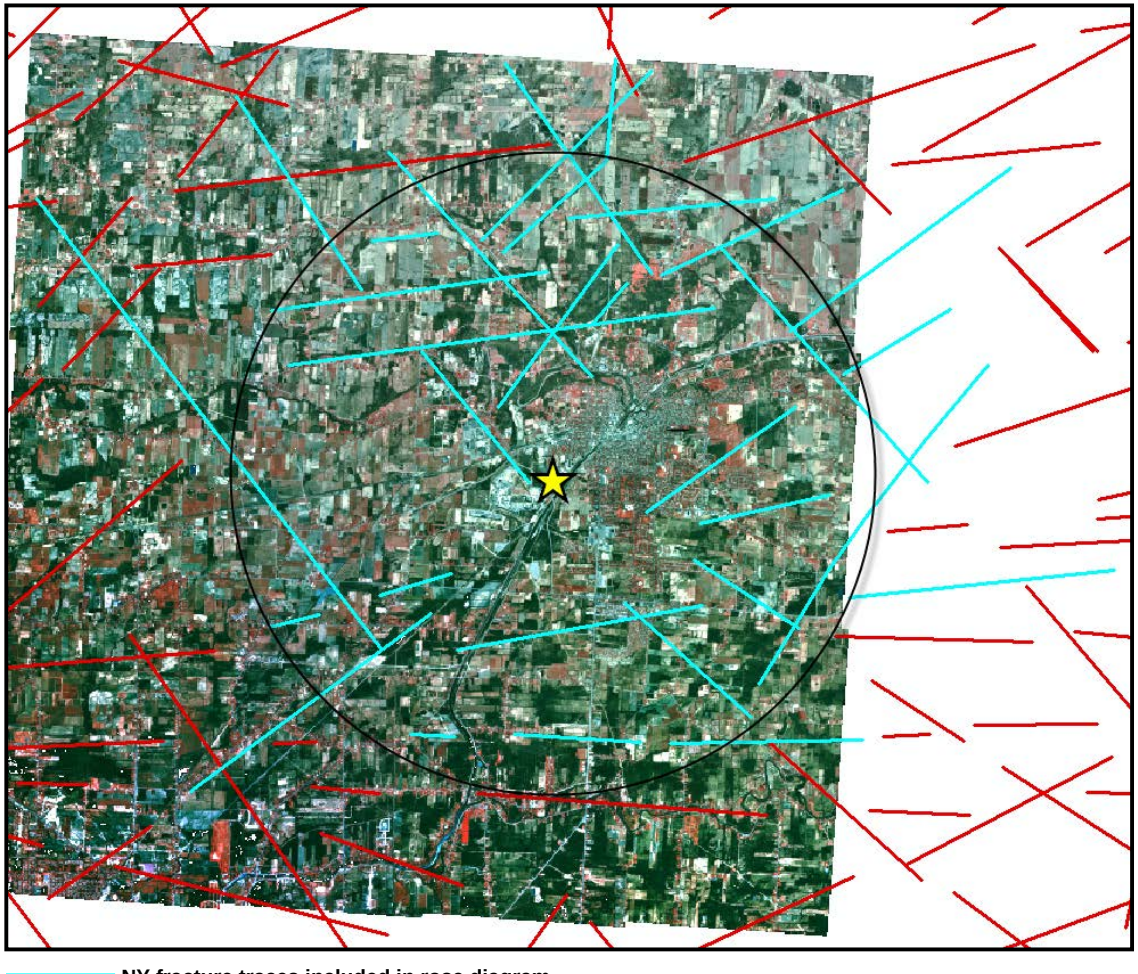
AGC Study area fracture traces not included in rose diagram

☆ = Project Site Location

N W E S

FIVE MILE RADIUS ROSE DIAGRAMS

NY STATE FRACTURE TRACES

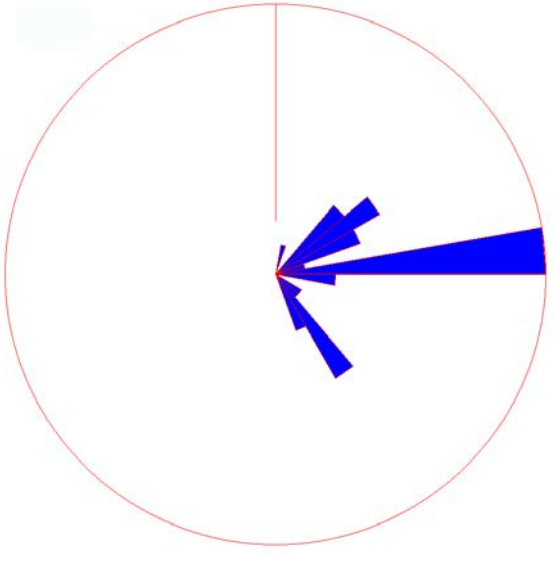


NY fracture traces included in rose diagram

NY fracture traces not included in rose diagram

☆ = Project Site Location

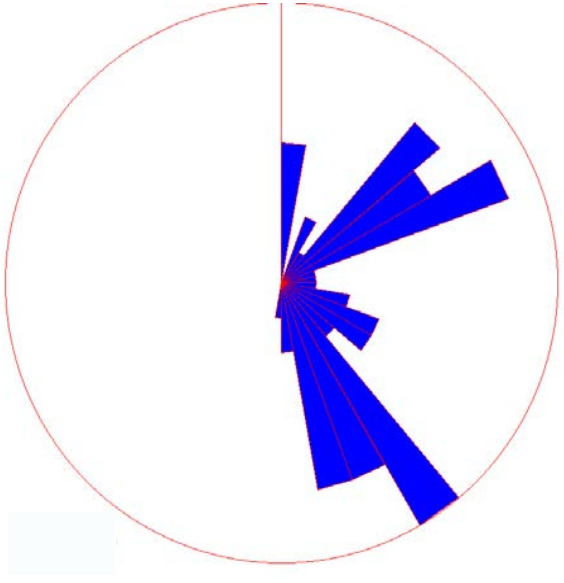
The cyan colored fractures show the 31 NY State fractures collected in the five mile radius rose diagram. No AGC analysis is included in this Rose Diagram. If a portion of a fracture is crossed by the circle, the complete length of the fracture trace is considered in the rose diagram.



Five mile radius Rose Diagram

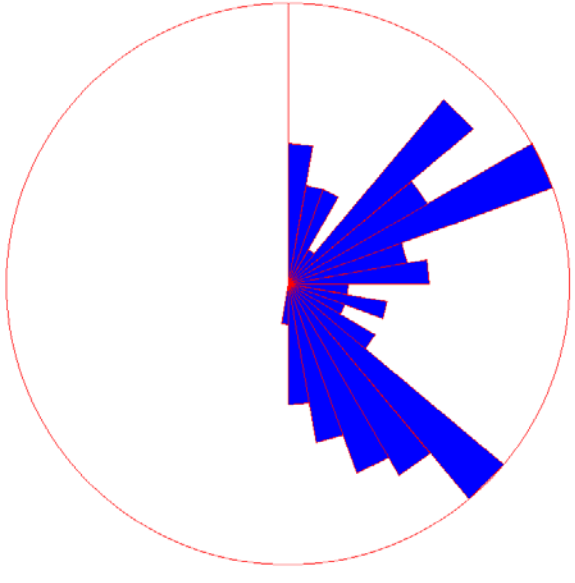
(31 fracture traces in the study area out of 9588 fracture traces recorded in the state of New York)

ROSE DIAGRAMS



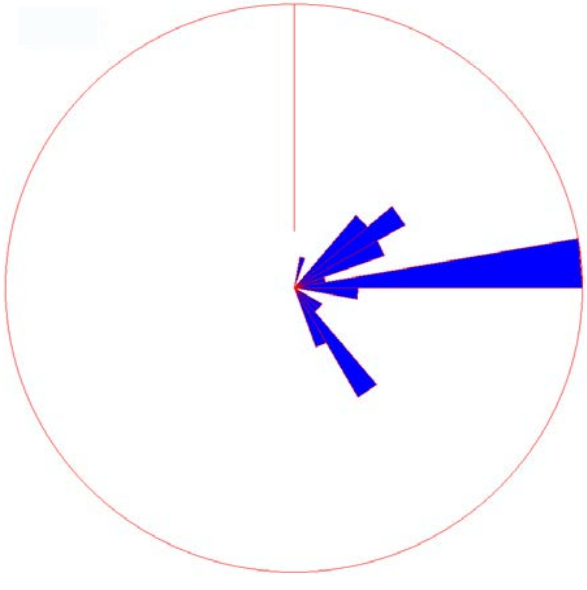
AGC ANALYSIS

HALF MILE RADIUS ROSE



AGC ANALYSIS

ONE MILE RADIUS ROSE



NY STATE ANALYSIS

FIVE MILE RADIUS ROSE

RESOURCES

National Archives and Records Administration (NARA), Cartographic and Still Pictures Branches, College Park, MD

US Geological Survey, Surficial geologic map of New York: Niagara sheet; Principal Contributors: Cadwell, Donald H., Connally, G. Gordon, Fleisher, P. Jay, Muller, Ernest H; New York State Museum; Map and Chart Series 40; 1991.

WEBSITES:
New York State GIS website:
http://www.nysgis.state.ny.us/gateway/mg/2002/niagara

U.S. Geological Survey website: http://terraserver-usa.com

ESRI's Support Center, Shan Chen, Rose Diagrams, October 29, 2005,
http://arcscripts.esri.com/details.asp?dbid=13473

ARMY GEOSPATIAL CENTER
AGC
US ARMY CORPS OF ENGINEERS

APPENDIX L

Evaluation of Uranium Concentration Trends

Appendix L

Evaluation of Uranium Concentration Trends

Time trends in uranium concentrations at 18 wells were evaluated using graphical and statistical methods to determine if any significant trends are present. The wells selected for evaluation had four or more sample events and uranium concentrations above 10 µg/L in one or more samples. This concentration screening value was developed in a previous evaluation based on $^{234}U/^{238}U$ ratios. Samples with uranium concentrations below 10 µg/L have isotopic ratios that indicate a natural background source, whereas most samples with uranium concentrations above 10 µg/L have ratios that suggest a local contaminant source for the majority of the detected uranium. An additional 12 wells that were sampled four or more times are part of the monitoring network. Samples from these wells have on average less than 10 µg/L U and are not discussed here because they most likely represent background concentrations.

The 18 impacted wells were grouped for plotting purposes into four categories based on ranges of uranium concentrations so that the trends can be clearly seen on the trend plots. These categories are 10-15, 15-30, 30-90, and >90 µg/L U, which allows three to six wells per plot, as shown on Figures 1, 2, 3, and 4. Most of the wells were sampled four times during November 2007; September 2009; September 2010; and August 2011. Three of the 18 impacted wells that appear on Figure 4 were also sampled during February 2012, yielding five samples for those wells.

The U concentrations shown on the plots were calculated by converting the activities (as pCi/L) of each of the ^{234}U, ^{235}U, and ^{238}U isotopes to mass (as µg/L) based on their specific activity constants (as Ci/g) and summed. Analyses of filtered (0.45 micron) samples were used in the evaluation. Duplicate results were averaged together for plotting purposes. Figures 1 through 4 do not appear to show any consistent trends.

An additional perspective is provided in Figure 5, which shows mean U concentrations for each of the four sample events calculated from the 18 impacted wells. Error bars are set equal to plus and minus one standard deviation for each sample event. This plume-wide mean perspective shows that the standard deviations in U concentrations at each sample event are of the same magnitude as the mean concentrations at each sample event, and that the differences in means between events is much less than the standard deviations of the individual means. These results imply that any trend in the plume-wide averages, if present, would not be detectable over the four-year monitoring period.

Kendall-Tau Test of Trend

Kendall's tau, which is equivalent to the Mann-Kendall test, is used here as a trend estimator as recommended by the EPA. It compares repeated measurements of an analyte concentration over time, and tests the null hypothesis that the measurements exhibit no temporal trend. It is a nonparametric test, which means that it is based on the direction of change in concentration (up or down) over time rather than the magnitude of the change over time.

To perform the test, the *signs* (positive for increases, negative for decreases) of all possible pairs of data points are summed. For instance, if there are four sequential measurements (1, 2, 3, and 4), then the signs of 1 versus 2, 1 versus 3, 1 versus 4, 2 versus 3, 2 versus 4, and 3 versus 4 are summed. If there is no real trend, then the number of positive and negative signs will be roughly equal, although some differences would be expected due to chance. However, if there are many more increases than decreases between the pairs, then a real upward trend is indicated, and if there are many more decreases than increases between the pairs, then a real downward trend is indicated.

The test returns a *tau* coefficient that equals the sum of the signs divided by the total number of sample pairs available. If the concentrations consistently increase at each successive sample event, then *tau* equals +1, if the concentrations consistently decrease at each successive sample event, then *tau* equals –1, and if the number of positive and negative signs are equal, than *tau* equals zero. For all other arrangements *tau* lies between −1 and 1. The test was performed at a 95 percent confidence level, at which there is only a five percent chance of incorrectly accepting the null hypothesis (no trend is present) when a trend actually is present.

Trends at all 30 wells (impacted and unimpacted wells sampled four or more times) were tested. Test results are shown in Table 1. Only 3 of the 30 wells showed significant trends, which are highlighted in bold. MW-3 is a background well with a significant downward trend, and MW-603D is a background well with a significant upward trend. One impacted well, MW-24, had a significant upward trend with concentrations that increased from 5.49 to 35.08 µg/L in the four successive samples. For an increasing or decreasing trend to be considered statistically significant at a 95 percent confidence level with only four samples, the concentrations must increase or decrease sequentially at all four sample events. With four rounds, there are only [½ $n(n\text{-}1)$] = six pairs of samples that can be compared for an increase or decrease over time. Four random increases in a row can be expected just due to chance with a probability of 1/6. With 30 wells, this should occur on average about [30 x 1/6] = five times due to chance. These results indicate that no statistically significant trends in uranium concentrations are detectable over the four-year monitoring period, with the possible exceptions of MW-3, MW-603D, and MW-24. For the remaining wells, no statistically significant trends in uranium concentrations

are detectable over the four-year monitoring period. However, it should be noted that four samples obtained over a 4-year period may be insufficient to detect upward or downward trends in wells with shallow slopes.

Table 1. Kendall-Tau Trend Test Results

Well	Tau	Direction	Significant?	Category (U range in ug/L)
MW-1	0.67	Up	No	<10
MW-14	0	None	No	<10
MW-15	-0.67	Down	No	<10
MW-17	0.67	None	No	<10
MW-21	-0.67	Down	No	<10
MW-23	-0.67	Down	No	<10
MW-3	**-1.0**	**Down**	**Yes**	**<10**
MW-5	0	None	No	<10
MW-6	0	None	No	<10
MW-600D	0	None	No	<10
MW-603D	**1.0**	**Up**	**Yes**	**<10**
MW-8	0.33	Up	No	<10
MW-19	0.33	Up	No	10-15
MW-20	0	None	No	10-15
MW-606DR	0	None	No	10-15
MW-607D	0.33	Up	No	10-15
MW-11	0.33	Up	No	15-30
MW-16	0.33	Up	No	15-30
MW-2	0.33	Up	No	15-30
MW-24	**1.0**	**Up**	**Yes**	**15-30**
MW-601D	-0.33	Down	No	15-30
MW-9	0	None	No	15-30
MW-13D	0	None	No	30-90
MW-22	0	None	No	30-90
MW-4	0	None	No	30-90
MW-18	-0.67	Down	No	>90
MW-26	-0.60	Down	No	>90
MW-602D	0	None	No	>90
MW-604D	-0.60	Down	No	>90
MW-605D	-0.33	Down	No	>90

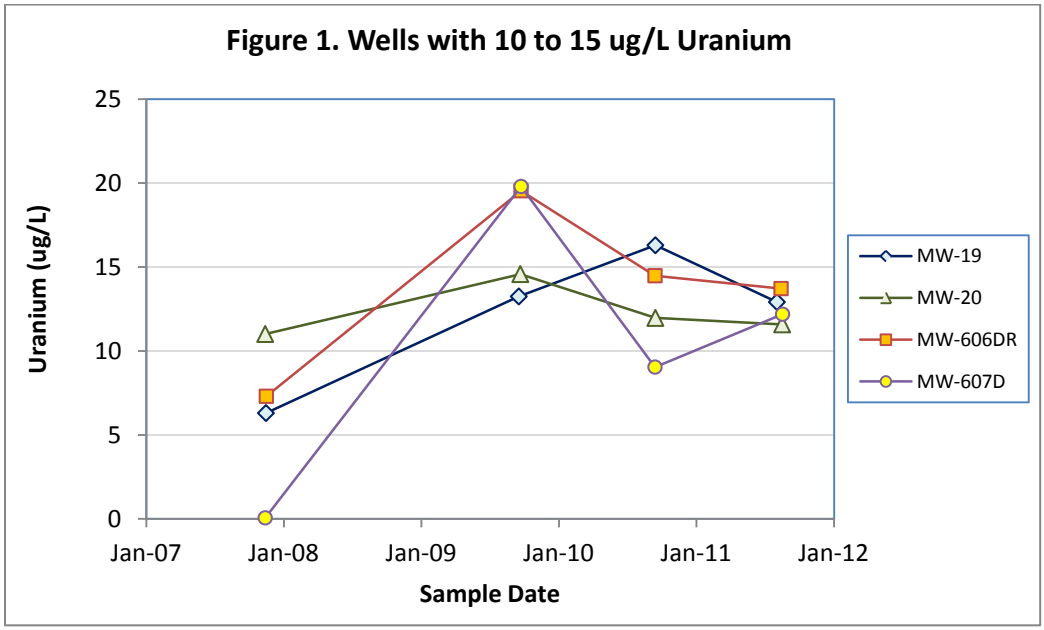


Figure 1. Wells with 10 to 15 ug/L Uranium
Uranium (ug/L)
25
20
15
10
5
0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Sample Date
MW-19
MW-20
MW-606DR
MW-607D

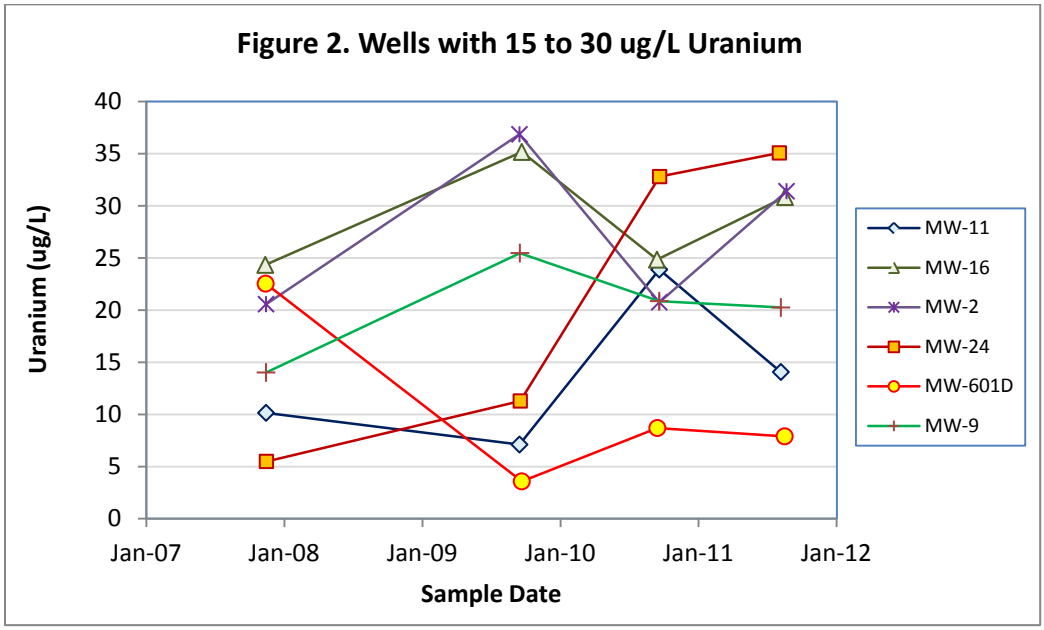


Figure 2. Wells with 15 to 30 ug/L Uranium
Uranium (ug/L)
40
35
30
25
20
15
10
5
0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Sample Date
MW-11
MW-16
MW-2
MW-24
MW-601D
MW-9

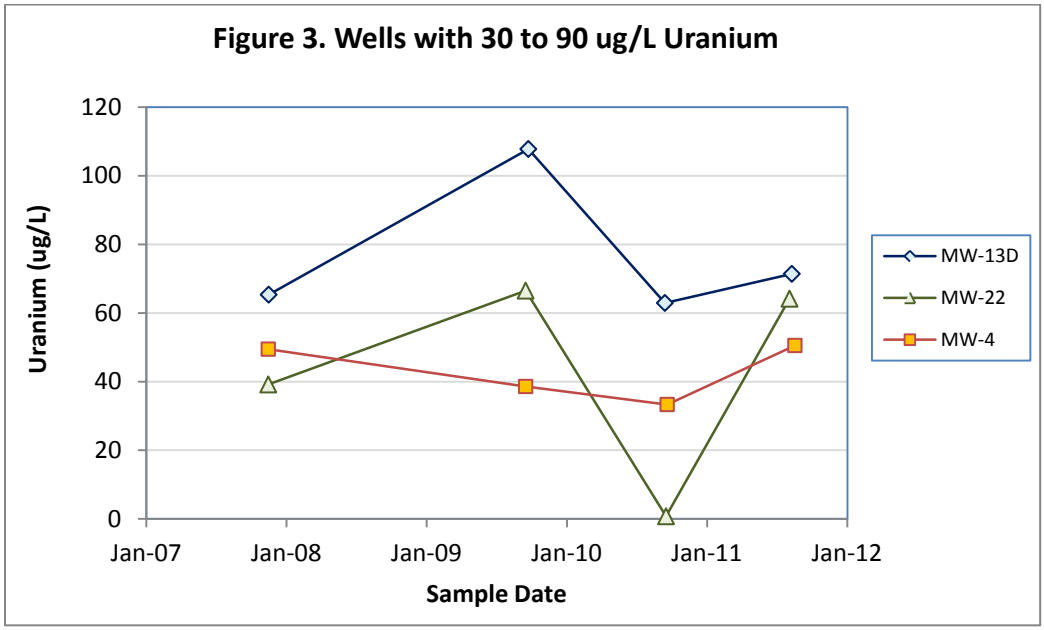


Figure 3. Wells with 30 to 90 ug/L Uranium
120
100
80
60
40
20
0
Uranium (ug/L)
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Sample Date
MW-13D
MW-22
MW-4

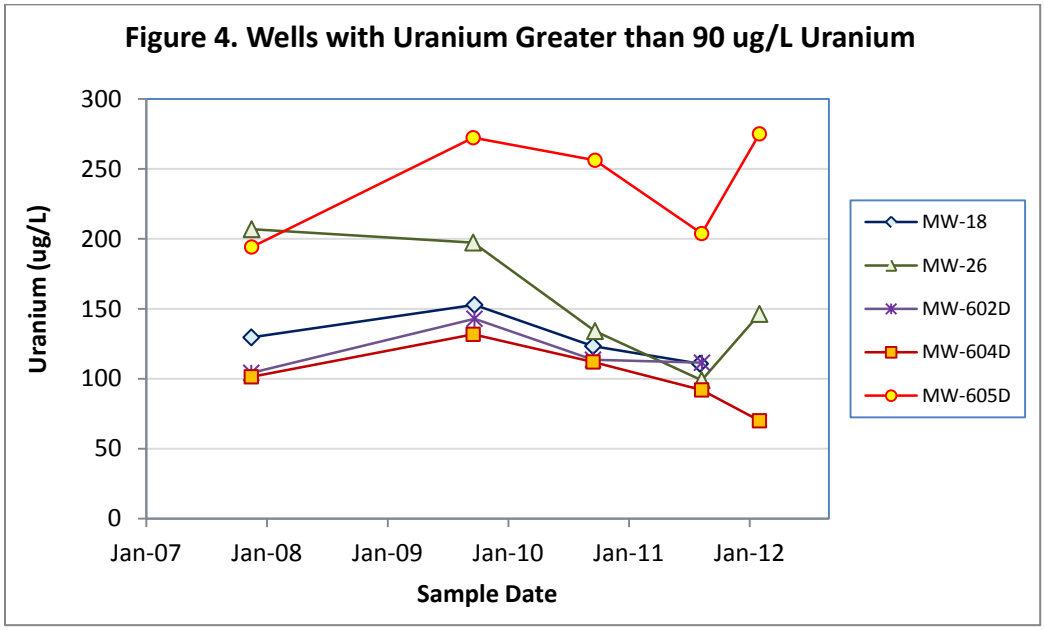


Figure 4. Wells with Uranium Greater than 90 ug/L Uranium
300
250
200
150
100
50
0
Uranium (ug/L)
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Sample Date
MW-18
MW-26
MW-602D
MW-604D
MW-605D

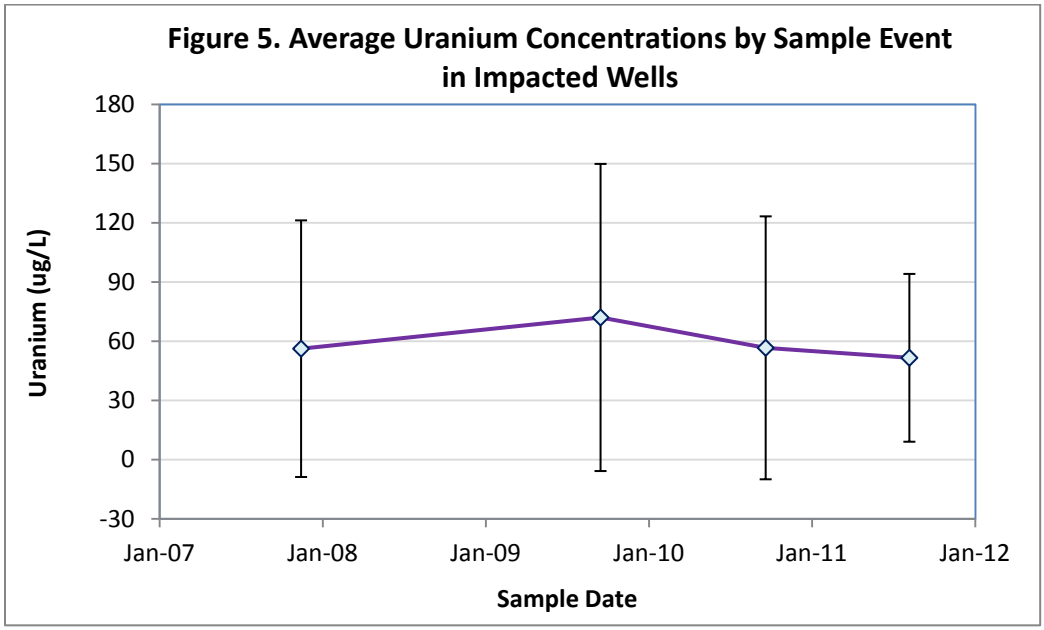


Figure 5. Average Uranium Concentrations by Sample Event in Impacted Wells
Uranium (ug/L)
180
150
120
90
60
30
0
-30
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Sample Date

APPENDIX B

Final Supplemental Sampling Technical Memorandum, Former Guterl Specialty Steel Corporation, Lockport, New York.

Prepared by Shaw Environmental & Infrastructure, Inc.

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

Final
Supplemental Sampling Technical Memorandum

Former Guterl Specialty Steel Corporation
Formerly Utilized Sites Remedial Action Program (FUSRAP) Site
Lockport, New York

U.S. Army Corps of Engineers

Buffalo District

June 2015

Table of Contents

LIST OF TABLES III
LIST OF FIGURES III
LIST OF APPENDICES IV
ACRONYMS AND ABBREVIATIONS V
EXECUTIVE SUMMARY ES-1
ES.1 Introduction ES-1
ES.2 Scope ES-1
ES.3 Hydrogeological and Analytical Results ES-1
ES.4 Conclusions ES-5
1.0 INTRODUCTION 1-1
1.1 Purpose and Scope 1-1
1.2 Project Specific Data Quality Objectives 1-2
1.3 Field Project Personnel/Organization 1-2
1.4 Document Organization 1-2
2.0 METHODS AND PROCEDURES 2-1
2.1 Sampling 2-1
2.1.1 Groundwater 2-1
2.1.2 Seeps and Surface Water 2-3
2.2 High Frequency Monitoring 2-3
2.3 Analytical Program 2-4
2.4 Data Quality 2-5
2.4.1 Field Data Quality 2-5
2.4.2 Laboratory Data Quality and Validation 2-6
2.5 Investigation Derived Waste Disposition 2-6
3.0 HYDROGEOLOGICAL AND ANALYTICAL RESULTS 3-1
3.1 Groundwater Elevations 3-1
3.1.1 Shallow Groundwater Wells 3-1
3.1.2 Deep Groundwater Wells 3-2
3.1.3 Vertical Gradients 3-3
3.2 Quarterly Sampling Field Parameter Results 3-3
3.2.1 pH Results 3-3
3.2.2 Specific Conductivity Results 3-3
3.2.3 DO and ORP Results 3-3

3.3 High Frequency Monitoring Results 3-4
3.4 Uranium Analytical Results 3-5
3.4.1 Groundwater 3-5
3.4.2 Seeps and Surface Water Data 3-8
3.5 VOCs 3-9
3.6 Metals and Anions 3-10
3.7 Reducing Conditions Evaluation 3-10
4.0 SUMMARY AND CONCLUSIONS 4-1
5.0 REFERENCES 5-1

List of Tables

(presented after Text)

Table 2-1 Field Parameters

Table 3-1 Monitoring Well Gauging Data Summary
Table 3-2 Monitoring Well Vertical Gradients
Table 3-3 Total Uranium (Unfiltered and Filtered) – Groundwater Monitoring Wells, August 2011 and October 2012
Table 3-4a Isotopic Uranium – Quarterly Groundwater Monitoring Wells
Table 3-4b Isotopic Uranium – Annual Groundwater Monitoring Wells
Table 3-4c Isotopic Uranium – Seeps and Surface Water
Table 3-5a Groundwater Analytical Results – VOCs, August 2011
Table 3-5b Groundwater and Seeps Analytical Results – VOCs, October 2012
Table 3-6a Groundwater Analytical Results – Metals (Unfiltered and Filtered), August 2011
Table 3-6b Groundwater, Seeps, and Surface Water Analytical Results – Metals (Unfiltered and Filtered), October 2012
Table 3-7a Groundwater Analytical Results – Anions, August 2011
Table 3-7b Groundwater and Seeps Analytical Results – Anions, October 2012

List of Figures

(presented after Tables)

Figure 1-1 Site Location Map

Figure 2-1 Site Plan with Monitoring Well and Seep Sampling Locations (August 2011 – October 2012)

Figure 3-1A Potentiometric Surface Map, Shallow Wells (August 2011)
Figure 3-1B Potentiometric Surface Map, Shallow Wells (January 2012)
Figure 3-1C Potentiometric Surface Map, Shallow Wells (May 2012)
Figure 3-1D Potentiometric Surface Map, Shallow Wells (August 2012)
Figure 3-1E Potentiometric Surface Map, Shallow Wells (October 2012)
Figure 3-2A Potentiometric Surface Map, Deep Wells (August 2011)
Figure 3-2B Potentiometric Surface Map, Deep Wells (January 2012)
Figure 3-2C Potentiometric Surface Map, Deep Wells (May 2012)
Figure 3-2D Potentiometric Surface Map, Deep Wells (August 2012)
Figure 3-2E Potentiometric Surface Map, Deep Wells (October 2012)
Figure 3-3A Total Uranium in Shallow Groundwater and Seeps (August 2011)

List of Figures (continued)

Figure 3-3B Total Uranium in Shallow Groundwater and Seeps (January 2012)
Figure 3-3C Total Uranium in Shallow Groundwater and Seeps (May 2012)
Figure 3-3D Total Uranium in Shallow Groundwater and Seeps (August 2012)
Figure 3-3E Total Uranium in Shallow Groundwater and Seeps (October 2012)
Figure 3-4A Total Uranium in Deep Groundwater (August 2011)
Figure 3-4B Total Uranium in Deep Groundwater (January 2012)
Figure 3-4C Total Uranium in Deep Groundwater (May 2012)
Figure 3-4D Total Uranium in Deep Groundwater (August 2012)
Figure 3-4E Total Uranium in Deep Groundwater (October 2012)
Figure 3-5A VOCs in Shallow Groundwater (August 2011)
Figure 3-5B VOCs in Shallow Groundwater (October 2012)
Figure 3-6A VOCs in Deep Groundwater (August 2011)
Figure 3-6B VOCs in Deep Groundwater (October 2012)
Figure 3-7A TCE, VC, Manganese, Iron, Sulfate, and Total Uranium (Filtered) in Shallow Groundwater (August 2011)
Figure 3-7B TCE, VC, Manganese, Iron, Sulfate, and Total Uranium (Filtered) in Shallow Groundwater (October 2012)
Figure 3-8A TCE, VC, Manganese, Iron, Sulfate, and Total Uranium (Filtered) in Deep Groundwater (August 2011)
Figure 3-8B TCE, VC, Manganese, Iron, Sulfate, and Total Uranium (Filtered) in Deep Groundwater (October 2012)

List of Appendices

Appendix A Daily Reports and Field Notes (Provided on CD)

Appendix B Sample Collection Logs (Provided on same CD as Appendix A)

Appendix C Analytical Data (Provided on same CD as Appendix A)

Appendix D Data Validation Reports (Provided on same CD as Appendix A)

Appendix E IDW Bill of Lading (Provided on same CD as Appendix A)

Appendix F Evaluation of High Frequency Monitoring Data

Appendix G Evaluation of Uranium Concentration Trends

Acronyms and Abbreviations

1,1,1-TCA	1,1,1- trichloroethane
µg/L	micrograms per liter
µm	micrometer
mS/cm	millisiemens per centimeter
bgs	below ground surface
DGI	Data Gap Investigation
DO	dissolved oxygen
DQCRs	Daily Quality Control Reports
DQOs	data quality objectives
EM	Engineer Manual
Fe	iron
FS	Feasibility Study
FSP	Field Sampling Plan
ft	feet or foot
FUSRAP	Formerly Utilized Sites Remedial Action Program
Guterl Steel Site	Guterl Specialty Steel Corporation Site
IDW	Investigation Derived Waste
MCL	maximum contaminant level
Mn	manganese
mg/L	milligrams per liter
msl	mean sea level
mV	millivolts
ORP	oxidation reduction potential
QAPP	Quality Assurance Project Plan
redox	oxidation reduction
RI	Remedial Investigation
SAP	Sampling and Analysis Plan
Shaw	Shaw Environmental & Infrastructure, Inc.
Simonds	Simonds Saw and Steel Company
Site	Guterl Steel Site
SU	Standard Units
SW	surface water
TAL	Target Analyte List
TCE	trichloroethene
USACE	United States Army Corps of Engineers
VC	vinyl chloride
VOCs	volatile organic compounds

Executive Summary

ES.1 Introduction

This Supplemental Sampling Technical Memorandum has been prepared by Shaw Environmental & Infrastructure, Inc. (Shaw) for the former Guterl Specialty Steel Corporation Formerly Utilized Sites Remedial Action Program (FUSRAP) Site (Guterl Steel Site) in Lockport, New York (Figure 1-1).

The purposes of this investigation were to:

- Evaluate the stability of the uranium plume and the effect of seasonal groundwater fluctuation on total uranium concentrations and mobility in groundwater.
- Provide a continuous data set that will record the changes in geochemical parameters that affect the mobility of uranium in groundwater as the water level rises or falls.

ES.2 Scope

High frequency monitoring was performed at 10 key monitoring wells (shown on Figure 2-1), which were selected based on the results of August 2011 groundwater sampling and analysis conducted for the Data Gap Investigation (DGI) conducted at the Guterl Steel Site; these locations included monitoring wells that are located along the plume axis where uranium exceeds the maximum contaminant level (MCL). The high frequency monitoring included continuous monitoring of water levels, pH, specific conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) to help determine the stability of oxidation reduction (redox) conditions and the effect of seasonal water level changes on redox and uranium concentrations.

In addition, the 10 monitoring wells were sampled for total and isotopic uranium (filtered and unfiltered) on a quarterly basis. The correlation of the uranium concentration over time, with the redox indicator parameters over a period of a year, will help establish the impact of redox on uranium mobility.

ES.3 Hydrogeological and Analytical Results

This section provides a discussion of the results of the supplemental sampling program, including groundwater elevations, in-situ monitoring results, uranium concentrations, other analytical results, and parameter correlations.

Groundwater Flow

The shallow groundwater potentiometric surface maps (Figures 3-1A through 3-1E) show a generally southward flow direction with the highest groundwater elevations in the northern area of the Guterl Steel Site. A groundwater divide oriented northwest to southeast that originates in the northwestern area of the Guterl Steel Site is apparent on the potentiometric maps. West of the divide, the groundwater flow direction is towards the quarry; whereas south and east of the divide, groundwater flow is to the southeast towards the canal. In the area of the former facility buildings, the horizontal gradient is relatively low.

The deep groundwater potentiometric surface maps (Figures 3-2A through 3-2E) show similar patterns to the shallow groundwater contours with an apparent general groundwater flow direction to the southeast towards the canal. The groundwater elevation at MW-707DD, located near the center of the Guterl Steel Site, was not used in contouring due to an anomalously low water level gauged in that well. Similar to the shallow groundwater potentiometric surface, the horizontal gradient is relatively low in the area of the former facility buildings.

The vertical gradient at most locations shows a slight downward flow component or is near coincident (magnitude less than 0.01 can be considered near coincident). An upward gradient greater than 0.01 is indicated at one location, the MW-713D/MW-708DD area. The strongest downward gradients (-0.4 to -1.4) are indicated at the MW-26/MW-707DD, MW-710D/ MW-710DD, and the MW-712D/MW-712DD locations. It should be noted that no water has been measured in shallow well MW-712D (the well is dry).

Quarterly Field Parameter and High Frequency Monitoring Results

The following observations are apparent from an evaluation of the quarterly field parameter and the high frequency monitoring data:

- Depth to water/groundwater elevation: based on the quarterly monitoring and high frequency monitoring data, there does not appear to be any significant seasonal variation.
- Specific conductance/conductivity: based on the quarterly monitoring and high frequency monitoring data, there does not appear to be any systematic seasonal variation.
- pH: based on the quarterly monitoring, there does not appear to be any systematic seasonal variation. The high frequency monitoring data were deemed to be less indicative than the quarterly data.
- DO: the significant difference between the quarterly DO data and the high frequency DO data suggest that the latter are of limited usability. However, no discernable seasonal variation is apparent in either dataset.
- ORP: the quarterly ORP data indicate an increase in ORP during the summer (May sampling), but this is not reflected in the ORP readings from the high frequency

sampling. The high frequency monitoring data indicate that the ORP is fairly stable during the monitoring period, with a consistent decrease in the readings from July to October 2012.

Overall, the high-frequency monitoring indicates that the parameters are fairly stable in the wells monitored and there were not any discernable seasonal variations that were consistent between wells. In addition, the ORP and DO results indicate that a range of redox conditions exist at the sampled locations.

Uranium Concentrations

Uranium concentrations greater than 90 micrograms per liter (µg/L) were detected in the shallow groundwater north of Buildings 14 and 47, and appear to trend in a northwest to southeast direction across the Guterl Steel Site towards the canal. Concentrations ranging from 49.5 µg/L to 66.8 µg/L were present in the furthest existing downgradient monitoring well (MW-710D). The highest concentration (304 µg/L) was detected in MW-605D, located near the center of the Guterl Steel Site. The distribution of uranium in deep groundwater appears in a similar orientation as the shallow groundwater; however, the plume is much smaller in areal size as well as concentrations.

Isoconcentration maps of dissolved uranium were prepared using the January, May, August, and October 2012 analytical data; these maps (Figures 3-3A through 3-3E, and Figures 3-4A through 3-4E) were compared to similar maps in the DGI Report that presented the September 2009, September 2010, and August 2011 analytical results. A comparison of these figures suggests that the size and shape of the plume has remained stable. This is supported by a time-trend analysis performed for dissolved uranium summarized below.

Trends at 30 wells that have been sampled four or more times since 2007 were evaluated using the Kendall-Tau test; of those 30, 12 had an average concentration less than 10 µg/L, which most likely represent background concentrations. Only one of the 18 wells that had one or more samples above 10 µg/L showed a statistically significant trend in uranium concentrations over the 5-year monitoring period; that well, MW-602D, is an impacted well and it showed a significant downward trend [significant from the standpoint that there is a high confidence level that the trend is downward; however, the concentration decreased by only 17% (from 131.8 µg/L to 110 µg/L) over a 3-year period from September 2009 to October 2012].

Three of the seep samples exceeded the uranium MCL of 30 µg/L; all three of these samples were collected approximately 300 ft upstream of the emergency water intake.

Volatile Organic Compounds (VOCs)

The October 2012 VOC data were similar to the August 2011 data (see Figures 3-5A, 3-5B, 3-6A, and 3-6B) and show that samples from several of the wells have detectable concentrations of the chlorinated solvents 1,1,1-trichloroethane; 1,1-dichlororethane; 1,1-dichlororethene; chloroethane; chloroform; tetrachloroethene; 1,2-dichlororethene; trichloroethene; and vinyl chloride. Vinyl chloride (VC) and the *cis* isomer of 1,2-dichlororethene are microbial degradation products of trichloroethene (TCE), and their presence usually indicates reducing conditions.

Metals and Anions

Sulfate concentrations in August 2011 ranged from 21.1 milligrams per liter (mg/L) to 2,170 mg/L, and in October 2012 ranged from not detected (less than 2.4 mg/L) to 2,900 mg/L. These results suggest that anaerobic sulfate-reducing conditions do not exist at several sampling locations in the groundwater; however, there are reductive areas where sulfate is low (<50 mg/L), such as in the landfill area and the Excised Area.

Reducing Conditions Evaluation

The presence of reducing conditions in the groundwater was evaluated by plotting the spatial distributions of TCE, VC, filtered/unfiltered manganese and iron ratios, and sulfate concentrations. In the shallow aquifer, the August 2011 and October 2012 (Figures 3-7A and 3-7B) data indicate a reducing area is present in the vicinity of the Excised Area, corresponding with the VC plume. In addition, a second reductive area is present in the vicinity of the landfill. In the deep aquifer: the August 2011 data (Figure 3-8A) show a VC area southwest of the Excised Area and a reductive area northeast of the Excised Area. The VC area was also present in the data from the October 2012 sampling event (Figure 3-8B); the presence of the reductive area northeast of the Excised Area could not be confirmed due to the limited number of wells that were sampled in October 2012.

Uranium can be reduced from a soluble hexavalent form to an insoluble tetravalent form under fairly low redox conditions. These redox conditions are below the conditions required for reductive dechlorination of TCE and DCE to VC, so it is possible for soluble uranium and VC to coexist. This can be seen from the data on Figure 3-7A, which shows wells within the VC plume that have high dissolved uranium concentrations (e.g., MW-25 at 171 µg/L, MW-26 at 94.6 µg/L, MW-604D at 101 µg/L, and MW-710D at 66 µg/L). These wells are located along the central axis of the uranium plume (i.e., MW-26 and MW-604D) or near that axis (for wells MW-25 and MW-710D), suggesting that the uranium is in the mobile hexavalent form despite the presence of VC. The dissolved uranium concentrations for the wells located in the center of the reducing area are, in general, less than 10 µg/L.

ES.4 Conclusions

Based on the results of the supplemental sampling, the following conclusions are drawn:

- The supplemental sampling results are consistent with the data obtained as part of the DGI.
- Groundwater flow directions in the first main fracture zone (deep groundwater) are generally consistent with groundwater flow in the shallow weathered bedrock (shallow groundwater). Groundwater flow in both zones is generally to the south; however it flows to the southeast toward the Erie Canal on the eastern part of the site, and to the southwest toward the quarry on the western part of the site.
- Comparison of filtered and unfiltered total uranium results indicates most of the uranium present is in dissolved form.
- Total uranium is present at concentrations exceeding the MCL in the deep groundwater flowing through the first main fracture zone of the competent dolostone, located between 30 ft and 40 ft deep and corresponds with the screened locations of the deep monitoring wells.
- The horizontal extent of groundwater with total uranium concentrations exceeding the MCL in the first main fracture zone (deep groundwater) covers approximately one-third of the area exceeding the MCL in the shallow weathered bedrock (shallow groundwater). The areas exceeding the MCL are primarily near the buildings in both zones.
- Groundwater with uranium concentrations exceeding MCL is discharging to the Erie Canal.
- The high-frequency monitoring indicates that the parameters are fairly stable in the wells monitored and there were not any discernable seasonal variations.
- Reducing conditions are present in the vicinity of the Excised Area that apparently degrade TCE to VC.

Groundwater flow was observed to discharge at several locations along the northern rock face of the Erie Canal. This discharge represents a fraction of the groundwater flow that exits the shallow and the deep groundwater units underneath the site. The flow paths for the remainder of groundwater have not been documented; potential pathways include flow to the deep bedrock rock formations overlying the Rochester Shale Formation, flow into the Erie Canal (both above and below the water line), and/or flow underneath the Erie Canal into the shallow and deep groundwater across the Erie Canal.

1.0 Introduction

This Supplemental Sampling Technical Memorandum has been prepared by Shaw Environmental & Infrastructure, Inc. (Shaw) for the former Guterl Specialty Steel Corporation Formerly Utilized Sites Remedial Action Program (FUSRAP) Site (Guterl Steel Site) in Lockport, New York (Figure 1-1).

1.1 Purpose and Scope

In accordance with the United States Army Corps of Engineers (USACE), Buffalo District Contract Number W912QR-08-D-0013, Delivery Order No. DN03, Shaw has prepared this Supplemental Sampling Technical Memorandum to document the collection of additional data to supplement the Data Gap Investigation (DGI) and to be used in the preparation of the Feasibility Study (FS) for the Guterl Steel Site, previously known as the Simonds Saw and Steel Company (Simonds).

The focus of this Supplemental Sampling Technical Memorandum is to gather additional information to support the evaluation and selection of a remedial action for impacted media at the Guterl Steel Site. Specifically, the purposes of the supplemental sampling were to:

- Evaluate the stability of the uranium plume and the effect of seasonal groundwater fluctuation on total uranium concentrations and mobility in groundwater.
- Provide a continuous data set that will record the changes in geochemical parameters that affect the mobility of uranium in groundwater as the water level rises or falls.

To achieve these purposes, 10 monitoring wells were identified for high frequency monitoring and quarterly sample collection; these wells included wells that are located along the plume axis where uranium exceeds the maximum contaminant level (MCL). The high frequency monitoring included continuous monitoring of water levels, pH, specific conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) to help determine the stability of oxidation reduction (redox) conditions and the effect of seasonal water level changes on redox and uranium concentrations. In addition, the 10 monitoring wells were sampled for total and isotopic uranium (filtered and unfiltered) on a quarterly basis. The correlation of the uranium concentration over time, with the redox indicator parameters over a period of a year, will help establish the impact of redox on uranium mobility.

Sampling and analysis activities were conducted in accordance with the USACE, Buffalo District, Scope of Work, Data Gap Investigation to Support the Feasibility Study for the Former Guterl Specialty Steel Corporation, Lockport, New York, dated March 2011.

1.2 Project Specific Data Quality Objectives

The following data quality objective addresses the purpose of the supplemental sampling:

- DQO 8 – Determine the effects of seasonal changes in groundwater levels on the mobility of uranium in groundwater.

1.3 Field Project Personnel/Organization

Staff responsibilities were generally consistent with those provided in Section 2 of the Addendum to the Field Sampling Plan (FSP) (USACE, 2011a) and the Remedial Investigation (RI) FSP (2007) (USACE, 2007). Mr. Kevin Cronin served as the Site Supervisor and Mr. Jeffery Smith served as the Sampling Technician. Mr. Cronin is a geologist and is Site Safety and Health Officer trained.

1.4 Document Organization

The following sections are provided in this Supplemental Sampling Technical Memorandum:

Section 1.0 Introduction

Section 2.0 Methods and Procedures

Section 3.0 Hydrogeological and Analytical Results

Section 4.0 Summary and Conclusions

Section 5.0 References

In addition, the findings in this document are supported by information in the following appendices:

Appendix A Daily Reports and Field Notes

Appendix B Sample Collection Logs

Appendix C Analytical Data

Appendix D Data Validation Reports

Appendix E Investigation Derived Waste (IDW) Bill of Lading

Appendix F Evaluation of High Frequency Monitoring Data

Appendix G Evaluation of Uranium Concentration Trends

2.0 Methods and Procedures

Information presented in this section pertains to field activities conducted from August 2011 to October 2012. Field activities and analytical procedures were performed in accordance with the *Sampling and Analysis Plan Addendum* (USACE, 2011 a,b,c), which includes:

- Volume 1 – FSP
- Volume 2 – Quality Assurance Project Plan (QAPP)
- Volume 3 – Accident Prevention Plan

These documents incorporate applicable sections of the RI FSP (USACE, 2007). Field procedures are discussed in the following sections.

2.1 Sampling

The following section presents information on groundwater and seep sampling. Figure 2-1 shows the locations of monitoring wells and seeps sampled for the supplemental sampling program.

2.1.1 Groundwater

Groundwater samples were collected during five sampling rounds:

- August 4 through 23, 2011: full round (51 wells); the results of this sampling effort are presented in the *Final Technical Memorandum, Data Gap Investigation to Support the Feasibility Study for the Former Guterl Specialty Steel Corporation, Lockport, New York* (USACE, 2012)
- January 30 through February 2, 2012: the 10 wells on Figure 2-1 that were selected for quarterly monitoring based on the results of the August 2011 groundwater sampling and analysis
- May 3 and 4, 2012: the 10 quarterly monitoring wells
- August 3 through 6, 2012: the 10 quarterly monitoring wells
- October 22 through 25, 2012: the 10 quarterly monitoring wells plus 24 wells sampled by the USACE Buffalo District

Collection of groundwater samples from monitoring wells involved three general steps:

1. Well purging
2. Measurement and stabilization of field parameters
3. Groundwater sample collection.

These are the three steps of sample collection that were consistently used at each well with adequate yield. However, at wells that purged dry, samples were collected after sufficient volume had recharged. Groundwater sampling activities followed the requirements of *USACE Engineer Manual (EM) 200-1-3 Engineering Design – Requirements for the Preparation of Sampling and Analysis Plans, Appendix C.2, Groundwater Sampling* (USACE, 2001).

A headspace reading was collected from each well prior to sample collection. Purging of monitoring wells was accomplished using a peristaltic pump, a disposable bailer, or a low-flow submersible pump. The use of a peristaltic pump with Teflon® tubing was the preferred method (i.e., down-hole Teflon® line, flexible pump roller tube, and Teflon® outflow tube). A bailer was used only if attempts to use a submersible pump were unsuccessful (that is, insufficient recharge).

In order to minimize the quantity of liquid IDW generated as a result of well purging, wells were micro-purged where conditions permitted, in accordance with EM 200-1-3 C.2 (USACE, 2001) as follows:

- A submersible pump or peristaltic pump was used for purging.
- Pump intake or tubing was located within the well screened interval.
- Purge rate did not exceed 100 milliliters per minute unless it was shown that higher rates would not disturb the stagnant water column above the well screen (that is, would not result in drawdown).
- Volume purged was based on the stabilization of the following required water quality parameters for three consecutive readings (measured at minimum 5-minute intervals) for:
  - pH: variation ± 0.2 standard units (SUs)
  - DO: variation ± 10 percent
  - Specific conductivity: variation ± 3 percent
  - Temperature: variation ± 1 degree Centigrade
  - Turbidity: variation ± 10 percent
  - ORP: for data needs, not as a stabilization parameter.
- Sample collection occurred immediately after micro-purging.

Water quality parameters were measured using a YSI™ 6920 V2 multi-parameter water quality meter and are summarized in Table 2-1.

Filtered and unfiltered groundwater samples were collected for the supplemental sampling program. Filtered samples were collected using 0.45 micrometer (µm) disposable in-line pore

filter attached to the discharge line of the pump. Filters were replaced between sample locations and, if needed, as they became restricted by solids buildup at any one location.

Daily Reports and Field Notes are located in Appendix A. Sample collection logs are located in Appendix B. Section 2.3 summarizes the analyses that were conducted on the samples.

2.1.2 Seeps and Surface Water

Seep and/or surface water (SW) samples were collected by USACE Buffalo District personnel at the following locations shown on Figure 2-1:

- August 2011: Seep-1108-01 and Seep-1108-02
- December 2011: Seep-1112-01, Seep-1112-02, Seep-1112-03, Seep-1112-04, Seep-1112-05, and Seep-1112-06
- January 2012: SW-1201-01
- May 2012: Seep-1205-01, Seep-1205-02, Seep-1205-03, SW-1205-01, and SW-1205-02
- October 2012: Seep-1210-01, Seep-1210-02, Seep-1210-03, and SW-1210-01

The sample identification nomenclature was AAAA-XXYY-ZZ, where:

- AAAA denotes sample medium (Seep or SW)
- XX denotes year
- YY denotes month
- ZZ denotes the sample number for the sampling event

The samples were collected using disposable sample containers provided by the laboratory. Samples were collected by placing a stainless steel container underneath the seep and letting the water accumulate until the desired volume was collected. The water was then transferred to the individual sample containers that were pre-filled with the required preservatives, after performing field filtration, if required for the parameter of interest.

Filtered samples were collected using a 0.45 µm disposable in-line pore filter attached to the discharge line of a peristaltic pump. Filters were replaced between seep sample locations. With the exception of the filters, no wastes were generated during the sampling process.

2.2 High Frequency Monitoring

As noted in Section 1.1, 10 key monitoring wells were selected for 1 year of high frequency monitoring based on the results of the August 2011 sampling; the monitoring wells that were selected for further sample collection include wells that are located along the plume axis where

uranium exceeds the MCL. The wells that were included in these sampling events were shallow/deep well pairs MW-26/MW-707DD, MW-604D/MW-709DD, MW-605D/MW-704DD, MW-710D/MW-710DD, and MW-713D/MW-708DD. These wells included seven wells installed during the DGI field work (the 700-series wells) and three wells installed during previous investigations (MW-26, MW-604D, and MW-605D).

Each selected well was equipped with a pressure transducer (Troll 500, manufactured by In-Situ™) and a multi-parameter water quality meter (MP Troll 9500, manufactured by In-Situ™), with data logging capabilities. The Troll 500 and the MP Troll 9500 meters were configured so that they logged a reading every 4 hours (six times per day). The Troll 500 monitored depth to water, whereas the MP Troll-9500 monitored the following water quality parameters:

- Specific conductance
- Temperature
- pH
- DO
- ORP

The data logged by the meters was retrieved using a laptop computer. Any necessary cleaning, maintenance, and calibration was performed using the procedures identified in the MP Troll 9500 Operators Manual.

2.3 Analytical Program

Following collection, the samples were sent to Test America-St. Louis, in Earth City, Missouri. Courier and shipping services were provided by Test America-Buffalo, New York. Analytical methods were consistent with the methods provided in the QAPP (USACE, 2011b). Analytical data are presented in Appendix C.

Groundwater samples were analyzed for the following parameters:

- August 2011 (51 monitoring wells):
  - Unfiltered samples: anions (chloride, fluoride, sulfate, nitrate, nitrite, and ortho-phosphate); general chemistry (alkalinity, total dissolved solids); and VOCs
  - Filtered and unfiltered samples: total and isotopic analyses for uranium and Target Analyte List (TAL) metals
- January/February 2012, May 2012, and August 2012 (10 quarterly monitoring wells):
  - Filtered and unfiltered samples for total and isotopic analyses for uranium.

- October 2012:
  - The 10 quarterly monitoring wells: filtered and unfiltered samples for total and isotopic analyses for uranium
  - The 24 wells sampled by USACE Buffalo District personnel: the August 2011 analytical suite.

Seep and/or surface water samples were analyzed for the following parameters:

- August 2011: unfiltered samples for anions, general chemistry, and VOCs; filtered and unfiltered samples for total and isotopic uranium and TAL metals
- December 2011: unfiltered samples for total uranium, TAL metals, anions, general chemistry and VOCs
- January 2012: filtered and unfiltered samples for total and isotopic uranium
- May 2012: filtered and unfiltered samples for total and isotopic uranium and TAL metals
- October 2012: unfiltered samples for anions, general chemistry, and VOCs; filtered and unfiltered samples for total and isotopic uranium and TAL metals

It should be noted that no seep or surface water samples were collected in August 2012 because due to dry weather conditions there were no visible seeps in the canal walls.

2.4 Data Quality

2.4.1 Field Data Quality

Daily Quality Control Reports (DQCRs) were prepared consistent with the procedures in Section 6.2 of the RI FSP (USACE, 2007).

During the field investigation activities performed for this project DQCRs were prepared, signed, and dated by the Field Geologist; DQCRs are compiled in Appendix A. These reports were completed each day that work activities were performed on site and filed in the field office. A copy of the DQCRs were submitted to the USACE Project Manager on a weekly basis (or as otherwise agreed to) during field operations. Each DQCR included a summary of activities performed at the site, weather conditions, results of the field activities performed including departures from the approved Sampling and Analysis Plan (SAP), problems encountered during field activities, and any instructions received from USACE personnel.

2.4.2 Laboratory Data Quality and Validation

Radiological groundwater data validation for sample data obtained by Shaw was conducted by a third party validator, Kestrel Environmental Technologies, Inc. The data validation reports are presented in Appendix D.

Data validation for sample data obtained by USACE was conducted by USACE personnel.

2.5 Investigation Derived Waste Disposition

IDW generated during the supplemental sampling program consisted of liquids (e.g., water from decontamination, well development, and well purging operations). The IDW was sampled and analyzed, then transported to a properly licensed facility for disposal (Cycle Chem, Inc., New Jersey).

The bill of lading for the IDW is presented in Appendix E.

3.0 Hydrogeological and Analytical Results

This section provides a discussion of the results of the supplemental sampling program, including groundwater elevations; quarterly sampling field monitoring and high frequency monitoring results; and uranium, VOCs, metals, and anions analytical results.

3.1 Groundwater Elevations

A summary of the monitoring well gauging data for the August 2011, January 2012, May 2012, August 2012, and October 2012 sampling events is presented in Table 3-1. The following sections discuss the data for the shallow and deep ground water wells, respectively.

3.1.1 Shallow Groundwater Wells

Shallow bedrock groundwater elevation data from wells screened within the upper 23 feet (ft) of bedrock were used to generate the potentiometric surface contours on Figures 3-1A through 3-1E for the August 2011 to October 2012 sampling events. These maps include data from the existing shallow bedrock wells and the five shallow bedrock wells installed in 2011.

Depths to water in the shallow bedrock wells (MW-26, 604D, 605D, 710D, and 713D) showed the following ranges during the August 2011 to October 2012 gauging events:

- August 2011: 3.21 ft below ground surface (bgs) to 12.20 ft bgs
- January 2012: 0.8 ft bgs to 11.48 ft bgs
- May 2012: 1.21 ft bgs to 11.52 ft bgs
- August 2012: 4.22 ft bgs to 13.09 ft bgs
- October 2012: 2.00 ft bgs to 12.62 ft bgs

In addition to the data from the five monitoring wells listed above, 37 additional monitoring wells were gauged during the August 2011 and October 2012 annual sampling events. A review of the entire data set (annual and quarterly data) excluding the dry wells MW-600S and MW-712S indicates that the variation in depth to groundwater at individual monitoring wells ranged from a low of 0.23 ft at MW-17 to a high of 3.87 ft at MW-604D, with the average variation per monitoring well being 1.26 ft.

The shallow groundwater potentiometric surface maps show a generally southward flow direction with the highest groundwater elevations in the northern area of the Guterl Steel Site. A groundwater divide oriented northwest to southeast that originates in the northwestern area of the Guterl Steel Site is apparent on the potentiometric maps. West of the divide, the groundwater flow direction is towards the quarry; whereas south and east of the divide, groundwater flow is to

the southeast towards the canal. In the area of the former facility buildings, the horizontal gradient is relatively low.

3.1.2 Deep Groundwater Wells

Deep bedrock groundwater elevation data from the 12 wells installed in 2011 and screened within the 29- to 40-ft interval in the first main fracture zone were used to generate the potentiometric surface contours on Figures 3-2A through 3-2E for the August 2011 to October 2012 sampling events.

Depths to water in the deep bedrock wells (704DD, 707DD, 708DD, 709DD, and 710DD) showed the following ranges during the August 2011 to October 2012 gauging events:

- August 2011: 3.10 ft bgs to 35.10 ft bgs
- January 2012: 0.64 ft bgs to 30.58 ft bgs
- May 2012: 0.9 ft bgs to 23.41 ft bgs
- August 2012: 4.60 ft bgs to 21.93 ft bgs
- October 2012: 2.39 ft bgs to 23.43 ft bgs

In addition to the data from the five monitoring wells listed above, seven additional monitoring wells were gauged during the August 2011 and October 2012 annual sampling events. A review of the entire data set (annual and quarterly data) indicates that the variation in depth to groundwater at individual monitoring wells ranged from a low of 0.03 ft at MW-711DD to a high of 18.85 ft at MW-707DD, with average variation per monitoring well being 5.56 ft. If data from monitoring wells MW-707DD, MW-703DD, and MW-710DD (January 2012 only) are excluded due to anomalously large variations, the average variation per monitoring well is 1.98 ft with a maximum variation of 3.96 ft in monitoring well MW-704DD.

The deep groundwater potentiometric surface maps show similar patterns to the shallow groundwater contours with an apparent general groundwater flow direction to the southeast towards the canal. The groundwater elevation at MW-707DD, located near the center of the Guterl Steel Site, was not used in contouring due to an anomalously low water level (August 2011 - 561.22 ft mean sea level [msl], January - 580.07 ft msl, May - 574.98 ft msl, August - 574.39 ft msl, and October - 578.07 ft msl) gauged in that well. Similar to the shallow groundwater potentiometric surface, the horizontal gradient is relatively low in the area of the former facility buildings.

3.1.3 Vertical Gradients

Vertical gradients have been calculated using the groundwater elevation data from nested shallow and deep bedrock wells (or shallow and deep wells located in close proximity). Results presented on Table 3-2 show whether an upward (positive values) or downward (negative values) flow component is indicated and the magnitude. Most locations show a slight downward flow component or are near coincident (magnitude less than 0.01 can be considered near coincident). An upward gradient greater than 0.01 is indicated at one location, the MW-713D/MW-708DD area; it should be noted that these wells are relatively far apart and are in an area with a steep horizontal gradient. The strongest downward gradients (-0.4 to -1.4) are indicated at the MW-26/MW-707DD, MW-710D/MW-710DD, and the MW-712D/MW-712DD locations. It should be noted that no water has been measured in shallow well MW-712D (the well is dry), so the inferred downward gradient is based upon the elevation of the well bottom.

3.2 Quarterly Sampling Field Parameter Results

Monitoring well field parameter data for the high frequency wells are presented in Table 2-1 and summarized below.

3.2.1 pH Results

The mean pH reading from the shallow wells is 7.25 SU and in the deep wells is 7.32 SU. Of the 48 measurements, 43 were in the range of 7.03 SU to 7.8 SU, 4 were below 7 SU (between 6.48 SU and 6.98 SU), and 1 was above 8 SU. The lone value above 8 SU – 8.72 SU in MW-707DD in August 2011 – was not repeated in any other sampling event and the highest subsequent reading was 7.4 SU.

3.2.2 Specific Conductivity Results

The mean specific conductivity reading from the shallow wells is 1.39 millisiemens per centimeter (mS/cm) and in the deep wells is 3.9 mS/cm. With the exception of well MW-707DD, the 48 specific conductivity measurements range from 0.6 to 2.88 mS/cm. The four specific conductivity measurements for well MW-707DD ranged from 10.18 to 19.04 mS/cm; well MW-707DD exhibits high total dissolved solids derived from high cation and anion concentrations unique to this well.

3.2.3 DO and ORP Results

The mean DO reading from the shallow wells is 2.37 milligrams per liter (mg/L) and in the deep wells is 3.47 mg/L. The 48 DO measurements range from 0.18 to 8.15 mg/L.

The mean ORP reading from the shallow wells is 12.51 millvolts (mV) and in the deep wells is 49.47 mV. Of the 48 ORP readings, 32 (67%) were positive, with the highest reading being

326.7 mV. Twelve of the 16 negative measurements were distributed among eight wells, with readings ranging from -4.6 mV to -143.6 mV. Well MW-713D was the only well that consistently had negative ORP, with the readings ranging from -175.6 mV to -254.2 mV; this well is not impacted with VOC contamination yet is downgradient of the VOC plume, thus impacted by the reduced conditions in the plume.

Table 2-1 shows some minor seasonal ORP trends that appear to increase during recharge periods (December-May) and decline during summer to early fall periods when evapotranspiration limits recharge; this is most apparent in wells MW-26, MW-604D, MW-605D, MW-704DD, and MW-710DD. The other "DD" wells show a possible lag in these data or are not definitive.

The ORP and DO data indicate that a range of redox conditions exist at the sampled locations.

3.3 High Frequency Monitoring Results

As noted in Section 2.2, 10 wells were equipped with In-Situ™ Troll 500 and MP Troll 9500 meters to monitor depth to water and the following water quality parameters:

- Specific conductance
- Temperature
- pH
- DO
- ORP

An evaluation of the high frequency monitoring data is presented in Appendix F and summarized below:

- Depth to water/groundwater elevation: based on the quarterly monitoring (Table 2-1) and high frequency monitoring data, there does not appear to be any significant seasonal variation.
- Specific conductance/conductivity: based on the quarterly monitoring (Table 2-1) and high frequency monitoring data, there does not appear to be any systematic seasonal variation; however, the data show short-term reactions to precipitation events, which is indicative of ion loading of recharge through the site soils.
- pH: based on the quarterly monitoring (Table 2-1), there does not appear to be any systematic seasonal variation. The high frequency monitoring data showed a broader range than the quarterly data and, hence, were deemed to be less indicative than the quarterly data.

- DO: the significant difference between the quarterly DO data (in Table 2-1) and the high frequency DO data suggest that the latter are of limited usability. However, no discernable seasonal variation is apparent in either dataset.
- ORP: the quarterly ORP data (in Table 2-1) indicate an increase in ORP during the summer (May sampling), but this is not reflected in the ORP readings from the high frequency sampling. The high frequency monitoring data indicate that the ORP is fairly stable during the monitoring period, with a consistent decrease in the readings from July to October 2012.

Overall, the high-frequency monitoring indicates that the parameters are fairly stable in the wells monitored and there were not any discernable seasonal variations that were consistent between wells.

3.4 Uranium Analytical Results

The following sections discuss uranium data for groundwater and seep/surface water samples collected from August 2011 through October 2012 and presented in the following tables and figures:

- Table 3-3 Total Uranium (Unfiltered and Filtered) – Groundwater Monitoring Wells, August 2011 and October 2012
- Table 3-4a Isotopic Uranium – Quarterly Groundwater Monitoring Wells
- Table 3-4b Isotopic Uranium – Annual Groundwater Monitoring Wells
- Table 3-4c Isotopic Uranium – Seeps and Surface Water
- Figure 3-3A Total Uranium in Shallow Groundwater and Seeps (August 2011)
- Figure 3-3B Total Uranium in Shallow Groundwater and Seeps (January 2012)
- Figure 3-3C Total Uranium in Shallow Groundwater and Seeps (May 2012)
- Figure 3-3D Total Uranium in Shallow Groundwater and Seeps (August 2012)
- Figure 3-3E Total Uranium in Shallow Groundwater and Seeps (October 2012)
- Figure 3-4A Total Uranium in Deep Groundwater (August 2011)
- Figure 3-4B Total Uranium in Deep Groundwater (January 2012)
- Figure 3-4C Total Uranium in Deep Groundwater (May 2012)
- Figure 3-4D Total Uranium in Deep Groundwater (August 2012)
- Figure 3-4E Total Uranium in Deep Groundwater (October 2012)

3.4.1 Groundwater

The following sections present the following:

- Comparison of the filtered and unfiltered data

- Presentation of the data for the wells sampled on a quarterly and annual basis, broken down by shallow and deep groundwater wells
- Evaluation of the plume orientation trends

3.4.1.1 Filtered and Unfiltered Data

Table 3-3 contains results for unfiltered groundwater samples and filtered sample results and a comparison of the results (unfiltered versus filtered) for total uranium in mass units of micrograms per liter (µg/L). There is a relatively small difference between unfiltered and filtered concentrations; the following observations are made for the ratios of filtered to unfiltered results for the August 2011 data:

- Of the 57 comparisons, 34 were less than 1 (higher unfiltered results), 4 were equal to 1, and 19 were greater than 1 (higher filtered results)
- 42 of the ratios were between 0.9 and 1.1, and 33 were between 0.95 and 1.05
- The average ratio of filtered:unfiltered was 1.06 and the median ratio was 0.99

The unfiltered and filtered results were also similar in the October 2012 data; the following observations are made for the ratios of filtered to unfiltered results for the August 2011 data:

- Of the 37 comparisons, 14 were less than 1 (higher unfiltered results), 3 were equal to 1, and 20 were greater than 1 (higher filtered results)
- 32 of the ratios were between 0.9 and 1.1, and 28 were between 0.95 and 1.05
- The average ratio of filtered:unfiltered was 1.06 and the median ratio was 1.01

In light of the similarities between the filtered and unfiltered data, the remainder of discussion on the extent of uranium in groundwater will reference filtered (dissolved) concentrations of total uranium.

3.4.1.2 Quarterly Sampling Data

Table 3-4a presents the results of the monitoring wells that were sampled on a quarterly basis from August 2011 through October 2012. The following is a summary of the results:

- Shallow wells: the total uranium concentrations in groundwater samples from the shallow wells (MW-26, MW-604D, MW-605D, MW-710D, and MW-713D) ranged from 0.25 µg/L (MW-713D in January 2012) to 304 µg/L (MW-605D – Duplicate in January 2012). With the exception of MW-26 – which increased from 94.6 µg/L in August 2011 to 260 µg/L in October 2012 – the data for the other four shallow wells were consistent

over the five sampling events. It should be noted that MW-26 is located near the center of the plume.

The uranium data from wells MW-605D to MW-26 to MW-604D may show a progression of concentrations through the groundwater system along the center axis of the shallow groundwater plume. Well MW-605D shows a high point in January 2012, which then appears in MW-26 in August-October 2012 and then in MW-604D in October 2012, thus possibly indicating a 8 to 10 month lag in transport. The data for MW-605D and MW-26 also may suggest that, with the exception of the last sampling event in October 2012, uranium concentrations in these two wells more or less increase or decrease in unison rather than having a lag.

- Deep wells: the total uranium concentrations in groundwater samples from the deep wells (MW-704DD, MW-707DD, MW-708DD, MW-709DD, and MW-710DD) ranged from 8.3 µg/L (MW-707DD in August 2012) to 88.5 µg/L (MW-709DD in January 2012). The uranium concentrations in wells MW-704DD (upgradient side of the plume) and MW-709DD (center of the plume) increased between the August 2011 and January 2012 sampling events (from 26.3 µg/L to 80.2 µg/L and from 55.4 µg/L to 88.5 µg/L, respectively) but were relatively consistent over the last four events. The uranium concentrations in wells MW-707DD (center of the plume) and MW-710DD (downgradient side of the plume) decreased over the five sampling events (from 33.9 µg/L to 8.4 µg/L and 67 µg/L to 28.3 µg/L, respectively). The uranium concentration in well MW-708DD, which is located on the side of the plume, was relatively consistent over the five sampling events (ranged from 18.3 µg/L to 23.2 µg/L).

3.4.1.3 Annual Sampling Data

Table 3-4b presents the results of the monitoring wells that were sampled on an annual basis: August 2011 and October 2012. The following is a summary of the results:

- Shallow wells: the total uranium concentrations in groundwater samples from the 22 shallow wells ranged from 1.54 µg/L (MW-600D in October 2012) to 174 µg/L (MW-25 – Duplicate in August 2011). The data for 15 of the shallow wells were consistent between the two sampling events, with three wells (MW-2, MW-22, and MW-24) decreasing and four wells (MW-9, MW-11, MW-13D, and MW-18) increasing. Wells MW-9 and MW-11 are located on the southeast end of the property, near well MW-2 (which showed a decrease); thus, there is no apparent conclusion from the changes in the shallow well data.
- Deep wells: the total uranium concentrations in groundwater samples from the two deep well (MW-711DD and MW-712DD) ranged from 1.63 µg/L (MW-711DD in October

2012) to 38.8 µg/L (MW-712DD in August 2011). The data were relatively consistent between the two sampling events.

3.4.1.4 Plume Orientations and Trends

Uranium concentrations greater than 90 µg/L were detected in the shallow groundwater north of Buildings 14 and 47, and appear to trend in a northwest to southeast direction across the Guterl Steel Site towards the canal. Concentrations ranging from 49.5 µg/L to 66.8 µg/L were present in the furthest existing downgradient monitoring well (MW-710D). The highest concentration (304 µg/L) was detected in MW-605D, located near the center of the Guterl Steel Site. The distribution of uranium in deep groundwater appears in a similar orientation as the shallow groundwater; however, the plume is much smaller.

As noted above, isoconcentration maps of dissolved uranium were prepared using the January, May, August, and October 2012 analytical data; these maps were compared to similar maps in the DGI Report that presented the September 2009, September 2010, and August 2011 analytical results. A comparison of these figures suggests that the size and shape of the plume has remained stable. This is supported by a time-trend analysis performed for dissolved uranium provided in Appendix G and summarized herein.

Trends at 30 wells that have been sampled four or more times since 2007 were evaluated using the Kendall-Tau test; of those 30, 12 had an average concentration less than 10 µg/L, which most likely represent background concentrations. Test results are shown in Table 1 in Appendix G. Only one of the 18 wells that had one or more samples above 10 µg/L showed a statistically significant trend in uranium concentrations over the 5-year monitoring period; that well, MW-602D, is an impacted well and it showed a significant downward trend [significant from the standpoint that there is a high confidence level that the trend is downward; however, the concentration decreased by only 17% (from 131.8 µg/L to 110 µg/L) over a 3-year period from September 2009 to October 2012]. Additional information is provided in Appendix G.

3.4.2 Seeps and Surface Water Data

As noted in Section 2.1.2, seep and surface water samples were collected in August 2011, December 2011, January 2012, May 2012, and October 2012; isotopic and total uranium data from these events are presented on Table 3-4c.

The 18 seep and surface water samples may be separated into the following intervals (total dissolved uranium data in parentheses):

- Downstream of site (one sample): SEEP-1210-02 (0.913 µg/L)

- Downstream of and near the emergency water intake (one seep and three surface water samples): SEEP-1112-06 (23.2 µg/L), SW-1201-01 (0.587 µg/L), SW-1205-02 (0.49J µg/L)
- Upstream/within 500 ft of emergency water intake (nine seep and one surface water samples): SEEP-111205 (24.9 µg/L), SEEP-1112-04 (25.9 µg/L), SEEP-1210-03 (36.8 µg/L), SEEP-1112-03 (24.8 µg/L), SEEP-1210-01 (33 µg/L), SEEP-1108-01 (44.3 µg/L), SEEP-1205-03 (20.8 µg/L), SW-1205-01 (0.51J µg/L), SEEP-1112-02 (3.47 µg/L), SEEP-1112-01 (5.85 µg/L), SW-1210-01 (0.595 µg/L)
- Upstream/more than 500 ft of emergency water intake (three seep samples): SEEP-1205-02 (5.9 µg/L), SEEP-1205-01 (5.3 µg/L), and SEEP-1108-02 (6.2 µg/L)

It should be noted that samples collected December 2011 (the 1112 set) were not filtered; thus, the data are for unfiltered (total) uranium as opposed to filtered (dissolved) uranium.

Based on the data presented in Table 3-4c and summarized above, the following observations may be made:

- Three of the seep samples exceeded the uranium MCL of 30 µg/L; all three of these samples were collected approximately 300 ft upstream of the emergency water intake
- The three seep samples exceeding the uranium MCL were collected in August 2011 and October 2012; samples collected in the same vicinity in December 2011 and May 2012 did not exceed the MCL
- The three seep samples collected more than 500 ft upstream of the emergency water intake showed similar uranium concentrations (from 5.3 µg/L to 6.2 µg/L)
- The four surface water samples all had uranium concentrations less than 1 µg/L

3.5 VOCs

Tables 3-5a and 3-5b present the analytical results for VOCs for the August 2011 (33 wells, 2 seeps, and 5 duplicate samples) and October 2012 (20 wells, 3 seeps, and 1 surface water location) sampling events, respectively. Figures 3-5A and 3-5B show the spatial distributions of VOCs and trichlorothene (TCE) and vinyl chloride contours (VC) in the shallow groundwater units for the August 2011 and October 2012 sampling events, respectively; while Figures 3-6A and 3-6B show the spatial distributions of VOCs and TCE/VC contours in the deep groundwater units for the August 2011 and October 2012 sampling events, respectively. Similar to the August 2011 data, the October 2012 data show that samples from several of the wells have detectable concentrations of the chlorinated solvents 1,1,1-trichloroethane (1,1,1-TCA); 1,1-

dichlororethane; 1,1-dichlororethene; chloroethane; chloroform; tetrachloroethene; 1,2-dichlororethene; TCE; and VC.

Vinyl chloride and the *cis* isomer of 1,2-dichlororethene are microbial degradation products of TCE, and their presence usually indicates reducing conditions. As shown in Figures 3-5A and 3-5B (shallow groundwater unit, August 2011 and October 2012 sampling), the area inscribed by the 1 µg/L VC contour is smaller than the area inscribed by the 1 µg/L TCE contour; however, both parameters showed similar locations of elevated results. In the deep groundwater unit for the August 2011 and October 2012 sampling (Figures 3-6A and 3-6B), the 1 µg/L contour areas for VC and TCE are similar in size and location.

In the shallow groundwater unit, 1,1,1-TCA was detected at concentrations in excess of 200 µg/L in closely spaced wells installed along the western side of the Excised Area (e.g. wells MW-23, MW-4, MW-25 and MW-26). In general, the 1,1,1-TCA concentrations were less than 10 µg/L near the site boundary. In the deep groundwater unit, the highest 1,1,1-TCA concentrations (ranging from 13 µg/L to 28 µg/L) were found in wells MW-709DD and MW-710DD, near the downgradient site boundary. No other deep well had a 1,1,1-TCA concentration over 3 µg/L.

3.6 Metals and Anions

Tables 3-6a and 3-6b present the analytical results for metals for the August 2011 (51 wells and 6 duplicate samples) and October 2012 (25 wells, 3 seeps, and 1 surface water location) sampling events, respectively; while Tables 3-7a and 3-7b present the analytical results for anions for the August 2011 and October 2012 sampling events, respectively. The analytical data for the October 2012 event was provided by USACE Buffalo District and is included here for completeness.

Sulfate concentrations in August 2011 ranged from 21.1 mg/L to 2,170 mg/L, and in October 2012 ranged from not detected (less than 2.4 mg/L) to 2,900 mg/L. These results suggest that anaerobic sulfate-reducing conditions do not exist at several locations in the groundwater; however, there are reductive areas where sulfate is low (<50 mg/L), such as in the landfill area and the Excised Area.

3.7 Reducing Conditions Evaluation

As noted in Section 3.5, the presence of VC in the groundwater usually indicates reducing conditions. Figures 3-7A and 3-7B show the spatial distributions of TCE, VC, manganese (Mn) filtered/unfiltered ratio, iron (Fe) filtered/unfiltered ratio, sulfate, and dissolved uranium in the shallow groundwater units for the August 2011 and October 2012 sampling events, respectively; while Figures 3-8A and 3-8B show the same information in the deep groundwater units for the August 2011 and October 2012 sampling events, respectively. The filtered/unfiltered

concentration ratios for Fe and Mn are very effective indicators of redox conditions. Under oxic conditions, both metals are mostly present as suspended oxide particulates that are partially or completely removed by filtration, so the filtered/unfiltered ratios are much less than 1.0. Under reducing conditions, both metals convert to lower valence states that are soluble. If they are soluble, then filtration will have no effect, so their filtered/unfiltered ratios will be close to 1.0. The difference between Mn and Fe is that Mn converts to a soluble form at a higher redox potential than Fe does, so Mn is a more sensitive indicator of slight redox depressions. Low sulfate concentrations (e.g., less than 50 mg/L) also may indicate that conditions are present to reduce sulfate to sulfide.

An advantage of using sulfate as a redox indicator at a uranium-contaminated site is that the redox potential required for sulfate reduction is similar to the potential required for uranium reduction, so it is directly relevant to the behavior of uranium. Manganese will reduce at much higher potentials, and Fe is slightly below Mn on the redox scale but still higher than the uranium and sulfate/sulfide transitions. In other words, if sulfate is being reduced then uranium is also likely to get reduced to an insoluble form. If Mn or Fe is reduced, then uranium can still remain mobile because uranium requires lower redox potentials to reduce relative to Mn and Fe.

The following observations may be made from the plots on Figures 3-7A, 3-7B, 3-8A, and 3-8B:

- Shallow aquifer: in the vicinity of the Excised Area, the VC area and reductive area correspond well, especially in the August 2011 data; the October 2012 data show the reductive area generally upgradient of the VC area. For both the August 2011 and October 2012 sampling events, a second reductive area is present in the vicinity of the landfill; however, no VOCs are present in the area, thus indicating that other reductive mechanisms may be present.
- Deep aquifer: the August 2011 data show a VC area southwest of the Excised Area and a reductive area northeast of the Excised Area. The VC area was also present in the data from the October 2012 sampling event; the presence of the reductive area northeast of the Excised Area could not be confirmed due to the limited number of wells that were sampled in October 2012.

Uranium can be reduced from a soluble hexavalent form to an insoluble tetravalent form under fairly low redox conditions. These redox conditions are below the conditions required for reductive dechlorination of TCE and DCE to VC, so it is possible for soluble uranium and VC to coexist. This can be seen from the data on Figure 3-7A, which shows wells within the VC plume that have high dissolved uranium concentrations (e.g., MW-25 at 171 µg/L, MW-26 at 94.6 µg/L, MW-604D at 101 µg/L, and MW-710D at 66 µg/L). These wells are located along the central axis of the uranium plume (i.e., MW-26 and MW-604D) or near that axis (for wells MW-

25 and MW-710D), suggesting that the uranium is in the mobile hexavalent form despite the presence of VC. The dissolved uranium concentrations for the wells located in the center of the reducing area are, in general, less than 10 μg/L.

4.0 Summary and Conclusions

Based on the results of the supplemental sampling, the following conclusions are drawn:

- The supplemental sampling results are consistent with the data obtained as part of the DGI.
- Groundwater flow directions in the first main fracture zone (deep groundwater) are generally consistent with groundwater flow in the shallow weathered bedrock (shallow groundwater). Groundwater flow in both zones is generally to the south; however it flows to the southeast toward the Erie Canal on the eastern part of the site, and to the southwest toward the quarry on the western part of the site.
- Comparison of filtered and unfiltered total uranium results indicates most of the uranium present is in dissolved form.
- Total uranium is present at concentrations exceeding the MCL in the deep groundwater flowing through the first main fracture zone of the competent dolostone, located between 30 ft and 40 ft deep and corresponds with the screened locations of the deep monitoring wells.
- The horizontal extent of groundwater with total uranium concentrations exceeding the MCL in the first main fracture zone (deep groundwater) covers approximately one-third of the area exceeding the MCL in the shallow weathered bedrock (shallow groundwater). The areas exceeding the MCL are primarily near the buildings in both zones.
- Groundwater with uranium concentrations exceeding MCL is discharging to the Erie Canal.
- The high-frequency monitoring indicates that the parameters are fairly stable in the wells monitored and there were not any discernable seasonal variations.
- Reducing conditions are present in the vicinity of the Excised Area that apparently degrade TCE to VC.

Groundwater flow was observed to discharge at several locations along the northern rock face of the Erie Canal. This discharge represents a fraction of the groundwater flow that exits the shallow and the deep groundwater units underneath the site.

5.0 References

United States Army Corps of Engineers (USACE). 2001. EM 200-1-3, *Engineering and Design - Requirements for the Preparation of Sampling and Analysis Plans*, Appendix C.2, Groundwater Sampling, February 1.

USACE. 2007. *Sampling and Analysis Plan, Volume 1 – Field Sampling Plan*, prepared by Earth Tech, Inc., June 14.

USACE. 2011a. *Sampling and Analysis Plan Addendum – Volume 1 – Addendum to Field Sampling Plan (FSP) with Applicable Remedial Investigation FSP Sections for Data Gap Investigation to Support the Feasibility Study, Former Guterl Specialty Steel Corporation FUSRAP Site, Lockport, New York*, June 3.

USACE. 2011b. *Sampling and Analysis Plan Addendum – Volume 2 – Addendum to Quality Assurance Project Plan for Data Gap Investigation to Support the Feasibility Study, Former Guterl Specialty Steel Corporation FUSRAP Site, Lockport, New York*, June 3.

USACE. 2011c. *Sampling and Analysis Plan Addendum – Volume 3 – Accident Prevention Plan for Data Gap Investigation to Support the Feasibility Study, Former Guterl Specialty Steel Corporation FUSRAP Site, Lockport, New York*, June 3.

USACE. 2012. *Final Technical Memorandum, Data Gap Investigation to Support the Feasibility Study for the Former Guterl Specialty Steel Corporation, Lockport, New York*, October 25.

TABLES

Table 2-1

Field Parameters

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Location	Sample Date	Static DTW (ft bgs)	pH	Temperature (^{o}C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
MW-26	10-Aug-2011	3.25	7.37	16.88	2.258	0.26	11.9	-29.5
	31-Jan-2012	1.62	7.50	9.73	1.790	0.31	120.2	7.4
	4-May-2012	1.94	7.55	11.89	1.570	2.16	113.2	1.9
	6-Aug-2012	4.22	7.56	16.64	1.622	0.64	-4.6	24.7
	24-Oct-2012	2.00	7.46	16.46	1.129	3.55	-62.1	8.7
MW-604D	10-Aug-2011	7.30	7.23	16.89	2.379	0.68	66.8	16.2
	31-Jan-2012	4.28	7.27	8.35	1.378	2.96	100.0	22.7
	4-May-2012	7.90	6.98	10.22	1.740	1.43	200.6	24.2
	6-Aug-2012	8.15	7.42	17.90	1.865	2.79	94.1	-1.7
	23-Oct-2012	6.28	7.15	15.42	1.647	3.70	-69.6	40.7
MW-605D	10-Aug-2011	3.34	7.29	16.18	0.861	0.30	-3.4	106.7
	31-Jan-2012	0.80	7.21	10.04	0.934	0.32	121.0	30.8
	3-May-2012	1.21	6.83	10.95	0.600	0.35	225.0	9.1
	6-Aug-2012	4.42	7.49	17.15	0.632	0.43	63.1	29.0
	24-Oct-2012	1.81	7.23	15.85	0.691	3.56	-13.9	133.5
MW-704DD	10-Aug-2011	3.30	7.80	13.19	2.552	0.18	72.8	-4.1
	31-Jan-2012	0.64	7.24	10.09	2.880	5.16	147.8	23.7
	3-May-2012	0.90	6.48	12.12	2.349	7.03	326.7	208.0
	6-Aug-2012	4.60	7.47	13.09	1.857	1.02	83.9	18.5
	22-Oct-2012	2.39	7.17	14.61	2.172	3.56	-7.3	53.1
MW-707DD	18-Aug-2011	33.62	8.72	13.87	18.510	6.28	117.1	168.2
	31-Jan-2012	16.25	--	--	--	--	--	--
	4-May-2012	21.34	7.32	11.64	19.040	5.05	-67.7	428.0
	6-Aug-2012	21.93	7.40	20.15	10.450	4.56	114.9	-4.8
	23-Oct-2012	18.25	7.15	13.21	10.180	6.13	6.0	9.0
MW-708DD	11-Aug-2011	8.24	7.42	13.63	1.857	0.23	-1.6	20.4
	30-Jan-2012	6.51	7.28	11.37	1.666	6.82	-52.5	411.9
	3-May-2012	6.83	7.03	12.31	1.191	0.60	36.3	16.9
	4-Aug-2012	8.59	7.10	13.37	1.175	0.32	31.8	3.4
	22-Oct-2012	7.80	7.19	15.40	1.383	3.59	47.3	-3.8
MW-709DD	10-Aug-2011	8.07	7.35	13.00	2.071	0.38	47.8	-1.7
	31-Jan-2012	5.76	7.49	10.49	1.698	3.86	17.4	17.2
	4-May-2012	9.42	7.40	11.31	1.343	3.79	25.8	25.5
	6-Aug-2012	8.79	7.44	12.98	1.453	0.37	-22.9	-5.4
	23-Oct-2012	7.44	7.27	13.56	1.521	3.67	-143.6	1.6
MW-710D	15-Aug-2011	12.20	7.21	12.87	1.828	0.66	10.7	-2.1
	30-Jan-2012	11.48	7.18	10.34	1.562	7.51	87.2	30.5
	3-May-2012	11.49	7.22	10.43	1.243	3.71	65.0	1.2
	4-Aug-2012	12.49	7.58	14.71	1.200	3.65	51.5	1.2
	22-Oct-2012	11.79	7.12	14.53	1.675	3.70	-29.5	-4.2
MW-710DD	18-Aug-2011	20.74	7.14	12.52	2.303	1.90	52.6	6.0
	30-Jan-2012	30.58	7.29	11.01	1.721	6.76	112.4	31.4
	3-May-2012	23.41	7.12	11.44	1.425	3.70	117.8	17.6
	4-Aug-2012	25.26	7.34	15.06	1.506	4.21	85.8	42.0
	22-Oct-2012	23.43	7.06	13.54	1.256	4.03	38.7	0.7
MW-713D	4-Aug-2011	12.23	7.24	13.47	1.534	0.72	-175.6	16.8
	30-Jan-2012	11.10	7.03	8.57	1.388	8.15	-222.1	30.9
	3-May-2012	11.52	6.55	11.56	0.885	1.32	-254.2	6.5
	4-Aug-2012	13.09	7.21	15.04	0.963	4.10	-195.1	2.7
	23-Oct-2012	12.62	--	--	--	--	--	--

DTW = depth to water
ft bgs = feet below ground surface
^{o}C = degrees Celsius
mS/cm = millisiemens per centimeter
DO = dissolved oxygen
mg/L = milligrams per liter
ORP = oxidation reduction potential
mV = millivolts
NTU = nephelometric turbidity units
-- = not measured

Table 3-1

Monitoring Well Gauging Data Summary

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Total Boring Depth (ft bgs)	Ground Surface Elevation (ft msl)	Top of Casing Elevation (ft msl)	Well Gauging Data									
				August 2011		January 2012		May 2012		August 2012		October 2012	
				Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)
MW-1	15.0	598.18	599.92	7.02	592.90	NM	NA	NM	NA	NM	NA	6.11	593.81
MW-2	14.5	596.86	598.78	8.59	590.19	NM	NA	NM	NA	NM	NA	8.11	590.67
MW-3	14.4	597.27	599.03	5.68	593.35	NM	NA	NM	NA	NM	NA	4.30	594.73
MW-4	14.4	597.70	599.52	5.34	594.18	NM	NA	NM	NA	NM	NA	4.00	595.52
MW-5	15.5	596.68	598.52	5.50	593.02	NM	NA	NM	NA	NM	NA	4.70	593.82
MW-6	15.7	597.59	600.68	7.68	593.00	NM	NA	NM	NA	NM	NA	6.66	594.02
MW-7	16.7	598.19	601.32	7.74	593.58	NM	NA	NM	NA	NM	NA	6.29	595.03
MW-8	16.9	598.31	601.37	9.14	592.23	NM	NA	NM	NA	NM	NA	8.62	592.75
MW-9	16.0	596.49	599.70	8.38	591.32	NM	NA	NM	NA	NM	NA	8.05	591.65
MW-10	16.9	599.06	601.92	8.54	593.38	NM	NA	NM	NA	NM	NA	7.50	594.42
MW-11	17.8	596.77	599.79	9.56	590.23	NM	NA	NM	NA	NM	NA	8.85	590.94
MW-12	17.0	596.88	600.01	6.43	593.58	NM	NA	NM	NA	NM	NA	5.20	594.81
MW-13D	16.0	600.15	603.47	7.85	595.62	NM	NA	NM	NA	NM	NA	7.11	596.36
MW-14	16.0	598.90	602.36	8.24	594.12	NM	NA	NM	NA	NM	NA	6.78	595.58
MW-15	20.0	604.42	608.09	10.70	597.39	NM	NA	NM	NA	NM	NA	11.62	596.47
MW-16	17.0	601.41	604.37	8.54	595.83	NM	NA	NM	NA	NM	NA	8.00	596.37
MW-17	16.8	603.79	606.97	8.92	598.05	NM	NA	NM	NA	NM	NA	9.15	597.82
MW-18	13.9	599.48	602.36	7.42	594.94	NM	NA	NM	NA	NM	NA	5.78	596.58
MW-19	20.0	598.29	601.36	10.13	591.23	NM	NA	NM	NA	NM	NA	7.89	593.47
MW-20	17.0	600.50	603.62	9.18	594.44	NM	NA	NM	NA	NM	NA	8.82	594.80
MW-21	21.0	605.41	608.46	12.73	595.73	NM	NA	NM	NA	NM	NA	13.15	595.31
MW-22	17.0	598.09	601.35	7.16	594.19	NM	NA	NM	NA	NM	NA	5.76	595.59
MW-23	16.0	597.58	600.50	5.96	594.54	NM	NA	NM	NA	NM	NA	4.55	595.95
MW-24	16.4	597.27	NM	4.02	593.25	NM	NA	NM	NA	NM	NA	3.05	594.22
MW-25	17.0	597.22	NM	2.66	594.56	NM	NA	NM	NA	NM	NA	1.22	596.00
MW-26	17.0	596.93	NM	3.27	593.66	1.62	595.31	1.94	594.99	4.22	592.71	2.00	594.93
MW-600S	8.0	610.54	613.45	9.86	603.59	NM	NA	NM	NA	NM	NA	Dry	NA
MW-600D	23.4	610.54	613.29	11.16	602.13	NM	NA	NM	NA	NM	NA	10.10	603.19
MW-601D	20.0	602.42	604.85	10.17	594.68	NM	NA	NM	NA	NM	NA	9.80	595.05
MW-602D	20.5	601.14	604.01	9.47	594.54	NM	NA	NM	NA	NM	NA	8.91	595.10
MW-603D	20.0	597.69	600.43	7.22	593.21	NM	NA	NM	NA	NM	NA	6.32	594.11
MW-604D	19.0	596.25	595.98	7.06	588.92	4.28	591.70	7.90	588.08	8.15	587.83	6.28	589.70
MW-605D	18.5	598.50	598.11	3.21	594.90	0.80	597.31	1.21	596.90	4.42	593.69	2.33	595.78
MW-606D	20.5	598.91	601.49	7.77	593.72	NM	NA	NM	NA	NM	NA	NM	NA

Table 3-1

Monitoring Well Gauging Data Summary

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Total Boring Depth (ft bgs)	Ground Surface Elevation (ft msl)	Top of Casing Elevation (ft msl)	Well Gauging Data									
				August 2011		January 2012		May 2012		August 2012		October 2012	
				Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)	Depth to Water (ft toc)	Water Level Elevation (ft msl)
MW-606DR	21.0	599.49	602.21	7.79	594.42	NM	NA	NM	NA	NM	NA	6.59	595.62
MW-607D	17.9	597.93	600.38	7.83	592.55	NM	NA	NM	NA	NM	NA	6.15	594.23
MW-701DD	80.0	604.47	607.22	11.06	596.16	NM	NA	NM	NA	NM	NA	11.75	595.47
MW-702DD	40.0	600.68	602.84	9.14	593.70	NM	NA	NM	NA	NM	NA	8.15	594.69
MW-703DD	40.0	597.55	599.15	24.76	574.39	NM	NA	NM	NA	NM	NA	7.90	591.25
MW-704DD	40.0	598.21	597.97	3.10	594.87	0.64	597.33	0.90	597.07	4.60	593.37	2.39	595.58
MW-705D	20.0	597.09	598.85	7.56	591.29	NM	NA	NM	NA	NM	NA	5.55	593.30
MW-705DD	40.0	597.06	598.88	7.41	591.47	NM	NA	NM	NA	NM	NA	5.23	593.65
MW-706DD	50.0	598.24	600.61	9.62	590.99	NM	NA	NM	NA	NM	NA	6.25	594.36
MW-707DD	40.0	596.60	596.32	35.10	561.22	16.25	580.07	21.34	574.98	21.93	574.39	18.25	578.07
MW-708DD	40.0	597.75	597.61	8.16	589.45	6.51	591.10	6.83	590.78	8.59	589.02	7.80	589.81
MW-709DD	80.0	595.92	595.61	8.07	587.54	5.76	589.85	9.42	586.19	8.79	586.82	7.44	588.17
MW-710D	20.0	596.31	598.19	12.17	586.02	11.48	586.71	11.49	586.70	12.49	585.70	11.79	586.40
MW-710DD	42.0	596.38	598.00	22.62	575.38	30.58	567.42	23.41	574.59	25.26	572.74	23.43	574.57
MW-711D	20.0	593.07	595.09	12.55	582.54	NM	NA	NM	NA	NM	NA	10.49	584.60
MW-711DD	40.0	593.01	595.05	11.37	583.68	NM	NA	NM	NA	NM	NA	11.40	583.65
MW-712D	20.0	594.24	596.48	DRY	<574.24	NM	NA	NM	NA	NM	NA	Dry	<574.24
MW-712DD	40.0	593.99	596.33	30.18	566.15	NM	NA	NM	NA	NM	NA	30.33	566.00
MW-713D	20.0	597.31	599.54	12.20	587.34	11.10	588.44	11.52	588.02	13.09	586.45	12.62	586.92

Notes:

ft bgs = feet below ground surface
ft msl = feet above mean sea level
ft toc = feet below top of riser casing
NM = not measured
NA = not applicable
TOC elevation data not available for MW-24, MW-25, and MW-26. These wells are flush-mounted (below grade). Water level elevations are referenced from ground surface.

Table 3-2

Monitoring Well Vertical Gradients

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well Pair (Shallow above Deep)	Total Boring Depth (ft bgs)	Well Construction Screen Mid-Point (ft msl)	Water Level Elevation (ft msl)					Vertical Gradient				
			August 2011	January 2012	May 2012	August 2012	October 2012	August 2011	January 2012	May 2012	August 2012	October 2012
MW-13D	16.0	589.15	595.62	--	--	--	596.36	0.027	--	--	--	-0.045
MW-701DD	80.0	569.47	596.16	--	--	--	595.47	slight up	--	--	--	slight down
MW-19	20.0	583.29	591.23	--	--	--	593.47	-0.012	--	--	--	0.044
MW-706DD	50.0	563.24	590.99	--	--	--	594.36	slight down	--	--	--	slight up
MW-26	17.0	584.93	593.66	595.31	594.99	592.71	594.93	-1.390	-0.653	-0.858	-0.785	-0.723
MW-707DD	40.0	561.60	561.22	580.07	574.98	574.39	578.07	downward	downward	downward	downward	downward
MW-602D	20.5	586.14	594.54	--	--	--	595.10	-0.041	--	--	--	-0.020
MW-702DD	40.0	565.68	593.70	--	--	--	594.69	slight down	--	--	--	slight down
MW-604D	19.0	583.05	588.92	591.70	588.08	587.83	589.70	-0.062	-0.084	-0.085	-0.046	-0.069
MW-709DD	80.0	560.92	587.54	589.85	586.19	586.82	588.17	slight down	slight down	slight down	slight down	slight down
MW-605D	18.5	585.50	594.90	597.31	596.90	593.69	595.78	-0.001	0.001	0.008	-0.015	-0.009
MW-704DD	40.0	564.21	594.87	597.33	597.07	593.37	595.58	neutral	neutral	neutral	slight down	neutral
MW-607D	17.9	585.53	592.55	--	--	--	594.23	-0.790	--	--	--	-0.130
MW-703DD	40.0	562.55	574.39	--	--	--	591.25	downward	--	--	--	slight down
MW-705D	20.0	582.09	591.29	--	--	--	593.30	0.009	--	--	--	0.017
MW-705DD	40.0	562.06	591.47	--	--	--	593.65	neutral	--	--	--	slight up
MW-710D	20.0	581.31	586.02	586.71	586.70	585.70	586.40	-0.534	-0.968	-0.608	-0.650	-0.594
MW-710DD	42.0	561.38	575.38	567.42	574.59	572.74	574.57	downward	downward	downward	downward	downward
MW-711D	20.0	578.07	582.54	--	--	--	584.60	0.057	--	--	--	-0.047
MW-711DD	40.0	558.01	583.68	--	--	--	583.65	slight up	--	--	--	slight down
MW-712D	20.0	579.24	<574.24	--	--	--	<574.24	<-0.400	--	--	--	<-0.407
MW-712DD	40.0	558.99	566.15	--	--	--	566.00	downward	--	--	--	downward
MW-713D	20.0	582.31	587.34	588.44	588.02	586.45	586.92	0.108	0.136	0.141	0.131	0.148
MW-708DD	40.0	562.75	589.45	591.10	590.78	589.02	589.81	upward	upward	upward	upward	upward

Notes:
ft bgs = feet below ground surface
ft msl = feet above mean sea level
-- = not measured

Table 3-3

Total Uranium (Filtered vs. Unfiltered) - Groundwater Monitoring Wells, August 2011 and October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	August 2011					October 2012				
Well ID	**Uranium Unfiltered (ug/L)**	**Val Qual**	**Uranium Filtered (Dissolved) (ug/L)**	**Val Qual**	**Filtered : Unfiltered Ratio**	**Uranium Unfiltered (ug/L)**	**Val Qual**	**Uranium Filtered (Dissolved) (ug/L)**	**Val Qual**	**Filtered : Unfiltered Ratio**
MW-1	4	J	3.5	J	0.88	3.44		3.29		0.96
MW-2	41.3	J	39.7	J	0.96	23.8		24		1.01
MW-2 Dup	40.1	J	39.5	J	0.99	--		--		NA
MW-3	2.6		2.5		0.96	--		--		NA
MW-4	48		46		0.96	39.6		41.2		1.04
MW-4 Dup	--		--		NA	40.3		41.9		1.04
MW-5	6.1		6.2		1.02	--		--		NA
MW-6	3.6		3.6		1.00	--		--		NA
MW-7	33.4		32.4		0.97	37.4		36.6		0.98
MW-8	1.1	J	1.1	J	1.00	--		--		NA
MW-9	21.8	J	21.1	J	0.97	41		41.1		1.00
MW-10	1.6		1.5		0.94	--		--		NA
MW-11	17.7	J	14.5	J	0.82	32.1		33		1.03
MW-12	3.9		3.8		0.97	--		--		NA
MW-13D	79.8		80.2		1.01	109		107		0.98
MW-14	8		8		1.00	--		--		NA
MW-15	2		1.5		0.75	--		--		NA
MW-16	29.3		27.7		0.95	27.1		28.1		1.04
MW-16 Dup	28.4		28.2		0.99	--		--		NA
MW-17	8.5		8.3		0.98	--		--		NA
MW-18	123	J	125	J	1.02	146		149		1.02
MW-19	16.4	J	12.9	J	0.79	18.9		18.8		0.99
MW-20	13.5		13.3		0.99	9.57		9.98		1.04
MW-21	3.1		3.2		1.03	5.4		5.2		0.96
MW-22	73.6	J	65.1	J	0.88	12.9		12.3		0.95
MW-23	6.7	J	6.3	J	0.94	8.72		8.46		0.97
MW-24	39.8	J	42.7	J	1.07	8.02		11.9		1.48
MW-24 Dup	--		--		NA	4.16		10.4		2.50
MW-25	175		171		0.98	166		162		0.98
MW-25 Dup	176		174		0.99	--		--		NA
MW-26	107		94.6		0.88	243		260		1.07
MW-600D	2.4		2.5		1.04	1.41		1.54		1.09
MW-601D	9.6		10.6		1.10	7.3		8.17		1.12
MW-602D	113		112		0.99	110		110		1.00
MW-603D	11.1	J	8.2	J	0.74	6.58		6.71		1.02
MW-604D	103		101		0.98	112		111		0.99
MW-604D Dup	--		--		NA	111		114		1.03
MW-605D	214		209		0.98	270		266		0.99
MW-605D Dup	210		212		1.01	--		--		NA
MW-606D	7.5		7.4		0.99	--		--		NA
MW-606DR	12.8		12.4		0.97	--		--		NA
MW-607D	19.5		12.3		0.63	13.9		12.2		0.88
MW-701DD	1.4		1.5		1.07	--		--		NA
MW-702DD	4.5		5.8		1.29	--		--		NA
MW-703DD	0.28		1	U	3.57	--		--		NA
MW-704DD	23.5		26.3		1.12	72.4		73.4		1.01
MW-704DD Dup	24.7		26.9		1.09	--		--		NA
MW-705D	0.89	J	2.8	J	3.15	--		--		NA
MW-705DD	1.7		0.37	J	0.22	--		--		NA

Table 3-3

Total Uranium (Filtered vs. Unfiltered) - Groundwater Monitoring Wells, August 2011 and October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	August 2011					October 2012				
Well ID	**Uranium Unfiltered (ug/L)**	**Val Qual**	**Uranium Filtered (Dissolved) (ug/L)**	**Val Qual**	**Filtered : Unfiltered Ratio**	**Uranium Unfiltered (ug/L)**	**Val Qual**	**Uranium Filtered (Dissolved) (ug/L)**	**Val Qual**	**Filtered : Unfiltered Ratio**
MW-706DD	1.8		1.7		0.94	--		--		NA
MW-707DD	34.5		33.9		0.98	9.4		8.4		0.89
MW-708DD	22.4		23		1.03	20		20.1		1.01
MW-708DD Dup	22.5		23.2		1.03	--		--		NA
MW-709DD	52.8		55.4		1.05	85.9		83.8		0.98
MW-710D	67.5		66.1		0.98	66		66.8		1.01
MW-710DD	60.8		67		1.10	28.6		28.3		0.99
MW-711D	9		7.4		0.82	4.02		4.09		1.02
MW-711DD	1.7	J	2.9	J	1.71	1.49		1.63		1.09
MW-712DD	38.7		38.8		1.00	28.3		30.8		1.09
MW-713D	5.1	J	4.7	J	0.92	1	U	1	U	NA
				Average	1.06				Average	1.06
				Median	0.99				Median	1.01

Dup - Duplicate
J - Estimated Value
U - Not detected

Table 3-4a

Isotopic Uranium - Quarterly Groundwater Monitoring Wells

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Analytic Method	A-01-R MOD				A-01-R MOD				A-01-R MOD				6020A			
	Parameter	URANIUM-234				URANIUM-235/236				URANIUM-238				URANIUM			
	Units	pCi/L				pCi/L				pCi/L				ug/L			
Location	**Sample Date**	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual
MW-26	10-Aug-2011	34.7		32.1		1.97		1.62		35		32.7		107		94.6	
	1-Feb-2012	39.7	J	48.4	J	1.62		2.1		38.3	J	48.4	J	145	J	152	J
	4-May-2012	52.7		54.5		2.36		2.62		54.4		55.7		145		139	
	6-Aug-2012	49		46.6		2.48		1.87		47.6		46.3		155		147	
	24-Oct-2012	77.3		69.8		3.86		3.66		76.9		70.5		243		260	
MW-604D	10-Aug-2011	37.1		31.4		1.79		1.52		37		30.4		103		101	
	1-Feb-2012	23.1		22		1.05		1.28		21.9		23.1		76.7	J	76.4	J
	4-May-2012	29.2		31		1.28		1.52		28.8		29.9		86.5		76.4	
	6-Aug-2012	35.1		34.5		1.5		1.57		35.2		33.5		108		105	
	23-Oct-2012	36.1		32.2		1.65		1.71		35.4		32.6		112		111	
	Duplicate	33.6		34.7		2.08		1.77		34.5		34.3		111		114	
MW-605D	10-Aug-2011	67.5		68.6	J	3.43		3.38	J	65.8		67.1	J	214		209	
	Duplicate	69.2	J	70	J	3.13	J	3.67	J	68.1	J	67.5	J	210		212	
	1-Feb-2012	87.3		92.9		3.59		3.99		91		91.2		299	J	302	J
	Duplicate	101		90.6		5.3		4.67		99.8		90.6		300	J	304	J
	4-May-2012	86.2		90.2		4.09		4.37		87.8		89.6		265		256	
	Duplicate	87.9		80.6		4.51		3.63		89.5		77.9		266		262	
	6-Aug-2012	85.8		78.7		3.75		3.67		82.6		77.5		259		251	
	Duplicate	80.5		91.3		3.88		4.58		78.7		89.8		254		251	
	24-Oct-2012	79.7		85.2		3.59		4.75		79.1		84		270		266	
MW-704DD	10-Aug-2011	9.35		10.8		0.38		0.46		7.31		8.36		23.5		26.3	
	Duplicate	9.54		10.8		0.3		0.41		7.26		8.77		--		--	
	1-Feb-2012	29.8		26.3		1.2		1.15		23.8		22.6		81.3	J	80.2	J
	Duplicate	25.9		30		1.26		1.26		21.5		24.1		--		--	
	4-May-2012	25.3		27.8		0.99		1.15		20.4		21.1		67		65.8	
	6-Aug-2012	32.7		27.6		0.96		0.81		26.1		22.3		102		68.1	
	22-Oct-2012	26		27.9		0.95		1.2		21.5		22.6		72.4		73.4	
MW-707DD	18-Aug-2011	NM		NM		NM		NM		NM		NM		34.5		33.9	
	31-Jan-2012	7.76	J	14.5	J	0.14		0.23		5.14		4.32		13.6	J	14.1	J
	4-May-2012	12.8		12.3		0.28		0.18		3.54		3.51		10.8		10.6	
	6-Aug-2012	14.8		9		0.108		0.129		3.55		2.73		11.2		8.3	
	23-Oct-2012	14.7		12.2		0.24		0.128		3.32		2.49		9.4		8.4	
MW-708DD	11-Aug-2011	7.18		7.19		0.31		0.3		7.03		6.9		22.4		23	
	Duplicate	7.03		7.51		0.5		0.43		7.39		7.06		22.5		23.2	
	30-Jan-2012	7.1		7.99		0.29		0.49		7.2		7.76		24.7	J	22.3	J
	4-May-2012	6.97		7.37		0.2		0.26		6.72		7.35		18		18.3	
	3-Aug-2012	7.04		7.26		0.4		0.27		7.12		6.68		20.2		19.3	
	22-Oct-2012	6.59		7.02		0.29		0.35		5.72		6.41		20		20.1	

Table 3-4a

Isotopic Uranium - Quarterly Groundwater Monitoring Wells

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Analytic Method	A-01-R MOD				A-01-R MOD				A-01-R MOD				6020A			
	Parameter	URANIUM-234				URANIUM-235/236				URANIUM-238				URANIUM			
	Units	pCi/L				pCi/L				pCi/L				ug/L			
Location	**Sample Date**	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual
MW-709DD	10-Aug-2011	16.8		18.5		0.71		0.7		16		17.4		52.8		55.4	
	1-Feb-2012	25.5		27.5		1.48		1.01		26.3		25.5		88.3	J	88.5	J
	4-May-2012	27.7		27.2		1.05		1.23		28.7		25.9		80		80.4	
	6-Aug-2012	28.4		28.7		1.83		1.66		28.6		29.4		82.7		84.3	
	23-Oct-2012	27.6		28.2		1.41		1.26		27.8		27.1		85.9		83.8	
MW-710D	15-Aug-2011	19.1		24		1.02		1.2		19.9		23.8		67.5		66.1	
	30-Jan-2012	16.6		17.3		0.81		0.9		16.8		17.5		59.1	J	57.8	J
	4-May-2012	18.3		18.7		0.99		0.91		17.6		19.4		52.5		49.5	
	6-Aug-2012	18.8		19.9		1.12		1.08		18.2		20		53.8		52.3	
	22-Oct-2012	19.9		20.3		1.13		1.07		19.7		20.1		66		66.8	
MW-710DD	18-Aug-2011	18.6		21		1.02		1.38		19.1		21.3		60.8		67	
	30-Jan-2012	19.6		20		0.93		1.17		21.3		20.4		71.4	J	71.9	J
	4-May-2012	21.7		19		0.96		1		22.1		19.1		59.1		56.6	
	6-Aug-2012	8.79		9.28		0.59		0.43		9.6		9.5		29.6		28.9	
	22-Oct-2012	8.85		9.34		0.36		0.47		8.82		9.06		28.6		28.3	
MW-713D	4-Aug-2011	2.62		2.67		0.061		0.076		1.26		1.4		5.1	J	4.7	J
	30-Jan-2012	0.32		0.19		0.1	U	0.1	U	0.23		0.071		1	J	0.25	J
	3-May-2012	0.081		0.103		0.1	U	0.1	U	0.122		0.075		0.33	J	1	U
	4-Aug-2012	0.127		0.133		0.1	U	0.1	U	0.093		0.1	U	1	U	1	U
	23-Oct-2012	0.066		0.1	U	0.1		0.1		0.081		0.02		1	U	1	U

NOTE: Qualifier varies by analytical method - analytical method is noted in the description of the qualifier.
pCi/L = picoCuries per Liter
ug/L = micrograms per Liter
ValQual = Validation Qualifier
J - A-01-R MOD = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J - SW6020 = The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
U = Analyte analyzed for, but was not detected.

Table 3-4b

Isotopic Uranium - Annual Groundwater Monitoring Wells

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Analytic Method	A-01-R MOD				A-01-R MOD				A-01-R MOD				6020A			
	Parameter	URANIUM-234				URANIUM-235/236				URANIUM-238				URANIUM			
	Units	pCi/L				pCi/L				pCi/L				ug/L			
Location	**Sample Date**	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual
MW-1	23-Aug-2011	1.86		1.32		0.02	U	-0.008	U	1.22		1.24		4	J	3.5	J
	24-Oct-2012	1.11		1.15		0.100	J	-0.015		1.05		0.799		3.44		3.29	
MW-2	23-Aug-2011	12		9.68		0.62		0.36		12.9		10.4		41.3	J	39.7	J
	Duplicate	10.9		10.3		0.58		0.49		12		10.8		40.1	J	39.5	J
	24-Oct-2012	7.40		7.21		0.472		0.279		7.97		7.58		23.8		24.0	
MW-4	19-Aug-2011	14.9		16.1		0.87		0.8		14.4		16.7		48		46	
	24-Oct-2012	15.5		14.0		0.748		0.500		13.9		13.0		39.6		41.2	
	Duplicate	13.9		13.7		0.876		0.675		13.5		13.8		40.3		41.9	
MW-7	12-Aug-2011	11.8		10.5		0.67		0.54		12.1		10.6		33.4		32.4	
	23-Oct-2012	12.9		12.4		0.620		0.612		12.3		12.3		37.4		36.6	
MW-9	8-Aug-2011	6.07		6.26		0.32		0.28		6.48		6.7		21.8	J	21.1	J
	24-Oct-2012	11.3		12.5		0.427		0.745		13.7		13.8		41.0		41.1	
MW-11	8-Aug-2011	4.13		4.75		0.26		0.22		4.56		4.65		17.7	J	14.5	J
	24-Oct-2012	10.1		10.8		0.521		0.741		10.6		12.0		32.1		33.0	
MW-13D	11-Aug-2011	23.9		22.6		1.13		1.13		24.6		23.6		79.8		80.2	
	25-Oct-2012	35.2		35.2		1.86		1.47		35.5		36.1		109		107	
MW-16	19-Aug-2011	8.8		8.9		0.44		0.45		9.7		10.2		29.3		27.7	
	Duplicate	8.38		9.2		0.42		0.58		8.88		10.1		28.4		28.2	
	22-Oct-2012	8.54		9.19		0.382		0.318		9.42		9.86		27.1		28.1	
MW-18	5-Aug-2011	38.8		37.7		1.72		1.79		39.6		36.6		123	J	125	J
	25-Oct-2012	48.0		47.3		2.56		2.87		49.0		46.8		146		149	
MW-19	4-Aug-2011	4.52		4.34		0.27		0.19		4.77		4.27		16.4	J	12.9	J
	22-Oct-2012	6.30		6.03		0.270		0.377		6.36		6.03		18.9		18.8	
MW-20	18-Aug-2011	4.5		3.89		0.23		0.24		4.27		3.82		13.5		13.3	
	23-Oct-2012	3.57		3.13		0.222		0.176		2.99		3.67		9.57		9.98	
MW-21	18-Aug-2011	0.73		1.03		0.05		0.03	U	0.79		0.93		3.1		3.2	
	25-Oct-2012	1.80		1.65		0.092		0.139		1.93		1.91		5.40		5.20	
MW-22	5-Aug-2011	24.3		21.6		1.03		1.05		24.8		21.2		73.6	J	65.1	J
	23-Oct-2012	4.31		4.38		0.294		0.251		3.99		4.45		12.9		12.3	
MW-23	4-Aug-2011	1.79		1.74		0.11		0.13		1.73		1.64		6.7	J	6.3	J
	24-Oct-2012	2.88		2.46		0.108		0.162		3.07		2.64		8.72		8.46	
MW-24	4-Aug-2011	13.1		12.5		0.43		0.51		12.6		11.6		39.8	J	42.7	J
	24-Oct-2012	2.78		4.12		0.107		0.178		2.75		4.39		8.02		11.9	
	Duplicate	1.56		3.98		0.035		0.158		1.31		3.92		4.16		10.4	
MW-25	12-Aug-2011	55.7	J	58.5	J	3.22	J	3.28	J	56.4	J	60.5	J	175		171	
	Duplicate	49.9		55.2		2.69		2.96		50.5		56.6		176		174	
	24-Oct-2012	68.8		53.0		3.21		2.25		63.4		60.9		166		162	
MW-600D	22-Aug-2011	0.92		1.28		0.03	U	0.05	U	0.78		0.93		2.4		2.5	
	22-Oct-2012	0.715		0.761		0.040		0.006		0.616		0.635		1.41		1.54	
MW-601D	18-Aug-2011	2.54		2.56		0.1		0.13		2.66		2.61		9.6		10.6	
	23-Oct-2012	2.66		2.82		0.077		0.244		2.36		2.83		7.30		8.17	

Table 3-4b

Isotopic Uranium - Annual Groundwater Monitoring Wells

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Analytic Method	A-01-R MOD				A-01-R MOD				A-01-R MOD				6020A			
	Parameter	URANIUM-234				URANIUM-235/236				URANIUM-238				URANIUM			
	Units	pCi/L				pCi/L				pCi/L				ug/L			
Location	**Sample Date**	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual
MW-602D	11-Aug-2011	36.5		36.9		1.84		2.08		36		36.8		113		112	
	23-Oct-2012	37.2		36.3		1.95		1.70		35.7		36.5		110		110	
MW-603D	5-Aug-2011	2.86		3.01		0.1		0.19		2.76		2.97		11.1	J	8.2	J
	23-Oct-2012	2.51		2.64		0.115		0.090		2.23		2.15		6.58		6.71	
MW-607D	19-Aug-2011	5.35		3.88		0.24		0.11		4.99		4.04		19.5		12.3	
	22-Oct-2012	4.86		3.62		0.133		0.316		5.05		4.74		13.9		12.2	
MW-711D	9-Aug-2011	2.78		2.7		0.09		0.16		2.68		2.3		9		7.4	
	23-Oct-2012	1.54		0.984		0.125		0.079		1.36		1.05		4.02		4.09	
MW-711DD	15-Aug-2011	0.8	J	1.29		-0.007	UJ	0.11	U	0.71	J	0.55		1.7	J	2.9	J
	23-Oct-2012	1.02		1.41		0.039		-0.020		1.03		0.830		1.49		1.63	
MW-712DD	18-Aug-2011	13.2		14		0.59		0.63		12.7		12.4		38.7		38.8	
	22-Oct-2012	9.92		9.97		0.590		0.577		10.3		10.2		28.3		30.8	

NOTE: Qualifier varies by analytical method - analytical method is noted in the description of the qualifier.
pCi/L = picoCuries per Liter
ug/L = micrograms per Liter
ValQual = Validation Qualifier
J - A-01-R MOD = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J - SW6020 = The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
U = Analyte analyzed for, but was not detected.

Table 3-4c

Isotopic Uranium - Seeps and Surface Water

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Analytic Method	A-01-R MOD				A-01-R MOD				A-01-R MOD				6020A or D5174			
		Parameter	URANIUM-234				URANIUM-235/236				URANIUM-238				TOTAL URANIUM			
		Units	pCi/L				pCi/L				pCi/L				ug/L			
Sample Date	**Location**	**Sample ID**	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual	Total	ValQual	Dissolved	ValQual
8-Aug-11	SEEP-1108-01	Seep-08082011-01	13.2		15.4		0.72		0.67		13.2		15.3		44.9	J	44.3	J
	SEEP-1108-02	Seep-08082011-02	2.09		1.89		0.028	U	0.088		1.59		2.13		6.3	J	6.2	J
12/8/2011	SEEP-1112-01	Seep-12082011-01	--		--		--		--		--		--		5.85		--	
	SEEP-1112-02	Seep-12082011-02	--		--		--		--		--		--		3.47		--	
	SEEP-1112-03	Seep-12082011-03	--		--		--		--		--		--		24.8		--	
	SEEP-1112-04	Seep-12082011-04	--		--		--		--		--		--		25.9		--	
	SEEP-1112-05	Seep-12082011-05	--		--		--		--		--		--		24.9		--	
	SEEP-1112-06	Seep-12082011-06	--		--		--		--		--		--		23.2		--	
1/25/2012	SW-1201-01	SW-01252012-01	0.174		0.241		-0.028	U	0.034	J	0.234		0.174		0.609		0.587	
5/7/2012	SEEP-1205-01	Seep-05072012-01	1.88		1.9		0.084		0.171		1.99		2.04		5.3		5.3	
	SEEP-1205-02	Seep-05072012-02	2.34		2.56		0.048		0.22		2		2.28		5.8		5.9	
	SEEP-1205-03	Seep-05072012-03	7.3		6.88		0.36		0.37		7.25		7.44		20.7		20.8	
	SW-1205-01	SW-05072012-01	0.31		0.184		0.1	U	0.1	U	0.217		0.171		0.52		0.51	
	SW-1205-02	SW-05072012-02	0.24		0.34		0.1	U	0.1	U	0.221		0.15		0.5		0.49	
10/25/2012	SEEP-1210-01	Seep-1012-1	10.6		11.1		0.547		0.66		10.7		12.5		35.4		33	
	SEEP-1210-02	Seep-1012-2	0.272		0.161		0.027	U	-0.046	U	0.198		0.38		0.895		0.913	
	SEEP-1210-03	Seep-1012-3	12.3		11.7		0.571		0.75		12.3		13		36.2		36.8	
	SW-1210-01	Surface-1012	0.358	J	0.24	J	0.117		0	U	0.316		0.088	J	0.599		0.595	

pCi/L = picoCuries per Liter
ug/L = micrograms per Liter
ValQual = Validation Qualifier
J = The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
U = Analyte analyzed for, but was not detected.

Table 3-5a

Groundwater Analytical Results - VOCs, August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-2		MW-2		MW-3		MW-4		MW-5		MW-9	
Field Sample ID		A02MW020001		A02MW9005		A02MW30001		A02MW40001		A02MW50001		A02MW090001	
Sample Date		8/23/2011		8/23/2011		8/22/2011		8/19/2011		8/22/2011		8/8/2011	
Purpose		Original Data		Field Duplicate		Original Data		Original Data		Original Data		Original Data	
Parameter	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
1,1,1-TRICHLOROETHANE	ug/L	1	U	1	U	2.5		500	D	71	D	0.24	J
1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
1,1-DICHLOROETHANE	ug/L	6.1		5.7		16		110	D	560	D	12	
1,1-DICHLOROETHENE	ug/L	1.5		1.5		4.8		51	D	20	D	2.9	
1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
1,3-DICHLOROBENZENE	ug/L	0.21	J	0.21	J	1	U	10	U	10	U	1	U
1,4-DICHLOROBENZENE	ug/L	1	U	0.21	J	1	U	10	U	10	U	1	U
2-HEXANONE	ug/L	5	U	5	U	5	U	50	U	50	U	5	U
ACETONE	ug/L	2	U	2	U	2	U	20	U	20	U	2	
BENZENE	ug/L	1	U	1	U	1	U	10	U	3.2	JD	0.1	J
BROMODICHLOROMETHANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
BROMOFORM	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
BROMOMETHANE	ug/L	2	U	2	U	2	U	20	U	20	U	2	U
CARBON DISULFIDE	ug/L	2	U	2	U	2	U	20	U	20	U	0.39	J
CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
CHLOROBENZENE	ug/L	2	U	2	U	0.24	J	20	U	20	U	2	U
CHLOROETHANE	ug/L	24		12		2	U	20	U	130	D	14	
CHLOROFORM	ug/L	1	U	1	U	1	U	10	U	7	JD	1	U
CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
ETHYLBENZENE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	50	U	50	U	5	U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	50	U	50	U	5	U
METHYLENE CHLORIDE	ug/L	1	U	1	U	1	U	10	U	10	U	0.92	JB
STYRENE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
TETRACHLOROETHYLENE(PCE)	ug/L	1	U	1	U	1	U	10	U	1.9	JD	1	U
TOLUENE	ug/L	1	U	1	U	1	U	10	U	10	U	1	U
TOTAL 1,2-DICHLOROETHENE	ug/L	4.8		4.5		2.3		26	D	17	JD	6.8	
TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TRICHLOROETHYLENE (TCE)	ug/L	1	U	1	U	0.77	J	80	D	12	D	0.79	J
VINYL CHLORIDE	ug/L	9.2		8.4		0.47	J	1.1	JD	7.5	JD	2.7	
XYLENES, TOTAL	ug/L	5	U	5	U	5	U	50	U	50	U	5	U

ug/L = micrograms per Liter

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

D = Result was obtained from the analysis of a dilution.

E = Estimated result. Result concentration exceeds the calibration range.

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

LabQual = Laboratory Qualifier

Table 3-5a

Groundwater Analytical Results - VOCs, August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-11		MW-12		MW-22		MW-23		MW-24		MW-25	
Field Sample ID		A02MW110001		A02MW120001		A04AMW220001		A04DMW230001		A04DMW240001		A04BMW250001	
Sample Date		8/8/2011		8/22/2011		8/5/2011		8/4/2011		8/4/2011		8/12/2011	
Purpose		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Parameter	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
1,1,1-TRICHLOROETHANE	ug/L	0.23	J	60	D	29		1100	D	41	E		
1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1.9	JD	1	U	1.3	JD
1,1-DICHLOROETHANE	ug/L	5.9		18		17		650	D	52	E	190	D
1,1-DICHLOROETHENE	ug/L	8.7		2.6		5		50	D	21		44	D
1,2-DICHLOROBENZENE	ug/L	1	U	0.83	J	1	U	5	U	1	U	5	U
1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
2-HEXANONE	ug/L	5	U	5	U	5	U	25	U	5	U	25	U
ACETONE	ug/L	3.2		2	U	2	U	10	U	2	U	10	U
BENZENE	ug/L	1	U	0.13	J	1	U	5	U	0.41	J	5	U
BROMODICHLOROMETHANE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
BROMOFORM	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
BROMOMETHANE	ug/L	2	U	2	U	2	U	10	U	2	U	10	U
CARBON DISULFIDE	ug/L	2	U	2	U	2	U	10	U	2	U	10	U
CARBON TETRACHLORIDE	ug/L	1	U	85	D	1	U	5	U	1	U	5	U
CHLOROBENZENE	ug/L	2	U	2	U	2	U	10	U	2	U	10	U
CHLOROETHANE	ug/L	12		2	U	1	J	82	D	15		17	D
CHLOROFORM	ug/L	1	U	38		1	U	1.4	JD	1	U	5	U
CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
ETHYLBENZENE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	25	U	5	U	25	U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	25	U	5	U	25	U
METHYLENE CHLORIDE	ug/L	0.97	JB	1	U	0.51	JB	3.2	JBD	1	U	5	UD
STYRENE	ug/L	1	U	1	U	1	U	5	U	1	U	5	U
TETRACHLOROETHYLENE(PCE)	ug/L	0.25	J	110	D	3	B	8.5	D	1	U	3.4	JD
TOLUENE	ug/L	1	U	4.1		1	U	0.53	JD	1	U	1.3	JD
TOTAL 1,2-DICHLOROETHENE	ug/L	19		130	D	1.4	J	160	D	24		1600	D
TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TRICHLOROETHYLENE (TCE)	ug/L	0.59	J	20		2.2		190	D	17		150	D
VINYL CHLORIDE	ug/L	1.3	J	6.2		2	U	17	D	6.1		770	D
XYLENES, TOTAL	ug/L	5	U	130	D	5	U	25	U	5	U	25	U

ug/L = micrograms per Liter

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

D = Result was obtained from the analysis of a dilution.

E = Estimated result. Result concentration exceeds the calibration range.

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

LabQual = Laboratory Qualifier

Table 3-5a

Groundwater Analytical Results - VOCs, August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-25		MW-26		MW-602D		MW-603D		MW-604D		MW-605D	
Field Sample ID		A04BMW9003		A04BMW260001		A04MW602D0001		A04AMW603D0001		A04MW604D0001		A04BMW605D0001	
Sample Date		8/12/2011		8/10/2011		8/11/2011		8/5/2011		8/10/2011		8/10/2011	
Purpose		Field Duplicate		Original Data		Original Data		Original Data		Original Data		Original Data	
Parameter	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
1,1,1-TRICHLOROETHANE	ug/L	600	D	290	D	0.15	J	1	U	42		3.1	
1,1,2,2-TETRACHLOROETHANE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
1,1,2-TRICHLOROETHANE	ug/L	1.6	JD	5	U	1	U	1	U	1	U	1	U
1,1-DICHLOROETHANE	ug/L	190	D	56	D	1	U	0.95	J	18		2.2	
1,1-DICHLOROETHENE	ug/L	40	D	21	D	1	U	1	U	3.9		0.16	J
1,2-DICHLOROBENZENE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
1,2-DICHLOROETHANE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
1,2-DICHLOROPROPANE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
1,3-DICHLOROBENZENE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
1,4-DICHLOROBENZENE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
2-HEXANONE	ug/L	25	U	25	U	5	U	5	U	5	U	5	U
ACETONE	ug/L	10	U	10	U	2	U	2	U	2	U	2	U
BENZENE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
BROMODICHLOROMETHANE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
BROMOFORM	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
BROMOMETHANE	ug/L	10	U	10	U	2	U	2	U	2	U	2	U
CARBON DISULFIDE	ug/L	10	U	10	U	2	U	2	U	2	U	2	U
CARBON TETRACHLORIDE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
CHLOROBENZENE	ug/L	10	U	10	U	2	U	2	U	2	U	2	U
CHLOROETHANE	ug/L	17	D	10	U	2	U	2	U	2	U	2	U
CHLOROFORM	ug/L	5	U	5	U	0.17	J	1	U	0.41	J	0.2	J
CIS-1,3-DICHLOROPROPENE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
DIBROMOCHLOROMETHANE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
ETHYLBENZENE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
METHYL ETHYL KETONE (2-BUTANONE)	ug/L	25	U	25	U	5	U	5	U	5	U	5	U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	25	U	25	U	5	U	5	U	5	U	5	U
METHYLENE CHLORIDE	ug/L	2.4	JD	1.8	JD	1	U	0.34	JB	1	U	1	U
STYRENE	ug/L	5	U	5	U	1	U	1	U	1	U	1	U
TETRACHLOROETHYLENE(PCE)	ug/L	3.4	JD	5	U	1	U	0.82	JB	0.42	J	1	U
TOLUENE	ug/L	1.6	JD	5	U	1	U	1	U	1	U	1	U
TOTAL 1,2-DICHLOROETHENE	ug/L	1600	D	64	D	2	U	0.18	J	21		0.34	J
TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TRICHLOROETHYLENE (TCE)	ug/L	160	D	44	D	1	U	1	U	16		2.4	
VINYL CHLORIDE	ug/L	680	D	6	JD	2	U	2	U	1.2	J	2	U
XYLENES, TOTAL	ug/L	25	U	25	U	5	U	5	U	5	U	5	U

ug/L = micrograms per Liter

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

D = Result was obtained from the analysis of a dilution.

E = Estimated result. Result concentration exceeds the calibration range.

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

LabQual = Laboratory Qualifier

Table 3-5a

Groundwater Analytical Results - VOCs, August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-605D		MW-606D		MW-701DD		MW-702DD		MW-703DD		MW-704DD	
Field Sample ID		A04BMW9000		A03MW606D0001		A04AMW701DD0001		A04MW702DD0001		A03MW703DD0001		A04BMW9001	
Sample Date		8/10/2011		8/16/2011		8/19/2011		8/11/2011		8/19/2011		8/10/2011	
Purpose		Field Duplicate		Original Data		Original Data		Original Data		Original Data		Field Duplicate	
Parameter	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
1,1,1-TRICHLOROETHANE	ug/L	2.8		1	U	1	U	1	U	1	U	2.3	
1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,1-DICHLOROETHANE	ug/L	2		1	U	1	U	1	U	1	U	2.8	
1,1-DICHLOROETHENE	ug/L	0.14	J	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
2-HEXANONE	ug/L	5	U	5	U	5	U	5	U	5	U	5	U
ACETONE	ug/L	2	U	2	U	2	U	2	U	2	U	2	U
BENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	0.18	J
BROMODICHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
BROMOFORM	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
BROMOMETHANE	ug/L	2	U	2	U	2	U	2	U	2	U	2	U
CARBON DISULFIDE	ug/L	2	U	2	U	0.4	J	0.2	J	2	U	2	U
CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
CHLOROBENZENE	ug/L	2	U	2	U	2	U	2	U	2	U	2	U
CHLOROETHANE	ug/L	2	U	2	U	2	U	2	U	2	U	2	U
CHLOROFORM	ug/L	0.2	J	1	U	0.42	J	0.18	J	1	U	2.7	
CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
ETHYLBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U	5	U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U	5	U
METHYLENE CHLORIDE	ug/L	0.3	J	0.51	J	1	U	0.35	J	1	U	0.67	J
STYRENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TETRACHLOROETHYLENE(PCE)	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TOLUENE	ug/L	1	U	1	U	1	U	1	U	1	U	0.41	J
TOTAL 1,2-DICHLOROETHENE	ug/L	0.25	J	2	U	2	U	2	U	2	U	2	U
TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TRICHLOROETHYLENE (TCE)	ug/L	2.2		1	U	1	U	1	U	1	U	1	U
VINYL CHLORIDE	ug/L	2	U	2	U	2	U	2	U	2	U	2	U
XYLENES, TOTAL	ug/L	5	U	5	U	5	U	5	U	5	U	0.49	J

ug/L = micrograms per Liter

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

D = Result was obtained from the analysis of a dilution.

E = Estimated result. Result concentration exceeds the calibration range.

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

LabQual = Laboratory Qualifier

Table 3-5a

Groundwater Analytical Results - VOCs, August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-704DD		MW-705D		MW-705DD		MW-706DD		MW-707DD		MW-708DD	
Field Sample ID		A04DMW704DD0001		MW705D0001		MW705DD0001		A04BMW706D0001		A04BMW707DD0001		A04DMW708DD0001	
Sample Date		8/10/2011		8/9/2011		8/9/2011		8/15/2011		8/18/2011		8/11/2011	
Purpose		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Parameter	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
1,1,1-TRICHLOROETHANE	ug/L	2.4		1	U	1	U	0.12	J	2.4		1	U
1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,1-DICHLOROETHANE	ug/L	2.9		1	U	1	U	0.38	J	1.5		8.7	
1,1-DICHLOROETHENE	ug/L	1	U	1	U	1	U	1	U	1	U	30	
1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
2-HEXANONE	ug/L	5	U	5	U	5	U	5	U	5	U	5	U
ACETONE	ug/L	2	U	6.3		2	U	2	U	17		2	U
BENZENE	ug/L	0.19	J	1	U	0.5	J	1	U	4		1	U
BROMODICHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1		1	U
BROMOFORM	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
BROMOMETHANE	ug/L	2	U	2	U	2	U	2	U	2	U	2	U
CARBON DISULFIDE	ug/L	2	U	1.3	J	4.4		2	U	2		2	U
CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
CHLOROBENZENE	ug/L	2	U	2	U	2	U	2	U	2	U	2	U
CHLOROETHANE	ug/L	2	U	2	U	2	U	2	U	2	U	2.5	
CHLOROFORM	ug/L	2.9		0.13	J	0.71	J	0.32	J	6.2		0.34	J
CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	0.34	J	1	U
ETHYLBENZENE	ug/L	1	U	1	U	0.76	J	1	U	1	U	1	U
METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U	5	U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U	5	U
METHYLENE CHLORIDE	ug/L	0.75	J	0.61	JB	0.82	JB	0.55	J	1	U	0.37	J
STYRENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TETRACHLOROETHYLENE(PCE)	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TOLUENE	ug/L	0.43	J	0.13	J	2.1		0.12	J	8.3		1	U
TOTAL 1,2-DICHLOROETHENE	ug/L	2	U	2	U	2	U	2	U	0.56	J	83	D
TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
TRICHLOROETHYLENE (TCE)	ug/L	1	U	1	U	1	U	1	U	1	U	1	U
VINYL CHLORIDE	ug/L	2	U	2	U	2	U	2	U	2	U	3.4	
XYLENES, TOTAL	ug/L	0.28	J	5	U	4.2	J	5	U	9.8		5	U

ug/L = micrograms per Liter

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

D = Result was obtained from the analysis of a dilution.

E = Estimated result. Result concentration exceeds the calibration range.

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

LabQual = Laboratory Qualifier

Table 3-5a

Groundwater Analytical Results - VOCs, August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-708DD		MW-709DD		MW-710D		MW-710DD		MW-711D	
Field Sample ID		A04DMW9002		A04DMW709DD0001		A04DMW710D0001		A04DMW710DD0001		A04DMW711D0001	
Sample Date		8/11/2011		8/10/2011		8/15/2011		8/18/2011		8/9/2011	
Purpose		Field Duplicate		Original Data		Original Data		Original Data		Original Data	
Parameter	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
1,1,1-TRICHLOROETHANE	ug/L	1	U	19		10		13		0.74	J
1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,1-DICHLOROETHANE	ug/L	8.7		33		23		19		2.8	
1,1-DICHLOROETHENE	ug/L	37		13		9.8		10		0.31	J
1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
2-HEXANONE	ug/L	5	U	5	U	5	U	5	U	5	U
ACETONE	ug/L	2	U	2	U	2	U	2	U	12	
BENZENE	ug/L	1	U	0.13	J	1	U	1	U	1	U
BROMODICHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
BROMOFORM	ug/L	1	U	1	U	1	U	1	U	1	U
BROMOMETHANE	ug/L	2	U	2	U	2	U	2	U	2	U
CARBON DISULFIDE	ug/L	2	U	0.18	J	2	U	2	U	2	U
CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	1	U	1	U
CHLOROBENZENE	ug/L	2	U	2	U	2	U	2	U	2	U
CHLOROETHANE	ug/L	2.6		0.13	J	1.1	J	2	U	2	U
CHLOROFORM	ug/L	0.32	J	0.49	J	1	U	1	U	0.62	J
CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U
DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
ETHYLBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U
METHYLENE CHLORIDE	ug/L	0.38	J	1	U	0.51	J	1	U	0.69	JB
STYRENE	ug/L	1	U	1	U	1	U	1	U	1	U
TETRACHLOROETHYLENE(PCE)	ug/L	1	U	0.25	J	0.21	J	1	U	1	U
TOLUENE	ug/L	0.1	J	0.32	J	1	U	1	U	0.12	J
TOTAL 1,2-DICHLOROETHENE	ug/L	79	D	31		20		29		0.77	J
TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U
TRICHLOROETHYLENE (TCE)	ug/L	1	U	16		12		8.4		0.83	J
VINYL CHLORIDE	ug/L	3.5		1.3	J	0.86	J	0.86	J	2	U
XYLENES, TOTAL	ug/L	5	U	0.47	J	5	U	5	U	5	U

ug/L = micrograms per Liter

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

D = Result was obtained from the analysis of a dilution.

E = Estimated result. Result concentration exceeds the calibration range.

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

LabQual = Laboratory Qualifier

Table 3-5a

Groundwater Analytical Results - VOCs, August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-711DD		MW-712DD		MW-713D		SEEP-1108-01		SEEP-1108-02	
Field Sample ID		A04DMW711DD0001		A04DMW712DD0001		A04DMW713D0001		Seep-08082011-01		Seep-08082011-02	
Sample Date		8/15/2011		8/18/2011		8/4/2011		8/8/2011		8/8/2011	
Purpose		Original Data		Original Data		Original Data		Original Data		Original Data	
Parameter	**Units**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**	**Value**	**LabQual**
1,1,1-TRICHLOROETHANE	ug/L	1	U	2		1	U	2.2		1	U
1,1,2,2-TETRACHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,1,2-TRICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,1-DICHLOROETHANE	ug/L	1	U	5.7		0.71	J	2.5		1	U
1,1-DICHLOROETHENE	ug/L	1	U	3.5		2.2		0.41	J	1	U
1,2-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,2-DICHLOROPROPANE	ug/L	1	U	1	U	1	U	1	U	1	U
1,3-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
1,4-DICHLOROBENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
2-HEXANONE	ug/L	5	U	5	U	5	U	5	U	5	U
ACETONE	ug/L	5.4		2	U	4.2		2	U	2.7	
BENZENE	ug/L	1	U	1	U	1	U	1	U	1	U
BROMODICHLOROMETHANE	ug/L	1	U	0.41	J	1	U	1	U	1	U
BROMOFORM	ug/L	1	U	1	U	1	U	1	U	1	U
BROMOMETHANE	ug/L	2	U	2	U	2	U	2	U	2	U
CARBON DISULFIDE	ug/L	0.64	J	2	U	1	J	0.23	J	2	U
CARBON TETRACHLORIDE	ug/L	1	U	1	U	1	U	1	U	1	U
CHLOROBENZENE	ug/L	2	U	2	U	2	U	2	U	2	U
CHLOROETHANE	ug/L	2	U	2	U	0.23	J	2	U	2	U
CHLOROFORM	ug/L	0.33	J	0.27	J	2.5		1	U	1	U
CIS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U
DIBROMOCHLOROMETHANE	ug/L	1	U	1	U	1	U	1	U	1	U
ETHYLBENZENE	ug/L	1	U	1	U	0.1	J	1	U	1	U
METHYL ETHYL KETONE (2-BUTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/L	5	U	5	U	5	U	5	U	5	U
METHYLENE CHLORIDE	ug/L	0.5	J	1	U	0.92	JB	0.67	JB	0.83	JB
STYRENE	ug/L	1	U	1	U	1	U	1	U	1	U
TETRACHLOROETHYLENE(PCE)	ug/L	1	U	1	U	1	U	1	U	1	U
TOLUENE	ug/L	0.16	J	1	U	0.18	J	1	U	1	U
TOTAL 1,2-DICHLOROETHENE	ug/L	2	U	14		3.4		1.8	J	2	U
TRANS-1,3-DICHLOROPROPENE	ug/L	1	U	1	U	1	U	1	U	1	U
TRICHLOROETHYLENE (TCE)	ug/L	1	U	1.9		1	U	0.9	J	1	U
VINYL CHLORIDE	ug/L	2	U	2	U	2	U	2	U	2	U
XYLENES, TOTAL	ug/L	5	U	5	U	1	J	5	U	5	U

ug/L = micrograms per Liter

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

D = Result was obtained from the analysis of a dilution.

E = Estimated result. Result concentration exceeds the calibration range.

J = Estimated result. Result is less than RL.

U = Analyte analyzed for, but was not detected.

LabQual = Laboratory Qualifier

Table 3-5b

Groundwater and SeepsAnalytical Results - VOCs, October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-1			MW-2			MW-4			MW-9			MW-11		
Field Sample ID		MW-1F-1210			MW-2-1210			MW-04-1210			MW-9-1210			MW-11-1210		
Sample Date/Time		10/24/12			10/24/12			10/24/12			10/24/12			10/24/12		
Purpose		original data			original data			original data			original data			original data		
Parameter (Method 8260B)	Units	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
1,1,1,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,1-TRICHLOROETHANE	ug/l	1	U		1	U		510			1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	ug/l	1	U		0.56	J		130			6.3			0.82	J	
1,1-DICHLOROETHENE	ug/l	1	U		0.88	J		54			3.4			0.86	J	
1,1-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROPROPANE	ug/l	5	U		5	U		5	U		5	U		5	U	
1,2,4-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,4-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3,5-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	ug/l	1	U		0.24	J		1	U		1	U		1	U	
1,3-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-CHLOROTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-HEXANONE	ug/l	5	U		5	U		5	U		5	U		5	U	
4-CHLOROTOLUENE	ug/l	2	U		2	U		2	U		2	U		2	U	
4-ISOPROPYLTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
ACETONE	ug/l	5	U		5	U		5	U		5	U		5	U	
BENZENE	ug/l	1	U		1	U		1	U		0.22	J		1	U	
BROMOBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOFORM	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOMETHANE	ug/l	5	U		5	U		5	U		5	U		5	U	
CARBON DISULFIDE	ug/l	1	U		1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROETHANE	ug/l	2	U		2	U		2.7			12			2	U	
CHLOROFORM	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHYLENE	ug/l	1	U		3.5			33			5.9			1.8		
CIS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
ETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
HEXACHLOROBUTADIENE	ug/l	5	U		5	U		5	U		5	U		5	U	
ISOPROPYLBENZENE (CUMENE)	ug/l	1	U		1	U		1	U		1	U		1	U	
METHYL ETHYL KETONE (2-BUTANONE)	ug/l	10	U		10	U		10	U		10	U		10	U	
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/l	5	U		5	U		5	U		5	U		5	U	
METHYL TERT-BUTYL ETHER	ug/l	1	U		1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	ug/l	2	U		0.32	J	U	0.27	J	U	0.33	J	U	0.31	J	U
NAPHTHALENE	ug/l	1	U		1	U		1	U		1	U		1	U	
N-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
N-PROPYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
O-XYLENE (1,2-DIMETHYLBENZENE)	ug/l	1	U		1	U		1	U		1	U		1	U	
SEC-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
STYRENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TERT-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TETRACHLOROETHYLENE(PCE)	ug/l	1	U		1	U		1.2			1	U		1.8		
TOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	ug/l	1	U		1	U		1.2			1			1	U	
TRANS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRICHLOROETHYLENE (TCE)	ug/l	1	U		1	U		96			1.3			0.52	J	
TRICHLOROFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
VINYL CHLORIDE	ug/l	1	U		8.5			2.3			5			1	U	
XYLENE, M/P	ug/l	2	U		2	U		2	U		2	U		2	U	
XYLENES, TOTAL	ug/l	3	U		3	U		3	U		3	U		3	U	

ug/L = micrograms per Liter
J = Estimated result. Result is less than RL.
U = Analyte analyzed for, but was not detected.
Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier

Table 3-5b

Groundwater and SeepsAnalytical Results - VOCs, October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-22			MW-23			MW-24			MW-25			MW-26		
Field Sample ID		MW-22-1210			MW-23-1210			MW-24-1210			MW-25-1210			MW-26-1210		
Sample Date/Time		10/23/12			10/24/12			10/24/12			10/24/12			10/24/12		
Purpose		original data			original data			original data			original data			original data		
Parameter (Method 8260B)	Units	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
1,1,1,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,1-TRICHLOROETHANE	ug/l	1	U		740			0.49	J		330			260		
1,1,2,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	ug/l	1	U		1.7			1	U		0.71	J		1	U	
1,1-DICHLOROETHANE	ug/l	3.9			600			2.3			81			60		
1,1-DICHLOROETHENE	ug/l	0.32	J		45			0.88	J		17			20		
1,1-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROPROPANE	ug/l	5	U		5	U		5	U		5	U		5	U	
1,2,4-TRICHLOROBENZENE	ug/l	0.18	J		1	U		1	U		1	U		1	U	
1,2,4-TRIMETHYLBENZENE	ug/l	1	U		0.59	J		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	ug/l	0.79	J		2.2			1	U		0.5	J		1	U	
1,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3,5-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-CHLOROTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-HEXANONE	ug/l	5	U		5	U		5	U		5	U		5	U	
4-CHLOROTOLUENE	ug/l	2	U		2	U		2	U		2	U		2	U	
4-ISOPROPYLTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
ACETONE	ug/l	5	U		5	U		5	U		5	U		5	U	
BENZENE	ug/l	0.24	J		0.56	J		1	U		0.24	J		1	U	
BROMOBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOFORM	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOMETHANE	ug/l	5	U		5	U		5	U		5	U		5	U	
CARBON DISULFIDE	ug/l	1	U		1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	ug/l	1	U		1	U		1	U		59			1	U	
CHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROETHANE	ug/l	2	U		170			4			4.2			2	U	
CHLOROFORM	ug/l	1	U		1.2			1	U		0.35	J		1	U	
CHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHYLENE	ug/l	0.29	J		110			1			440			58		
CIS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
ETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
HEXACHLOROBUTADIENE	ug/l	5	U		5	U		5	U		5	U		5	U	
ISOPROPYLBENZENE (CUMENE)	ug/l	1	U		0.21	J		1	U		1	U		1	U	
METHYL ETHYL KETONE (2-BUTANONE)	ug/l	10	U		10	U		10	U		10	U		10	U	
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/l	5	U		5	U		5	U		5	U		5	U	
METHYL TERT-BUTYL ETHER	ug/l	1	U		1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	ug/l	0.31	J	U	1.4	J		2	U		2	U		2	U	
NAPHTHALENE	ug/l	0.31	J		3.2			1	U		1	U		1	U	
N-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
N-PROPYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
O-XYLENE (1,2-DIMETHYLBENZENE)	ug/l	1	U		0.72	J		1	U		1	U		1	U	
SEC-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
STYRENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TERT-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TETRACHLOROETHYLENE(PCE)	ug/l	1	U		9.7			1	U		1.9			1	U	
TOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	ug/l	0.21	J		2.8			0.22	J		2.2			0.52	J	
TRANS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRICHLOROETHYLENE (TCE)	ug/l	0.57	J		170			0.98	J		73			65		
TRICHLOROFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
VINYL CHLORIDE	ug/l	1	U		23			1.7			240			5.2		
XYLENE, M/P	ug/l	2	U		2	U		2	U		2	U		2	U	
XYLENES, TOTAL	ug/l	3	U		0.72	J		3	U		3	U		3	U	

ug/L = micrograms per Liter
J = Estimated result. Result is less than RL.
U = Analyte analyzed for, but was not detected.
Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier

Table 3-5b

Groundwater and SeepsAnalytical Results - VOCs, October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-603D			MW-604D			MW-605D			MW-707DD			MW-708DD		
Field Sample ID		MW-603D-1210			MW-604D-1210			MW-605D-1210			MW-707DD-1210			MW-708DD-1210		
Sample Date/Time		10/23/12			10/24/12			10/24/12			10/23/12			10/22/12		
Purpose		original data			original data			original data			original data			original data		
Parameter (Method 8260B)	Units	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
1,1,1,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,1-TRICHLOROETHANE	ug/l	1	U		34			3.3			1	U		1	U	
1,1,2,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	ug/l	1.1			16			2.9			1	U		6.6		
1,1-DICHLOROETHENE	ug/l	0.36	J		2.9			1	U		1	U		44		
1,1-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROPROPANE	ug/l	5	U		5	U		5	U		5	U		5	U	
1,2,4-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,4-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3,5-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-CHLOROTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-HEXANONE	ug/l	5	U		5	U		5	U		5	U		5	U	
4-CHLOROTOLUENE	ug/l	2	U		2	U		2	U		2	U		2	U	
4-ISOPROPYLTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
ACETONE	ug/l	5	U		5	U		5	U		5	U		5	U	
BENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOFORM	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOMETHANE	ug/l	5	U		5	U		5	U		5	U		5	U	
CARBON DISULFIDE	ug/l	1	U		1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROETHANE	ug/l	2	U		2	U		2	U		2	U		2	U	
CHLOROFORM	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHYLENE	ug/l	1	U		18			0.32	J		0.35	J		74		
CIS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
ETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
HEXACHLOROBUTADIENE	ug/l	5	U		5	U		5	U		5	U		5	U	
ISOPROPYLBENZENE (CUMENE)	ug/l	1	U		1	U		1	U		1	U		1	U	
METHYL ETHYL KETONE (2-BUTANONE)	ug/l	10	U		10	U		10	U		10	U		10	U	
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/l	5	U		5	U		5	U		5	U		5	U	
METHYL TERT-BUTYL ETHER	ug/l	1	U		1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	ug/l	0.3	J	U	2	U		2	J	U	2	U		0.33	U	
NAPHTHALENE	ug/l	1	U		1	U		1	U		1	U		1	U	
N-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
N-PROPYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
O-XYLENE (1,2-DIMETHYLBENZENE)	ug/l	1	U		1	U		1	U		1	U		1	U	
SEC-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
STYRENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TERT-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TETRACHLOROETHYLENE(PCE)	ug/l	1	U		1	U		1	U		1	U		1	U	
TOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	ug/l	1	U		0.42	J		1	U		1	U		0.47	J	
TRANS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRICHLOROETHYLENE (TCE)	ug/l	1	U		16			2.8			1	U		0.28	J	
TRICHLOROFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
VINYL CHLORIDE	ug/l	1	U		2			1	U		1	U		5.9		
XYLENE, M/P	ug/l	2	U		2	U		2	U		2	U		2	U	
XYLENES, TOTAL	ug/l	3	U		3	U		3	U		3	U		3	U	

ug/L = micrograms per Liter
J = Estimated result. Result is less than RL.
U = Analyte analyzed for, but was not detected.
Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier

Table 3-5b

Groundwater and SeepsAnalytical Results - VOCs, October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-709DD			MW-710D			MW-711D			MW-712DD			MW-713D		
Field Sample ID		MW-709DD-1210			MW-710D-1210			711D-1210			MW-712DD-1210			MW-713D-1210		
Sample Date/Time		10/23/12			10/22/12			10/23/12			10/22/12			10/23/12		
Purpose		original data			original data			original data			original data			original data		
Parameter (Method 8260B)	Units	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
1,1,1,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,1-TRICHLOROETHANE	ug/l	28			20			6.2			2.6			1	U	
1,1,2,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	ug/l	37			34			5.6			5.6			0.84	J	
1,1-DICHLOROETHENE	ug/l	14			13			0.83	J		3.9			3.7		
1,1-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROPROPANE	ug/l	5	U		5	U		5	U		5	U		5	U	
1,2,4-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2,4-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		0.49	J	
1,2-DIBROMO-3-CHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3,5-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,3-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-CHLOROTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
2-HEXANONE	ug/l	5	U		5	U		5	U		5	U		5	U	
4-CHLOROTOLUENE	ug/l	2	U		2	U		2	U		2	U		2	U	
4-ISOPROPYLTOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
ACETONE	ug/l	5	U		5	U		5	U		5	U		5	U	
BENZENE	ug/l	1	U		1	U		1	U		1	U		0.21	J	
BROMOBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOFORM	ug/l	1	U		1	U		1	U		1	U		1	U	
BROMOMETHANE	ug/l	5	U		5	U		5	U		5	U		5	U	
CARBON DISULFIDE	ug/l	1	U		1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROETHANE	ug/l	2	U		0.9	J		2	U		2	U		2	U	
CHLOROFORM	ug/l	1	U		1	U		1	U		1	U		1	U	
CHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHYLENE	ug/l	39			24			2.4			12			6.1		
CIS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DIBROMOMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
ETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
HEXACHLOROBUTADIENE	ug/l	5	U		5	U		5	U		5	U		5	U	
ISOPROPYLBENZENE (CUMENE)	ug/l	1	U		1	U		1	U		1	U		0.41	J	
METHYL ETHYL KETONE (2-BUTANONE)	ug/l	10	U		10	U		10	U		10	U		10	U	
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/l	5	U		5	U		5	U		5	U		5	U	
METHYL TERT-BUTYL ETHER	ug/l	1	U		1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	ug/l	2	U		2	U		0.39	J	U	0.31	J	U	0.34	J	U
NAPHTHALENE	ug/l	1	U		1	U		1	U		1	U		0.3	J	
N-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		0.34	J	
N-PROPYLBENZENE	ug/l	1	U		1	U		1	U		1	U		0.22	J	
O-XYLENE (1,2-DIMETHYLBENZENE)	ug/l	1	U		1	U		1	U		1	U		1	U	
SEC-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		0.18	J	
STYRENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TERT-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TETRACHLOROETHYLENE(PCE)	ug/l	1	U		0.68	J		1	U		1	U		1	U	
TOLUENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	ug/l	0.6	J		0.37	J		1	U		0.43	J		1	U	
TRANS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U		1	U	
TRICHLOROETHYLENE (TCE)	ug/l	21			18			2.8			2.8			1	U	
TRICHLOROFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U		1	U	
VINYL CHLORIDE	ug/l	9.5			4.4			1	U		1	U		1	U	
XYLENE, M/P	ug/l	2	U		2	U		2	U		2	U		0.66	J	
XYLENES, TOTAL	ug/l	3	U		3	U		3	U		3	U		3	U	

ug/L = micrograms per Liter
J = Estimated result. Result is less than RL.
U = Analyte analyzed for, but was not detected.
Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier

Table 3-5b

Groundwater and SeepsAnalytical Results - VOCs, October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		SEEP-1210-1			SEEP-1210-2			SEEP-1210-3			SURFACE-1210-1		
Field Sample ID		Seep-1210-1			Seep-1210-2			Seep-1210-3			Surface-1210-1		
Sample Date/Time		10/25/12			10/25/12			10/25/12			10/25/12		
Purpose		original data			original data			original data			original data		
Parameter (Method 8260B)	Units	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
1,1,1,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U	
1,1,1-TRICHLOROETHANE	ug/l	0.68	J		1	U		1.9			1	U	
1,1,2,2-TETRACHLOROETHANE	ug/l	1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U	
1,1-DICHLOROETHANE	ug/l	0.89	J		1	U		2.5			1	U	
1,1-DICHLOROETHENE	ug/l	1	U		1	U		0.39	J		1	U	
1,1-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U	
1,2,3-TRICHLOROPROPANE	ug/l	5	U		5	U		5	U		5	U	
1,2,4-TRICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U	
1,2,4-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U	
1,2-DIBROMO-3-CHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ug/l	1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE	ug/l	1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U	
1,3,5-TRIMETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U	
1,3-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U	
2,2-DICHLOROPROPANE	ug/l	1	U		1	U		1	U		1	U	
2-CHLOROTOLUENE	ug/l	1	U		1	U		1	U		1	U	
2-HEXANONE	ug/l	5	U		5	U		5	U		5	U	
4-CHLOROTOLUENE	ug/l	2	U		2	U		2	U		2	U	
4-ISOPROPYLTOLUENE	ug/l	1	U		1	U		1	U		1	U	
ACETONE	ug/l	5	U		5	U		1.7	J		2.5	J	
BENZENE	ug/l	1	U		1	U		1	U		1	U	
BROMOBENZENE	ug/l	1	U		1	U		1	U		1	U	
BROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U	
BROMOFORM	ug/l	1	U		1	U		1	U		1	U	
BROMOMETHANE	ug/l	5	U		5	U		5	U		5	U	
CARBON DISULFIDE	ug/l	1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE	ug/l	1	U		1	U		1	U		1	U	
CHLOROBENZENE	ug/l	1	U		1	U		1	U		1	U	
CHLOROETHANE	ug/l	2	U		2	U		2	U		2	U	
CHLOROFORM	ug/l	1	U		1	U		1	U		1	U	
CHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U	
CIS-1,2-DICHLOROETHYLENE	ug/l	0.87	J		1	U		1.7			1	U	
CIS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U	
DIBROMOCHLOROMETHANE	ug/l	1	U		1	U		1	U		1	U	
DIBROMOMETHANE	ug/l	1	U		1	U		1	U		1	U	
DICHLORODIFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U	
ETHYLBENZENE	ug/l	1	U		1	U		1	U		1	U	
HEXACHLOROBUTADIENE	ug/l	5	U		5	U		5	U		5	U	
ISOPROPYLBENZENE (CUMENE)	ug/l	1	U		1	U		1	U		1	U	
METHYL ETHYL KETONE (2-BUTANONE)	ug/l	10	U		10	U		10	U		10	U	
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/l	5	U		5	U		5	U		5	U	
METHYL TERT-BUTYL ETHER	ug/l	1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE	ug/l	2	U		2	U		2	U		2	U	
NAPHTHALENE	ug/l	1	U		1	U		1	U		1	U	
N-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U	
N-PROPYLBENZENE	ug/l	1	U		1	U		1	U		1	U	
O-XYLENE (1,2-DIMETHYLBENZENE)	ug/l	1	U		1	U		1	U		1	U	
SEC-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U	
STYRENE	ug/l	1	U		1	U		1	U		1	U	
TERT-BUTYLBENZENE	ug/l	1	U		1	U		1	U		1	U	
TETRACHLOROETHYLENE(PCE)	ug/l	1	U		1	U		1	U		1	U	
TOLUENE	ug/l	1	U		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE	ug/l	1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE	ug/l	1	U		1	U		1	U		1	U	
TRICHLOROETHYLENE (TCE)	ug/l	0.33	J		1	U		0.86	J		1	U	
TRICHLOROFLUOROMETHANE	ug/l	1	U		1	U		1	U		1	U	
VINYL CHLORIDE	ug/l	1	U		1	U		1	U		1	U	
XYLENE, M/P	ug/l	2	U		2	U		2	U		2	U	
XYLENES, TOTAL	ug/l	3	U		3	U		3	U		3	U	

ug/L = micrograms per Liter
J = Estimated result. Result is less than RL.
U = Analyte analyzed for, but was not detected.
Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name		MW-1		MW-2		MW-2		MW-3		MW-4	
	Field Sample ID		A02MW010001		A02MW020001		A02MW9005		A02MW30001		A02MW40001	
	Sample Date		8/23/2011		8/23/2011		8/23/2011		8/22/2011		8/19/2011	
	Purpose		Original data		Original data		Field Duplicate		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	113	J	93.6	J	82.7	J	200	U	200	U
ALUMINUM	ug/L	Dissolved	194	J	139	J	93.3	J	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	10	U	3.4	J	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	64.4		56.5		55.5		80.5		39.4	J
BARIUM	ug/L	Dissolved	60.9		55.1		55.3		81.1		34.3	J
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	216000		91600		93700		102000		61900	
CALCIUM	ug/L	Dissolved	206000		87400		89500		103000		66000	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	5.3	J	50	U	50	U	21.1	J	50	U
COBALT	ug/L	Dissolved	4.6	J	50	U	50	U	20.6	J	50	U
COPPER	ug/L	Total	25	U	25	U	25	U	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	1450		100	U	100	U	5880		100	U
IRON	ug/L	Dissolved	126		100	U	100	U	3330		100	U
LEAD	ug/L	Total	10	U	10	U	10	U	10	U	10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	35800		20200		20000		26100		23000	
MAGNESIUM	ug/L	Dissolved	35500		19800		20000		26900		22800	
MANGANESE	ug/L	Total	348		155		152		349		172	
MANGANESE	ug/L	Dissolved	317		151		152		348		79.8	
NICKEL	ug/L	Total	118		40	U	40	U	1000		40	U
NICKEL	ug/L	Dissolved	107		40	U	40	U	954		40	U
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	445000		20800		20600		10500	E	25500	
SODIUM	ug/L	Dissolved	424000		20900		21000		10200	E	25400	
STRONTIUM	ug/L	Total	750		356		374		289		169	
STRONTIUM	ug/L	Dissolved	708		330		344		236		207	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	410		20	U	20	U	29.9		83.7	
ZINC	ug/L	Dissolved	348		20	U	20	U	26.4		73	

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name		MW-5		MW-6		MW-7		MW-8		MW-9	
	Field Sample ID		A02MW50001		A02MW060001		A02MW070001		A02MW080001		A02MW090001	
	Sample Date		8/22/2011		8/12/2011		8/12/2011		8/8/2011		8/8/2011	
	Purpose		Original data		Original data		Original data		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	200	U	200	U	200	U	200	U	94.3	J
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	53.7		23.3	J	97.3		48.8	J	31.8	J
BARIUM	ug/L	Dissolved	54.6		19.2	J	100		47	J	31.4	J
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	96400		116000		92000		198000		85900	
CALCIUM	ug/L	Dissolved	95200		114000		96300		191000		85400	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	5.5	J	4.4	J	7	J	50	U	50	U
COBALT	ug/L	Dissolved	5.6	J	50	U	7.1	J	50	U	50	U
COPPER	ug/L	Total	25	U	25	U	25	U	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	2840		53.6	J	2880		207		1730	
IRON	ug/L	Dissolved	2970		100	U	1080		140		1600	
LEAD	ug/L	Total	10	U	10	U	10	U	10	U	2.2	J
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	21500		47200		27300		48600		23700	
MAGNESIUM	ug/L	Dissolved	21600		46500		28600		47700		23800	
MANGANESE	ug/L	Total	288		673		387		245		304	
MANGANESE	ug/L	Dissolved	292		305		379		236		303	
NICKEL	ug/L	Total	534		259		237		40	U	40	U
NICKEL	ug/L	Dissolved	524		223		238		40	U	40	U
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	10800	E	16900	B	49400	B	185000	B	19300	B
SODIUM	ug/L	Dissolved	10600	E	17400	B	49700	B	178000	B	19300	B
STRONTIUM	ug/L	Total	212		347	B	325	B	892		272	
STRONTIUM	ug/L	Dissolved	269		338	B	340	B	845		268	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	8.6	J	425		35.3		20	U	18.9	J
ZINC	ug/L	Dissolved	7.8	J	382		22		20	U	20	U

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-10		MW-11		MW-12		MW-13D		MW-14	
	Field Sample ID	A02MW100001		A02MW110001		A02MW120001		A03AMW13D0001		A03MW14D0001	
	Sample Date	8/12/2011		8/8/2011		8/22/2011		8/11/2011		8/16/2011	
	Purpose	Original data		Original data		Original data		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	200	U	200	U	200	U	200	U	200	U
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U	4	J
ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	52		65.2		77		61.8		152	
BARIUM	ug/L	Dissolved	54.6		68.4		76.4		61.3		151	
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	124000		114000		62100		50400		39300	
CALCIUM	ug/L	Dissolved	128000		112000		62400		50300		41900	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	13.9	J	50	U	4.2	J	50	U	50	U
COBALT	ug/L	Dissolved	14.6	J	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	25	U	25	U	25	U	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	3710		2120		802		80.6	J	1610	
IRON	ug/L	Dissolved	3600		2250		217		61.8	J	1260	
LEAD	ug/L	Total	10	U	10	U	10	U	10	U	10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	25800		34000		14300		17600		136000	
MAGNESIUM	ug/L	Dissolved	27200		34100		14200		17600		144000	
MANGANESE	ug/L	Total	955		119		348		183		224	
MANGANESE	ug/L	Dissolved	998		126		344		189		223	
NICKEL	ug/L	Total	566		40	U	246		40	U	40	U
NICKEL	ug/L	Dissolved	577		40	U	227		40	U	40	U
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	7070	B	49900	B	2070	E	217000	B	98000	
SODIUM	ug/L	Dissolved	7270	B	47500	B	1960	E	208000	B	105000	
STRONTIUM	ug/L	Total	475	B	492		206		177	B	182	
STRONTIUM	ug/L	Dissolved	479	B	496		183		176	B	193	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	207		7.3	J	46.4		166		273	
ZINC	ug/L	Dissolved	208		20	U	42		168		264	

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-15		MW-16		MW-16		MW-17		MW-18	
	Field Sample ID	A03MW15D0001		A03MW16D0001		A03MW9004		A03MW17D0001		A04BMW180001	
	Sample Date	8/16/2011		8/19/2011		8/19/2011		8/16/2011		8/5/2011	
	Purpose	Original data		Original data		Field Duplicate		Original data		Original data	
Parameter (Method 6010C)	**Units**	**Filtered**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**
ALUMINUM	ug/L	Total	313		200	U	200	U	200	U	200	U
ALUMINUM	ug/L	Dissolved	121	J	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	4.1	J	10	U	10	U	10	U
ARSENIC	ug/L	Total	6	J	10	U	10	U	3.4	J	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	26.8	J	118		119		78.8		68.3	
BARIUM	ug/L	Dissolved	23	J	116		119		80.8		67.6	
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	7090		58400		54900		66400		64200	
CALCIUM	ug/L	Dissolved	6410		52800		56000		69400		63800	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	50	U	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	7.4	J	25	U	25	U	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	283		1590		1590		1050		37.4	J
IRON	ug/L	Dissolved	36.3	J	1490		1540		293		100	U
LEAD	ug/L	Total	10	U	10	U	10	U	1.6	J	10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	2000		63800		62400		20300		37200	
MAGNESIUM	ug/L	Dissolved	1290		59400		63100		20500		37400	
MANGANESE	ug/L	Total	3.8	J	808		811		11.2	J	396	
MANGANESE	ug/L	Dissolved	15	U	774		796		11	J	393	
NICKEL	ug/L	Total	14.7	J	40	U	40	U	40	U	40	U
NICKEL	ug/L	Dissolved	40	U	40	U	40	U	40	U	40	U
SELENIUM	ug/L	Total	11.2	J	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	16.2		15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	143000		154000		153000		301000		122000	
SODIUM	ug/L	Dissolved	151000		147000		155000		314000		124000	B
STRONTIUM	ug/L	Total	59		264		162		311		187	
STRONTIUM	ug/L	Dissolved	61.8		207		202		316		193	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	18.3	J	24.3		24		17.2	J	177	
ZINC	ug/L	Dissolved	20	U	22.8		23.3		17.8	J	180	

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-19		MW-20		MW-21		MW-22		MW-23	
		Field Sample ID	A04BMW190001		A04AMW200001		A04AMW210001		A04AMW220001		A04DMW230001	
		Sample Date	8/4/2011		8/18/2011		8/18/2011		8/5/2011		8/4/2011	
		Purpose	Original data		Original data		Original data		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	3150		369		93.9	J	200	U	200	U
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	59.6		59.5		72		26.2	J	58.8	
BARIUM	ug/L	Dissolved	43.8	J	57.4		72		36.4	J	54.5	
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	1.1	J	5	U	5	U	5	U
CALCIUM	ug/L	Total	152000		91800		80100		69700		88200	
CALCIUM	ug/L	Dissolved	65300		91900		110000		74200		92800	
CHROMIUM, TOTAL	ug/L	Total	8	J	10	U	10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	50	U	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	12.2	J	25	U	25	U	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	3800		250		64.9	J	556		928	
IRON	ug/L	Dissolved	100	U	28.7	J	100	U	962		679	
LEAD	ug/L	Total	8.7	J	2.1	J	10	U	10	U	10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	64700		20900		25500		24800		22400	
MAGNESIUM	ug/L	Dissolved	29300		20300		36500		24800		21800	
MANGANESE	ug/L	Total	351		22.5		4.3	J	90.9		804	
MANGANESE	ug/L	Dissolved	15	U	15	U	5.1	J	117		728	
NICKEL	ug/L	Total	19.6	J	40	U	40	U	190		20.6	J
NICKEL	ug/L	Dissolved	40	U	40	U	40	U	132		22.1	J
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	63400		46500		207000		39900		19300	
SODIUM	ug/L	Dissolved	62000		46200		223000		36000	B	18100	
STRONTIUM	ug/L	Total	409		195		177		350		341	
STRONTIUM	ug/L	Dissolved	326		206		608		384		364	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	4.7	J	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	70.9		265		64.9		10.7	J	117	
ZINC	ug/L	Dissolved	20	U	251		20	U	20	U	104	

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name		MW-24		MW-25		MW-25		MW-26		MW-600D	
	Field Sample ID		A04DMW240001		A04BMW250001		A04BMW9003		A04BMW260001		A02MW600D0001	
	Sample Date		8/4/2011		8/12/2011		8/12/2011		8/10/2011		8/22/2011	
	Purpose		Original data		Original data		Field Duplicate		Original data		Original data	
Parameter (Method 6010C)	**Units**	**Filtered**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**
ALUMINUM	ug/L	Total	200	U	200	U	200	U	200	U	200	U
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	67.9		109		110		54.5		192	
BARIUM	ug/L	Dissolved	67.3		108		105		59.1		197	
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	1.7	J	1.6	J	5	U	1.2	J
CADMIUM	ug/L	Dissolved	5	U	1.5	J	1.5	J	5	U	1.2	J
CALCIUM	ug/L	Total	104000		146000		145000		83000		380000	
CALCIUM	ug/L	Dissolved	110000		146000		143000		85500		369000	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	50	U	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	25	U	25	U	25	U	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	767		61.6	J	54.3	J	166		648	
IRON	ug/L	Dissolved	612		72.9	J	58.6	J	52.9	J	322	
LEAD	ug/L	Total	10	U	10	U	10	U	10	U	16.4	
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	1.5	J
MAGNESIUM	ug/L	Total	31700		47800		47100		22100		152000	
MAGNESIUM	ug/L	Dissolved	32500		48300		47300		23000		149000	
MANGANESE	ug/L	Total	110		863		856		145		353	
MANGANESE	ug/L	Dissolved	104		865		846		115		353	
NICKEL	ug/L	Total	15.8	J	103		103		40	U	40	U
NICKEL	ug/L	Dissolved	14.6	J	103		101		40	U	40	U
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	77600		888000	B	885000	B	325000	B	1830000	E
SODIUM	ug/L	Dissolved	71300		836000	B	854000	B	321000	B	1840000	E
STRONTIUM	ug/L	Total	495		892	B	892	B	373		1280	
STRONTIUM	ug/L	Dissolved	522		868	B	841	B	382		1340	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	13.9	J	192		193		59.4		614	
ZINC	ug/L	Dissolved	11.3	J	196		190		57.5		611	

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-601D		MW-602D		MW-603D		MW-604D		MW-605D	
	Field Sample ID	A04AMW610D0001		A04MW602D0001		A04AMW603D0001		A04MW604D0001		A04BMW605D0001	
	Sample Date	8/18/2011		8/11/2011		8/5/2011		8/10/2011		8/10/2011	
	Purpose	Original data		Original data		Original data		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	432		791		200		725		937	
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	6.3	J	10	U	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	12.9		10	U	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	17.6	J	29.2	J	73.6		78.7		53	
BARIUM	ug/L	Dissolved	19.1	J	26	J	30.7	J	74.3		46.5	J
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	3.8	J	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	101000		107000		125000		106000		85700	
CALCIUM	ug/L	Dissolved	84600		86100		129000		98600		68100	
CHROMIUM, TOTAL	ug/L	Total	5.8	J	10	U	11.3		10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	50	U	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	25	U	25	U	5.2	J	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	530		861		50700		552		957	
IRON	ug/L	Dissolved	74.7	J	57.5	J	932		100	U	132	
LEAD	ug/L	Total	5.5	J	10	U	10	U	2.5	J	5	J
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	38900		46200		47900		28400		40800	
MAGNESIUM	ug/L	Dissolved	32000		39500		46500		25800		34300	
MANGANESE	ug/L	Total	132		100		207		114		413	
MANGANESE	ug/L	Dissolved	76.3		8.4	J	125		33.6		278	
NICKEL	ug/L	Total	40	U	40	U	108		40	U	24.6	J
NICKEL	ug/L	Dissolved	40	U	40	U	70.8		40	U	19.3	J
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	125000		79100	B	30600		307000	B	62200	B
SODIUM	ug/L	Dissolved	119000		76300	B	30900		296000	B	60100	B
STRONTIUM	ug/L	Total	559		504	B	478		419		190	
STRONTIUM	ug/L	Dissolved	488		500	B	478		413		178	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	9.8	J	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	39.2		38.9		996		170		73.1	
ZINC	ug/L	Dissolved	14.8	J	20.5		134		118		22.5	

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-605D		MW-606D		MW-606DR		MW-607D		MW-701DD	
		Field Sample ID	A04BMW9000		A03MW606D0001		A03MW606DR0001		A03MW607D0001		A04AMW701DD0001	
		Sample Date	8/10/2011		8/16/2011		8/15/2011		8/19/2011		8/19/2011	
		Purpose	Field Duplicate		Original data		Original data		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	1620		200	U	200	U	15200		236	
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	2580		80.8	
ANTIMONY	ug/L	Total	10	U	10	U	10	U	5.8	J	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	4.4	J	10	U
ARSENIC	ug/L	Total	10	U	10	U	10	U	9.2	J	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	57.7		158		74.4		132		26.1	J
BARIUM	ug/L	Dissolved	45.6	J	155		75.4		64.1		23.1	J
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	0.67	J	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	1	J	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	94900		45300		134000		719000		141000	
CALCIUM	ug/L	Dissolved	67200		44300		138000		159000		141000	
CHROMIUM, TOTAL	ug/L	Total	3.2	J	10	U	10	U	17.1		10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	50	U	6.5	J	50	U
COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	6.4	J	25	U	25	U	21.6	J	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	1570		1570		727		16200		275	
IRON	ug/L	Dissolved	121		1420		584		2440		75.2	J
LEAD	ug/L	Total	8.6	J	10	U	10	U	41.8		10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	6	J	10	U
MAGNESIUM	ug/L	Total	44700		135000		83000		211000		60700	
MAGNESIUM	ug/L	Dissolved	34000		135000		84300		101000		58100	
MANGANESE	ug/L	Total	489		177		170		2380		20.6	
MANGANESE	ug/L	Dissolved	278		176		163		561		12.5	J
NICKEL	ug/L	Total	28.6	J	40	U	40	U	19.3	J	40	U
NICKEL	ug/L	Dissolved	19.8	J	40	U	40	U	40	U	40	U
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	60100	B	109000		197000		61600		254000	
SODIUM	ug/L	Dissolved	62400	B	109000		200000		60200		252000	
STRONTIUM	ug/L	Total	188		240		1740		830		2650	
STRONTIUM	ug/L	Dissolved	180		213		1830		412		2590	
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	15.3	J	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	109		269		61		305		20	U
ZINC	ug/L	Dissolved	21.2		184		13.3	J	47.7		7.1	J

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name		MW-702DD		MW-703DD		MW-704DD		MW-704DD		MW-705D	
	Field Sample ID		A04MW702DD0001		A03MW703DD0001		A04BMW9001		A04DMW704DD0001		MW705D0001	
	Sample Date		8/11/2011		8/19/2011		8/10/2011		8/10/2011		8/9/2011	
	Purpose		Original data		Original data		Field Duplicate		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	200	U	2010		200	U	200	U	80.3	J
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	50	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	50	U	10	U	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Dissolved	2.7	J	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	10.9	J	55		55.7		56.9		25.8	J
BARIUM	ug/L	Dissolved	11.4	J	45.7	J	55.4		55.8		26.9	J
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	468000		382000		271000		274000		125000	
CALCIUM	ug/L	Dissolved	473000		265000		273000		275000		94200	
CHROMIUM, TOTAL	ug/L	Total	10	U	11.5		10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	50	U	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	25	U	11.4	J	25	U	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	28.4	J	4210		100	U	30.2	J	48.2	J
IRON	ug/L	Dissolved	100	U	521		100	U	100	U	100	U
LEAD	ug/L	Total	10	U	10.8		10	U	10	U	10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	181000		110000		106000		106000		31000	
MAGNESIUM	ug/L	Dissolved	171000		76000		107000		107000		35200	
MANGANESE	ug/L	Total	54.2		462		65.5		69.4		9.5	J
MANGANESE	ug/L	Dissolved	52.4		18.7		68.8		66.7		20.6	
NICKEL	ug/L	Total	40	U	40	U	40	U	40	U	40	U
NICKEL	ug/L	Dissolved	40	U	40	U	40	U	40	U	40	U
SELENIUM	ug/L	Total	15	U	75	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	75	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	204000	B	191000		107000	B	105000	B	174000	
SODIUM	ug/L	Dissolved	176000	B	187000		109000	B	112000	B	194000	
STRONTIUM	ug/L	Total	9620	B	15200		4840		4990		1680	
STRONTIUM	ug/L	Dissolved	9540	B	15300		4730		4890		1310	
THALLIUM	ug/L	Total	4.4	J	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	13.1	J	41.9		20	U	20	U	20	U
ZINC	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name		MW-705DD		MW-706DD		MW-707DD		MW-708DD		MW-708DD	
	Field Sample ID		MW705DD0001		A04BMW706D0001		A04BMW707DD0001		A04DMW708DD0001		A04DMW9002	
	Sample Date		8/9/2011		8/15/2011		8/18/2011		8/11/2011		8/11/2011	
	Purpose		Original data		Original data		Original data		Original data		Field Duplicate	
Parameter (Method 6010C)	**Units**	**Filtered**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**	**Result**	**LabQual**
ALUMINUM	ug/L	Total	200	U	126	J	2320		89.5	J	151	J
ALUMINUM	ug/L	Dissolved	200	U	200	U	840		200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	12.5		10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	8	J	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	2.6	J	10	U	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	24.7	J	16	J	183		12.4	J	13.3	J
BARIUM	ug/L	Dissolved	23.9	J	15.4	J	172		11.6	J	11.6	J
BERYLLIUM	ug/L	Total	5	U	5	U	0.99	J	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	531000		520000		1200000	E	178000		187000	
CALCIUM	ug/L	Dissolved	372000		560000		1260000	E	182000		177000	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	4.2	J	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	9.2	J	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U	7.3	J	50	U	50	U
COPPER	ug/L	Total	25	U	25	U	14.4	J	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U	25	U	25	U	25	U
IRON	ug/L	Total	36.1	J	393		3710		234		268	
IRON	ug/L	Dissolved	100	U	340		1400		144		147	
LEAD	ug/L	Total	10	U	10	U	2	J	10	U	10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	287000		112000		544000		52200		55600	
MAGNESIUM	ug/L	Dissolved	234000		127000		586000		51000		49400	
MANGANESE	ug/L	Total	14.5	J	105		862		19.4		21.4	
MANGANESE	ug/L	Dissolved	15	U	102		489		11	J	10.2	J
NICKEL	ug/L	Total	40	U	40	U	40	U	40	U	40	U
NICKEL	ug/L	Dissolved	40	U	40	U	40	U	40	U	40	U
SELENIUM	ug/L	Total	15	U	15	U	11.2	J	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	983000		166000		3700000		113000	B	115000	B
SODIUM	ug/L	Dissolved	449000		170000		4180000		114000	B	113000	B
STRONTIUM	ug/L	Total	13500		7350		19000	E	1890	B	1980	B
STRONTIUM	ug/L	Dissolved	8860		7700		21700	E	1970	B	1940	B
THALLIUM	ug/L	Total	20	U	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	4.5	J	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	20	U	20	U	47.3		20	U	20	U
ZINC	ug/L	Dissolved	20	U	20	U	19.6	J	20	U	20	U

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-709DD		MW-710D		MW-710DD		MW-711D		MW-711DD	
	Field Sample ID	A04DMW709DD0001		A04DMW710D0001		A04DMW710DD0001		A04DMW711D0001		A04DMW711DD0001	
	Sample Date	8/10/2011		8/15/2011		8/18/2011		8/9/2011		8/15/2011	
	Purpose	Original data		Original data		Original data		Original data		Original data	
Parameter (Method 6010C)	Units	Filtered	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual	Result	LabQual
ALUMINUM	ug/L	Total	102	J	200	U	346		200	U	200	U
ALUMINUM	ug/L	Dissolved	200	U	200	U	200	U	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Total	10	U	10	U	10	U	10	U	10	U
ARSENIC	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
BARIUM	ug/L	Total	73.4		30.6	J	51.9		53.3		39.4	J
BARIUM	ug/L	Dissolved	68.5		47.6	J	51		56		32	J
BERYLLIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U	5	U	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U	5	U	5	U	5	U
CALCIUM	ug/L	Total	125000		117000		195000		120000		455000	
CALCIUM	ug/L	Dissolved	121000		113000		203000		118000		483000	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U	10	U	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
COBALT	ug/L	Total	50	U	50	U	50	U	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
COPPER	ug/L	Total	25	U	25	U	25	U	121		7.6	J
COPPER	ug/L	Dissolved	25	U	25	U	25	U	104		25	U
IRON	ug/L	Total	239		94	J	300		93.2	J	81	J
IRON	ug/L	Dissolved	127		150		167		33.8	J	100	U
LEAD	ug/L	Total	10	U	10	U	10	U	10	U	10	U
LEAD	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
MAGNESIUM	ug/L	Total	38500		32100		34000		39100		225000	
MAGNESIUM	ug/L	Dissolved	37800		31400		34100		38900		238000	
MANGANESE	ug/L	Total	35.7		25.2		29.4		55.7		11.7	J
MANGANESE	ug/L	Dissolved	25.6		26.4		26		59.6		6.2	J
NICKEL	ug/L	Total	40	U	40	U	40	U	40	U	40	U
NICKEL	ug/L	Dissolved	40	U	40	U	40	U	40	U	40	U
SELENIUM	ug/L	Total	15	U	15	U	15	U	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U	15	U	15	U	15	U
SILVER	ug/L	Total	10	U	10	U	10	U	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U	10	U	10	U	10	U
SODIUM	ug/L	Total	203000	B	214000		198000		165000		673000	
SODIUM	ug/L	Dissolved	203000	B	205000		214000		164000		733000	
STRONTIUM	ug/L	Total	1270		615		1120		615		7690	
STRONTIUM	ug/L	Dissolved	1240		584		1130		572		8640	
THALLIUM	ug/L	Total	4.4	J	20	U	20	U	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U	20	U	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U	50	U	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U	50	U	50	U	50	U
ZINC	ug/L	Total	20	U	20	U	11.3	J	20	U	20	U
ZINC	ug/L	Dissolved	20	U	20	U	12.4	J	20	U	20	U

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6a

Groundwater Analytical Results - Metals (Unfiltered and Filtered), August 2011

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-712DD		MW-713D	
		Field Sample ID	A04DMW712DD0001		A04DMW713D0001	
		Sample Date	8/18/2011		8/4/2011	
		Purpose	Original data		Original data	
Parameter (Method 6010C)	**Units**	**Filtered**	**Result**	**LabQual**	**Result**	**LabQual**
ALUMINUM	ug/L	Total	110	J	280	
ALUMINUM	ug/L	Dissolved	200	U	200	U
ANTIMONY	ug/L	Total	10	U	10	U
ANTIMONY	ug/L	Dissolved	10	U	10	U
ARSENIC	ug/L	Total	10	U	14.2	
ARSENIC	ug/L	Dissolved	10	U	9.3	J
BARIUM	ug/L	Total	62.4		217	
BARIUM	ug/L	Dissolved	60.8		221	
BERYLLIUM	ug/L	Total	5	U	5	U
BERYLLIUM	ug/L	Dissolved	5	U	5	U
CADMIUM	ug/L	Total	5	U	5	U
CADMIUM	ug/L	Dissolved	5	U	5	U
CALCIUM	ug/L	Total	169000		146000	
CALCIUM	ug/L	Dissolved	166000		141000	
CHROMIUM, TOTAL	ug/L	Total	10	U	10	U
CHROMIUM, TOTAL	ug/L	Dissolved	10	U	10	U
COBALT	ug/L	Total	50	U	50	U
COBALT	ug/L	Dissolved	50	U	50	U
COPPER	ug/L	Total	25	U	25	U
COPPER	ug/L	Dissolved	25	U	25	U
IRON	ug/L	Total	145		583	
IRON	ug/L	Dissolved	43.8	J	259	
LEAD	ug/L	Total	10	U	10	U
LEAD	ug/L	Dissolved	10	U	10	U
MAGNESIUM	ug/L	Total	47600		60900	
MAGNESIUM	ug/L	Dissolved	47800		59200	
MANGANESE	ug/L	Total	15.3		134	
MANGANESE	ug/L	Dissolved	9.7	J	113	
NICKEL	ug/L	Total	40	U	40	U
NICKEL	ug/L	Dissolved	40	U	40	U
SELENIUM	ug/L	Total	15	U	15	U
SELENIUM	ug/L	Dissolved	15	U	15	U
SILVER	ug/L	Total	10	U	10	U
SILVER	ug/L	Dissolved	10	U	10	U
SODIUM	ug/L	Total	279000		74700	
SODIUM	ug/L	Dissolved	276000		73000	
STRONTIUM	ug/L	Total	887		1300	
STRONTIUM	ug/L	Dissolved	878		1270	
THALLIUM	ug/L	Total	20	U	20	U
THALLIUM	ug/L	Dissolved	20	U	20	U
VANADIUM	ug/L	Total	50	U	50	U
VANADIUM	ug/L	Dissolved	50	U	50	U
ZINC	ug/L	Total	84.4		8.8	J
ZINC	ug/L	Dissolved	79.3		20	U

LabQual = Laboratory Qualifier
ug/L = micrograms per Liter
E = Matrix interference.
B = Estimated result. Result is less than RL.
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6b

Groundwater, Seeps, and Surface Water Analytical Results - Metals (Unfiltered and Filtered), October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-1			MW-2			MW-4			MW-7			MW-9		
		Field Sample ID	MW-1F-1210			MW-2-1210			MW-04-1210			MW-7-1210			MW-9-1210		
		Sample Date	10/24/12			10/24/12			10/24/12			10/23/12			10/24/12		
		Purpose	original data			original data			original data			original data			original data		
Parameter (Method 6010C)	Units	Filtered	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALUMINUM	ug/l	Total	4	J		25	J		4.3	J	J	3.3			10	J	
ALUMINUM	ug/l	Dissolved	50	U		7.9	J		50	U	U	50			2.1	J	
ANTIMONY	ug/l	Total	2.5	U		2.5	U		2.5	U	U	2.5			2.5	U	
ANTIMONY	ug/l	Dissolved	2.5	U		2.5	U		2.5	U	U	2.5			2.5	U	
ARSENIC	ug/l	Total	1.5	U		1.5	U		1	J	U	1.5			0.74	J	
ARSENIC	ug/l	Dissolved	1.5	U		1.5	U		1.2	J	J	0.64			1.5	U	
BARIUM	ug/l	Total	36			58			38			110			36		
BARIUM	ug/l	Dissolved	36			51			31			100			34		
BERYLLIUM	ug/l	Total	1	U		1	U		1	U	U	1			1	U	
BERYLLIUM	ug/l	Dissolved	1	U		1	U		1	U	U	1			1	U	
CADMIUM	ug/l	Total	0.32	J		1	U		1	U	J	0.66			1	U	
CADMIUM	ug/l	Dissolved	1	U		1	U		0.3	J	J	0.3			1	U	
CALCIUM	ug/l	Total	100000			80000			80000			120000			100000		
CALCIUM	ug/l	Dissolved	120000			74000			72000			110000			100000		
CHROMIUM, TOTAL	ug/l	Total	10	U		1.2	J		0.52	J	J	0.8			1	J	
CHROMIUM, TOTAL	ug/l	Dissolved	3.3	J		2.5	J		2	J	J	3			3.2	J	
COBALT	ug/l	Total	5.7			5.8			0.29	J		15			0.72	J	
COBALT	ug/l	Dissolved	5.8			0.34	J		1	J		14			0.78	J	
COPPER	ug/l	Total	2.8	J		2.8	J		0.88	J	J	0.94			1.1	J	
COPPER	ug/l	Dissolved	2.3	J		0.39	J		0.97	J	J	0.6			0.54	J	
IRON	ug/l	Total	200	U		130	J		200			3600			1300		
IRON	ug/l	Dissolved	300			250			200	U		2600			1400		
LEAD	ug/l	Total	1	U		1.2			0.27	J	U	1			0.36	J	
LEAD	ug/l	Dissolved	1	U		1	U		1	U	U	1			1	U	
MAGNESIUM	ug/l	Total	21000			20000			25000			38000			37000		
MAGNESIUM	ug/l	Dissolved	24000			19000			24000			35000			40000		
MANGANESE	ug/l	Total	260			160			120			660			290		
MANGANESE	ug/l	Dissolved	250			140			68			640			280		
MERCURY	ug/l	Total	0.2	U		0.037	J		0.051	J	U	0.2			0.072	J	
MERCURY	ug/l	Dissolved	0.2	U		0.2	U		0.2	U	U	0.2			0.2	U	
NICKEL	ug/l	Total	80			17			5.4	J		400			7.9	J	
NICKEL	ug/l	Dissolved	87			2.3	J		3.5	J		410			9.5	J	
POTASSIUM	ug/l	Total	2700			4500			2900			2800			3200		
POTASSIUM	ug/l	Dissolved	2300			4200			5600			2600			3400		
SELENIUM	ug/l	Total	5	U		5	U		5	U	U	5			1.6	J	
SELENIUM	ug/l	Dissolved	5	U		5	U		5	U	U	5			5	U	
SILVER	ug/l	Total	0.23	J		1.5	U		1.5	U	U	1.5			1.5	U	
SILVER	ug/l	Dissolved	1.5	U		1.5	U		1.5	U	U	1.5			1.5	U	
SODIUM	ug/l	Total	180000			15000			29000			39000			13000		
SODIUM	ug/l	Dissolved	210000			16000			31000			39000			19000		
STRONTIUM	ug/l	Total															
STRONTIUM	ug/l	Dissolved															
THALLIUM	ug/l	Total	1.2	J		2	U		2	U	J	0.66			1	J	
THALLIUM	ug/l	Dissolved	0.22	J		5	U		5	U	U	5			5	U	
VANADIUM	ug/l	Total	4	U		4	U		4	U	U	4			4	U	
VANADIUM	ug/l	Dissolved	4	U		4	U		0.55	J	U	4			0.54	J	
ZINC	ug/l	Total	280			11	J		74			55			56		
ZINC	ug/l	Dissolved	230			10	J		71		J	46			22	J	

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
ug/L = micrograms per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6b

Groundwater, Seeps, and Surface Water Analytical Results - Metals (Unfiltered and Filtered), October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-11			MW-13D			MW-16			MW-18			MW-19		
		Field Sample ID	MW-11-1210			MW-13D-1210			MW-16-1210			MW-18-1210			MW-19-1210		
		Sample Date	10/24/12			10/25/12			10/22/12			10/25/12			10/22/12		
		Purpose	original data			original data			original data			original data			original data		
Parameter (Method 6010C)	Units	Filtered	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALUMINUM	ug/l	Total	8	J		5	J		33	J		7	J		71		
ALUMINUM	ug/l	Dissolved	2.4	J		50	U		14	J		2	J		6.5	J	
ANTIMONY	ug/l	Total	2.5	U		0.94	J		2.5	U		1.5	J		2.5	U	
ANTIMONY	ug/l	Dissolved	2.5	U		2.5	U		2.5	U		0.6	J		2.5	U	
ARSENIC	ug/l	Total	1.4	J		0.82	J		1.1	J		2.2			1.5	U	
ARSENIC	ug/l	Dissolved	1.4	J		0.83	J		0.67	J		1.7			1.5	U	
BARIUM	ug/l	Total	86			100			190			90			37		
BARIUM	ug/l	Dissolved	79			90			140			82			33		
BERYLLIUM	ug/l	Total	1	U		1	U		1	U		1	U		1	U	
BERYLLIUM	ug/l	Dissolved	1	U		1	U		1	U		1	U		1	U	
CADMIUM	ug/l	Total	1	U		1.8			2.1			1.3			0.89	J	
CADMIUM	ug/l	Dissolved	1	U		1.1			0.87	J		1			0.44	J	
CALCIUM	ug/l	Total	250000			78000			61000			120000			120000		
CALCIUM	ug/l	Dissolved	230000			78000			57000			120000			100000		
CHROMIUM, TOTAL	ug/l	Total	1.5	J		1.3	J		2.7	J		1.3	J		3.1	J	
CHROMIUM, TOTAL	ug/l	Dissolved	6.5	J		2.3	J		6	J		2.8	J		4.3	J	
COBALT	ug/l	Total	4.2	J		2.2	J		2.6	J		8.9			0.29	J	
COBALT	ug/l	Dissolved	3.7			2	J		2.2			8.3			0.34	J	
COPPER	ug/l	Total	1.2	J		3.6	J		5.2			1.3	J		6.8		
COPPER	ug/l	Dissolved	0.52	J		2.2	J		2.5	J		1.2	J		2.4	J	
IRON	ug/l	Total	4200			400			1200			340			190	J	
IRON	ug/l	Dissolved	4400			250			620			120	J		180	J	
LEAD	ug/l	Total	0.4	J		1.1			0.32	J		1	U		0.86	J	
LEAD	ug/l	Dissolved	1	U		1	U		1	U		1	U		0.34	J	
MAGNESIUM	ug/l	Total	59000			30000			76000			71000			44000		
MAGNESIUM	ug/l	Dissolved	62000			29000			71000			69000			36000		
MANGANESE	ug/l	Total	1400			310			1700			530			27		
MANGANESE	ug/l	Dissolved	1300			290			1100			490			11		
MERCURY	ug/l	Total	0.046	J		0.059	J		0.2	U		0.05	J		0.2	U	
MERCURY	ug/l	Dissolved	0.2	U		0.2	U		0.2	U		0.2	U		0.2	U	
NICKEL	ug/l	Total	64			23			29			210			8.2	J	
NICKEL	ug/l	Dissolved	53			21			26			220			8	J	
POTASSIUM	ug/l	Total	2300			8200			5000			5100			3500		
POTASSIUM	ug/l	Dissolved	2400			8800			5000			5000			3500		
SELENIUM	ug/l	Total	5	U		2.7	J		5	U		9.4			1.7	J	
SELENIUM	ug/l	Dissolved	5	U		2.9	J		5	U		9.7			5	U	
SILVER	ug/l	Total	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
SILVER	ug/l	Dissolved	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
SODIUM	ug/l	Total	23000			170000			150000			43000			160000		
SODIUM	ug/l	Dissolved	25000			180000			150000			45000			110000		
STRONTIUM	ug/l	Total															
STRONTIUM	ug/l	Dissolved															
THALLIUM	ug/l	Total	2	U		0.42	J		2	U		2	U		2	U	
THALLIUM	ug/l	Dissolved	5	U		0.17	J		5	U		5	U		5	U	
VANADIUM	ug/l	Total	4	U		4	U		3.6	J		0.73	J		0.54	J	
VANADIUM	ug/l	Dissolved	0.86	J		0.98	J		2.2	J		1.6	J		4	U	
ZINC	ug/l	Total	18	J		190			83			110			80		
ZINC	ug/l	Dissolved	9.2	J		160			52			110			51		

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
ug/L = micrograms per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6b

Groundwater, Seeps, and Surface Water Analytical Results - Metals (Unfiltered and Filtered), October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-20			MW-21			MW-22			MW-23			MW-24		
		Field Sample ID	MW-20-1210			MW-21-1210			MW-22-1210			MW-23-1210			MW-24-1210		
		Sample Date	10/23/12			10/25/12			10/23/12			10/24/12			10/24/12		
		Purpose	original data			original data			original data			original data			original data		
Parameter (Method 6010C)	Units	Filtered	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALUMINUM	ug/l	Total	26	J		7.4	J		9.5	J		7.5	J		4.9	J	
ALUMINUM	ug/l	Dissolved	3.6	J		2	J		4.9	J		50	U		50	U	
ANTIMONY	ug/l	Total	2.5	U		2.5	U		2.5	U		2.5	U		2.5	U	
ANTIMONY	ug/l	Dissolved	2.5	U		2.5	U		2.5	U		2.5	U		2.5	U	
ARSENIC	ug/l	Total	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
ARSENIC	ug/l	Dissolved	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
BARIUM	ug/l	Total	33			82			150			62			58		
BARIUM	ug/l	Dissolved	30			73			140			53			58		
BERYLLIUM	ug/l	Total	1	U		1	U		1	U		1	U		1	U	
BERYLLIUM	ug/l	Dissolved	1	U		1	U		1	U		1	U		1	U	
CADMIUM	ug/l	Total	0.55	J		0.38	J		0.43	J		0.41	J		1	U	
CADMIUM	ug/l	Dissolved	1	U		1	U		1	U		1	U		1	U	
CALCIUM	ug/l	Total	90000			83000			110000			110000			76000		
CALCIUM	ug/l	Dissolved	84000			82000			98000			110000			86000		
CHROMIUM, TOTAL	ug/l	Total	1.6	J		0.45	J		0.74	J		0.5	J		0.7	J	
CHROMIUM, TOTAL	ug/l	Dissolved	3.3	J		2.2	J		4.1	J		1.5	J		1.7	J	
COBALT	ug/l	Total	0.27	J		0.28	J		0.65	J		2	J		0.25	J	
COBALT	ug/l	Dissolved	0.43	J		0.38	J		0.8	J		1.7	J		0.4	J	
COPPER	ug/l	Total	1.8	J		4.5	J		17			0.71	J		1.7	J	
COPPER	ug/l	Dissolved	1.7	J		3.5	J		12			5	U		0.76	J	
IRON	ug/l	Total	200	U		200	U		16000			810			1300		
IRON	ug/l	Dissolved	200	J		200	U		15000			700			1200		
LEAD	ug/l	Total	0.28	J		3.2			1	U		0.3	J		1	U	
LEAD	ug/l	Dissolved	1	U		0.56	J		1	U		1	U		1	U	
MAGNESIUM	ug/l	Total	22000			25000			29000			24000			20000		
MAGNESIUM	ug/l	Dissolved	19000			25000			25000			24000			22000		
MANGANESE	ug/l	Total	5.1			15			340			790			140		
MANGANESE	ug/l	Dissolved	4	J		17			340			740			130		
MERCURY	ug/l	Total	0.2	U		0.031	J		0.2	U		0.053	J		0.035	J	
MERCURY	ug/l	Dissolved	0.2	U		0.2	U		0.2	U		0.2	U		0.2	U	
NICKEL	ug/l	Total	7.1	J		2.1	J		21			22			2.8	J	
NICKEL	ug/l	Dissolved	7.8	J		2.9	J		21			24			3.6	J	
POTASSIUM	ug/l	Total	2500			3100			3300			2200			2700		
POTASSIUM	ug/l	Dissolved	2400			3000			3300			2100			2800		
SELENIUM	ug/l	Total	5	U		5	U		5	U		5	U		5	U	
SELENIUM	ug/l	Dissolved	5	U		5	U		5	U		5	U		5	U	
SILVER	ug/l	Total	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
SILVER	ug/l	Dissolved	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
SODIUM	ug/l	Total	15000			260000			13000			28000			110000		
SODIUM	ug/l	Dissolved	14000			250000			8900			27000			91000		
STRONTIUM	ug/l	Total															
STRONTIUM	ug/l	Dissolved															
THALLIUM	ug/l	Total	2	U		2	U		2	U		2	U		2	U	
THALLIUM	ug/l	Dissolved	5	U		5	U		5	U		5	U		5	U	
VANADIUM	ug/l	Total	4	U		4	U		4	U		4	U		4	U	
VANADIUM	ug/l	Dissolved	4	U		4	U		0.56	J		4	U		0.53	J	
ZINC	ug/l	Total	64			88			21	J		120			22	J	
ZINC	ug/l	Dissolved	53			65			15	J		100			16	J	

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
ug/L = micrograms per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6b

Groundwater, Seeps, and Surface Water Analytical Results - Metals (Unfiltered and Filtered), October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-25			MW-600D			MW-601D			MW-602D			MW-603D		
		Field Sample ID	MW-25-1210			MW-600D-1210			601D-1210			602D-1210			MW-603D-1210		
		Sample Date	10/24/12			10/22/12			10/23/12			10/23/12			10/23/12		
		Purpose	original data			original data			original data			original data			original data		
Parameter (Method 6010C)	Units	Filtered	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALUMINUM	ug/l	Total	13	J		3.7	J		6.5	J		60			4.1	J	
ALUMINUM	ug/l	Dissolved	50	U		1.7	J		50	U		2	J		50	U	
ANTIMONY	ug/l	Total	2.5	U		2.5	U		2.5	U		2.5	U		2.5	U	
ANTIMONY	ug/l	Dissolved	2.5	U		2.5	U		0.64	J		2.5	U		2.5	U	
ARSENIC	ug/l	Total	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
ARSENIC	ug/l	Dissolved	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
BARIUM	ug/l	Total	99			160			13	J		26			26		
BARIUM	ug/l	Dissolved	87			140			12	J		23	J		27		
BERYLLIUM	ug/l	Total	1	U		1	U		1	U		1	U		1	U	
BERYLLIUM	ug/l	Dissolved	1	U		1	U		1	U		1	U		1	U	
CADMIUM	ug/l	Total	1.6			2			1	U		0.66	J		1		
CADMIUM	ug/l	Dissolved	1			1.1			1	U		1	U		1	U	
CALCIUM	ug/l	Total	120000			350000			100000			110000			130000		
CALCIUM	ug/l	Dissolved	130000			310000			97000			100000			120000		
CHROMIUM, TOTAL	ug/l	Total	1.1	J		1.2	J		1.5	J		1.1	J		0.76	J	
CHROMIUM, TOTAL	ug/l	Dissolved	3.1	J		5.6	J		3.9	J		3.6	J		3.9	J	
COBALT	ug/l	Total	1.1	J		0.96	J		0.62	J		0.28	J		1.8	J	
COBALT	ug/l	Dissolved	1.1	J		1.1	J		1.5	J		0.38	J		2.2		
COPPER	ug/l	Total	10			19			1.8	J		2.3	J		0.73	J	
COPPER	ug/l	Dissolved	8.3			14			1.3	J		1	J		0.47	J	
IRON	ug/l	Total	91	J		420			360			1100			1000		
IRON	ug/l	Dissolved	200	U		480			460			920			940		
LEAD	ug/l	Total	0.66	J		2.8			1	U		0.7	J		1	U	
LEAD	ug/l	Dissolved	0.3	J		2			1	U		1	U		1	U	
MAGNESIUM	ug/l	Total	37000			130000			41000			45000			50000		
MAGNESIUM	ug/l	Dissolved	38000			99000			36000			38000			42000		
MANGANESE	ug/l	Total	800			260			100			62			110		
MANGANESE	ug/l	Dissolved	760			250			95			32			120		
MERCURY	ug/l	Total	0.031	J		0.2	U		0.2	U		0.2	U		0.2	U	
MERCURY	ug/l	Dissolved	0.2	U		0.2	U		0.2	U		0.2	U		0.2	U	
NICKEL	ug/l	Total	95			9.2	J		6.4	J		7	J		97		
NICKEL	ug/l	Dissolved	91			9.6	J		5.8	J		4	J		100		
POTASSIUM	ug/l	Total	3400			4000			5100			3700			3900		
POTASSIUM	ug/l	Dissolved	3400			3700			5100			3700			3700		
SELENIUM	ug/l	Total	5	U		5	U		5	U		5	U		5	U	
SELENIUM	ug/l	Dissolved	1.8	J		2	J		5	U		5	U		5	U	
SILVER	ug/l	Total	1.5	U		1.5	U		1.5	U		1.5	U		1.5	U	
SILVER	ug/l	Dissolved	0.2	J		0.26	J		1.5	U		1.5	U		1.5	U	
SODIUM	ug/l	Total	680000			2E+06			120000			50000			39000		
SODIUM	ug/l	Dissolved	760000			1E+06			120000			48000			35000		
STRONTIUM	ug/l	Total															
STRONTIUM	ug/l	Dissolved															
THALLIUM	ug/l	Total	2	U		0.43	J		2	U		2	U		2	U	
THALLIUM	ug/l	Dissolved	5	U		0.19	J		0.62	J		5	U		5	U	
VANADIUM	ug/l	Total	4	U		4	U		4	U		4	U		4	U	
VANADIUM	ug/l	Dissolved	4	U		4	U		4	U		4	U		0.62	J	
ZINC	ug/l	Total	140			460			13	J		49	J		96		
ZINC	ug/l	Dissolved	120			400			14	J		39	J		82		

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
ug/L = micrograms per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6b

Groundwater, Seeps, and Surface Water Analytical Results - Metals (Unfiltered and Filtered), October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	MW-607D			MW-711D			MW-711DD			MW-712DD			Seep-1205-01		
		Field Sample ID	MW-607D-1210			711D-1210			711DD-1210			MW-712DD-1210			Seep-1205-01		
		Sample Date	10/22/12			10/23/12			10/23/12			10/22/12			5/7/12		
		Purpose	original data			original data			original data			original data			original data		
Parameter (Method 6010C)	Units	Filtered	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALUMINUM	ug/l	Total	120			34	J		18	J		12	J		200		
ALUMINUM	ug/l	Dissolved	21	J		2.3	J		14	J		2.3	J		200		
ANTIMONY	ug/l	Total	2.5	U		0.94	J		0.53	J		2.5	U		10		
ANTIMONY	ug/l	Dissolved	2.5	U		2.5	U		2.5	U		2.5	U		10		
ARSENIC	ug/l	Total	1.5	U		0.96	J		10			1.5	U		10		
ARSENIC	ug/l	Dissolved	0.8	J		1.5	U		10			1.5	U		10		
BARIUM	ug/l	Total	67			44			31			58			53.7		
BARIUM	ug/l	Dissolved	61			39			27			51			54.3		
BERYLLIUM	ug/l	Total	1	U		1	U		1	U		1	U		5		
BERYLLIUM	ug/l	Dissolved	1	U		1	U		1	U		1	U		1.2		
CADMIUM	ug/l	Total	1.3			1.5			0.74	J		0.77	J		1.3		
CADMIUM	ug/l	Dissolved	1.2			0.34	J		1	U		0.48	J		1.1		
CALCIUM	ug/l	Total	130000			120000			450000			170000			121000		
CALCIUM	ug/l	Dissolved	110000			100000			410000			170000			116000		
CHROMIUM, TOTAL	ug/l	Total	1.3	J		1.3	J		1.3	J		1.8	J		10		
CHROMIUM, TOTAL	ug/l	Dissolved	5.3	J		3.5	J		1.8	J		4.3	J		10		
COBALT	ug/l	Total	2.2	J		0.66	J		0.86	J		0.29	J		50		
COBALT	ug/l	Dissolved	3.1			0.94	J		1.2	J		0.85	J		50		
COPPER	ug/l	Total	4.8	J		360			11			6.8			232		
COPPER	ug/l	Dissolved	2	J		320			7.2			3.5	J		195		
IRON	ug/l	Total	480			860			150	J		240			51.9		
IRON	ug/l	Dissolved	350			340			240			340			28.5		
LEAD	ug/l	Total	0.84	J		0.45	J		1	U		1	U		1.9		
LEAD	ug/l	Dissolved	0.34	J		1	U		0.39	J		0.28	J		1.8		
MAGNESIUM	ug/l	Total	99000			35000			170000			49000			32000		
MAGNESIUM	ug/l	Dissolved	85000			27000			150000			43000			31600		
MANGANESE	ug/l	Total	510			100			94			7.1			19.2		
MANGANESE	ug/l	Dissolved	430			94			64			6			13.2		
MERCURY	ug/l	Total	0.2	U		0.2	U		0.2	U		0.2	U		0.2		
MERCURY	ug/l	Dissolved	0.2	U		0.2	U		0.2	U		0.2	U		0.2		
NICKEL	ug/l	Total	8.7	J		12			13			10	J		40		
NICKEL	ug/l	Dissolved	8.9	J		13			13			10			40		
POTASSIUM	ug/l	Total	7400			4400			25000			4400					
POTASSIUM	ug/l	Dissolved	7200			3900			25000			4400					
SELENIUM	ug/l	Total	5	U		5	U		22			5	U		15		
SELENIUM	ug/l	Dissolved	5	U		1.6	J		22			5	U		15		
SILVER	ug/l	Total	1.5	U		1.5	U		1.5	U		1.5	U		10		
SILVER	ug/l	Dissolved	1.5	U		1.5	U		1.5	U		1.5	U		10		
SODIUM	ug/l	Total	100000			110000			650000			250000			268000		
SODIUM	ug/l	Dissolved	97000			89000			560000			300000			265000		
STRONTIUM	ug/l	Total													504		
STRONTIUM	ug/l	Dissolved													497		
THALLIUM	ug/l	Total	2	U		2	U		2	U		2	U		20		
THALLIUM	ug/l	Dissolved	5	U		5	U		5	U		5	U		20		
VANADIUM	ug/l	Total	0.56	J		4	U		4	U		4	U		50		
VANADIUM	ug/l	Dissolved	1	J		0.55	J		4	U		1.1	J		50		
ZINC	ug/l	Total	77			90			22	J		120			85.8		
ZINC	ug/l	Dissolved	23	J		75			17	J		100			74.4		

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
ug/L = micrograms per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-6b

Groundwater, Seeps, and Surface Water Analytical Results - Metals (Unfiltered and Filtered), October 2012

Supplemental Sampling Tech Memo
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

		Station Name	Seep-1205-02			Seep-1205-03			SEEP-1210-1			SEEP-1210-2			SEEP-1210-3		
		Field Sample ID	Seep-1205-02			Seep-1205-03			Seep-1210-1			Seep-1210-2			Seep-1210-3		
		Sample Date	5/7/12			5/7/12			10/25/12			10/25/12			10/25/12		
		Purpose	original data			original data			original data			original data			original data		
Parameter (Method 6010C)	Units	Filtered	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALUMINUM	ug/l	Total	200			200			22	J		44	J		3.8	J	
ALUMINUM	ug/l	Dissolved	200			200			50	U		3.5	J		1.5	J	
ANTIMONY	ug/l	Total	10			10			2.5	U		2.5	U		2.5	U	
ANTIMONY	ug/l	Dissolved	10			10			2.5	U		2.5	U		2.5	U	
ARSENIC	ug/l	Total	10			10			1.5	U		1.5	U		1.5	U	
ARSENIC	ug/l	Dissolved	10			10			1.5	U		0.8	J		1.5	U	
BARIUM	ug/l	Total	38.3			31.7			45			29			52		
BARIUM	ug/l	Dissolved	38.1			31.8			43			25	J		45		
BERYLLIUM	ug/l	Total	5			5			1	U		1	U		1	U	
BERYLLIUM	ug/l	Dissolved	5			5			1	U		1	U		1	U	
CADMIUM	ug/l	Total	5			5			0.38	J		1	U		0.28	J	
CADMIUM	ug/l	Dissolved	5			5			1	U		1	U		1	U	
CALCIUM	ug/l	Total	86600			103000			120000			80000			120000		
CALCIUM	ug/l	Dissolved	87300			102000			120000			78000			120000		
CHROMIUM, TOTAL	ug/l	Total	10			10			0.55	J		0.42	J		0.45	J	
CHROMIUM, TOTAL	ug/l	Dissolved	10			10			2.3	J		1.9	J		1.8	J	
COBALT	ug/l	Total	50			50			0.29	J		0.26	J		0.36	J	
COBALT	ug/l	Dissolved	50			50			0.28	J		0.43	J		0.45	J	
COPPER	ug/l	Total	239			25			3.1	J		3.3	J		3.2	J	
COPPER	ug/l	Dissolved	206			25			2.8	J		5.3			3.2	J	
IRON	ug/l	Total	100			100			200	U		72	J		200	U	
IRON	ug/l	Dissolved	100			100			200	U		200	U		200	U	
LEAD	ug/l	Total	10			1.7			0.34	J		0.58	J		1	U	
LEAD	ug/l	Dissolved	10			1.6			1	U		1	U		1	U	
MAGNESIUM	ug/l	Total	23000			27700			32000			25000			33000		
MAGNESIUM	ug/l	Dissolved	22700			27700			33000			26000			31000		
MANGANESE	ug/l	Total	18			15			4.6	J		3.5	J		6.6		
MANGANESE	ug/l	Dissolved	18.4			15			3.8	J		1.1	J		6		
MERCURY	ug/l	Total	0.2			0.2			0.035	J		0.05	J		0.029	J	
MERCURY	ug/l	Dissolved	0.2			0.2			0.2	U		0.2	U		0.2	U	
NICKEL	ug/l	Total	40			40			16			3.6	J		19		
NICKEL	ug/l	Dissolved	40			40			15			3.6	J		19		
POTASSIUM	ug/l	Total							2100			2300			2100		
POTASSIUM	ug/l	Dissolved							2200			2300			2000	J	
SELENIUM	ug/l	Total	15			15			1.8	J		5	U		5	U	
SELENIUM	ug/l	Dissolved	15			15			5	U		1.9	J		5	U	
SILVER	ug/l	Total	10			10			1.5	U		1.5	U		1.5	U	
SILVER	ug/l	Dissolved	10			10			1.5	U		1.5	U		1.5	U	
SODIUM	ug/l	Total	154000			95400			110000			30000			130000		
SODIUM	ug/l	Dissolved	156000			95100			110000			16000			130000		
STRONTIUM	ug/l	Total	296			300											
STRONTIUM	ug/l	Dissolved	303			299											
THALLIUM	ug/l	Total	20			20			2	U		2	U		2	U	
THALLIUM	ug/l	Dissolved	20			20			5	U		5	U		5	U	
VANADIUM	ug/l	Total	50			50			4	U		4	U		4	U	
VANADIUM	ug/l	Dissolved	50			50			0.56	J		0.78	J		4	U	
ZINC	ug/l	Total	81.1			54.8			77			25	J		86		
ZINC	ug/l	Dissolved	78.4			56.7			70			15	J		71		

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
ug/L = micrograms per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-1		MW-2		MW-2		MW-3		MW-4		MW-5		MW-6	
			Field Sample ID	A02MW010001		A02MW020001		A02MW9005		A02MW30001		A02MW40001		A02MW50001		A02MW060001	
			Sample Date	8/23/2011		8/23/2011		8/23/2011		8/22/2011		8/19/2011		8/22/2011		8/12/2011	
			Purpose	Original Data		Original Data		Field Duplicate		Original Data		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units		Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L		1540		342		344		410		352		400		641	
E300	CHLORIDE (AS CL)	mg/L		495		24.4		24.8		11.1		43.3		16.6		31.2	
E300	FLUORIDE	mg/L		0.77		1.2		1.2		4.4		1.2		2.9		2.9	
E300	NITRATE AS NITROUS OXIDE	mg/L		0.03		0.01	B	0.19		0.02	U	0.14		0.02	U	0.05	
E300	NITROGEN, NITRITE	mg/L		4	U	0.2	U	0.2	U	0.1	U	0.1	U	0.1	U	0.04	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L		192		36.6		35.6		41.6		44.4	J	73.2		115	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L		346		229		229		325		202		254		358	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-7		MW-8		MW-9		MW-10		MW-11		MW-12		MW-13D	
	Field Sample ID	A02MW070001		A02MW080001		A02MW090001		A02MW100001		A02MW110001		A02MW120001		A03AMW13D0001	
	Sample Date	8/12/2011		8/8/2011		8/8/2011		8/12/2011		8/8/2011		8/22/2011		8/11/2011	
	Purpose	Original Data		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	495		1260		398		529		626		233		719	
E300	CHLORIDE (AS CL)	mg/L	45.8		296		22.9		25.6		101		1.8		135	
E300	FLUORIDE	mg/L	2.3		0.75		1.9		1.4		0.69		1.5		3.6	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.01	B	0.02	U	0.02	U	0.03		0.02	U	0.01	B	8.40E-03	B
E300	NITROGEN, NITRITE	mg/L	0.04	U	0.2	U	0.02	U	0.04	U	0.2	U	0.02	U	0.1	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L	82.2		197		54.7		90.2		61.4		21.1		41.3	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	301		328		247		316		332		196		396	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-14		MW-15		MW-16		MW-16		MW-17		MW-18		MW-19	
			Field Sample ID	A03MW14D0001		A03MW15D0001		A03MW16D0001		A03MW9004		A03MW17D0001		A04BMW180001		A04BMW190001	
			Sample Date	8/16/2011		8/16/2011		8/19/2011		8/19/2011		8/16/2011		8/5/2011		8/4/2011	
			Purpose	Original Data		Original Data		Original Data		Field Duplicate		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units		Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L		833		405		744		747		975		619		500	
E300	CHLORIDE (AS CL)	mg/L		60.1		79.9		96		95.4		251		89.9		72.5	
E300	FLUORIDE	mg/L		15.6		13.6		7.1		7.1		0.19		2.6		1.4	
E300	NITRATE AS NITROUS OXIDE	mg/L		0.04		0.02	U	6.40E-03	B	0.1		0.1		7.60E-03	B	0.89	
E300	NITROGEN, NITRITE	mg/L		0.2	U	0.2	U	0.1	U	0.1	U	0.2	U	0.1	U	0.03	B
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L		33.1		39.6		53.5	J	53.5	J	69.1		47.8		95	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L		698		129		512		503		410		381		400	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	MW-20		MW-21		MW-22		MW-23		MW-24		MW-25		MW-25	
			Field Sample ID	A04AMW200001		A04AMW210001		A04AMW220001		A04DMW230001		A04DMW240001		A04BMW250001		A04BMW9003	
			Sample Date	8/18/2011		8/18/2011		8/5/2011		8/4/2011		8/4/2011		8/12/2011		8/12/2011	
			Purpose	Original Data		Original Data		Original Data		Original Data		Original Data		Original Data		Field Duplicate	
Analytic Method	Parameter	Units		Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L		461		913		387		411		633		3170		3020	
E300	CHLORIDE (AS CL)	mg/L		66.1		231		34.4		23.1		116		1490		1490	
E300	FLUORIDE	mg/L		0.58		0.24		1.5		0.92		0.89		2.1		2	
E300	NITRATE AS NITROUS OXIDE	mg/L		4.1		0.09		0.09		0.08		0.02	U	0.09		0.08	
E300	NITROGEN, NITRITE	mg/L		0.1	U	0.2	U	0.02	U	0.02	U	0.04	U	1	U	1	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L		0.5	U	0.06	BJ	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L		25.7		88.1		40.7		52.4		99.1		82.9		83.6	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L		270		377		252		252		248		255		254	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-26		MW-600D		MW-601D		MW-602D		MW-603D		MW-604D		MW-605D	
	Field Sample ID	A04BMW260001		A02MW600D0001		A04AMW610D0001		A04MW602D0001		A04AMW603D0001		A04MW604D0001		A04BMW605D0001	
	Sample Date	8/10/2011		8/22/2011		8/18/2011		8/11/2011		8/5/2011		8/10/2011		8/10/2011	
	Purpose	Original Data		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	1230		5400		678		645		692		1240		502	
E300	CHLORIDE (AS CL)	mg/L	530		2660		99.2		87.7		53.8		471		38.8	
E300	FLUORIDE	mg/L	1.7		0.13	B	0.66		2.1		1.9		1.2		3.3	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.06		0.2	U	0.64		0.01	B	0.09		0.04		0.57	
E300	NITROGEN, NITRITE	mg/L	0.2	U	40	U	0.1	U	0.1	U	0.1	U	0.2	U	0.1	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U	0.5	U	0.16	BJ	0.5	U	0.5	U	0.5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L	63.2		209		90.3		122		125		50.2		89.6	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	159		524		383		320		350		323		354	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-605D		MW-606D		MW-606DR		MW-607D		MW-701DD		MW-702DD		MW-703DD	
	Field Sample ID	A04BMW9000		A03MW606D0001		A03MW606DR0001		A03MW607D0001		04AMW701DD000		04MW702DD000		A03MW703DD000	
	Sample Date	8/10/2011		8/16/2011		8/15/2011		8/19/2011		8/19/2011		8/11/2011		8/19/2011	
	Purpose	Field Duplicate		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	496		848		1200		754		1430		3720		1940	
E300	CHLORIDE (AS CL)	mg/L	38.4		69.3		326		101		488		179		455	
E300	FLUORIDE	mg/L	3.4		14.6		6.6		4.9		0.56		1.2		0.64	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.3		0.01	B	0.02	U	0.04		0.01	B	31.8		0.01	B
E300	NITROGEN, NITRITE	mg/L	0.1	U	0.2	U	0.2	U	0.1	U	0.2	U	0.2	U	0.2	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.12	BJ	0.5	U	0.5	U	0.07	BJ	0.5	U	0.5	U	0.08	BJ
E300	SULFATE (AS SO4)	mg/L	87.2		35.2		96.1		63.8	J	185	J	1960		413	J
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	354		688		405		1490		257		210		382	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-704DD	MW-704DD	MW-705D	MW-705DD	MW-706DD	MW-707DD	MW-708DD
	Field Sample ID	A04BMW9001	04DMW704DD000	MW705D0001	MW705DD0001	A04BMW706D0001	A04BMW707DD000	04DMW708DD000
	Sample Date	8/10/2011	8/10/2011	8/9/2011	8/9/2011	8/15/2011	8/18/2011	8/11/2011
	Purpose	Field Duplicate	Original Data	Original Data	Original Data	Original Data	Original Data	Original Data

Analytic Method	Parameter	Units	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	2170		2130		1550		6720		2660		13500		1240	
E300	CHLORIDE (AS CL)	mg/L	206		206		108		2180		247		5750		211	
E300	FLUORIDE	mg/L	0.34		0.34		0.44		0.1	U	0.72		0.4	B	0.56	
E300	NITRATE AS NITROUS OXIDE	mg/L	43.8		44.8		0.01	B	0.02	U	0.02	U	0.44		0.02	U
E300	NITROGEN, NITRITE	mg/L	0.15	B	0.1	B	0.2	U	0.2	U	0.2	U	4	U	0.2	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U	0.5	U	0.5	U	0.13	B	5	U	0.63	BJ	0.5	U
E300	SULFATE (AS SO4)	mg/L	787		782		748		1850		1200		1860	J	357	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	85.6		88.4		184		159		234		1750		231	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

	Station Name	MW-708DD		MW-709DD		MW-710D		MW-710DD		MW-711D		MW-711DD		MW-712DD	
	Field Sample ID	A04DMW9002		04DMW709DD00		04DMW710D000		04DMW710DD00		A04DMW711D000		04DMW711DD00		04DMW712DD00	
	Sample Date	8/11/2011		8/10/2011		8/15/2011		8/18/2011		8/9/2011		8/15/2011		8/18/2011	
	Purpose	Field Duplicate		Original Data		Original Data		Original Data		Original Data		Original Data		Original Data	
Analytic Method	Parameter	Units	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual	Value	Lab Qual
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	1220		1100		960		1340		936		5030		1490	
E300	CHLORIDE (AS CL)	mg/L	207		346		314		352		199		806		463	
E300	FLUORIDE	mg/L	0.6		0.98		1		0.97		0.62		0.64	B	1.2	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.02	U	0.01	B	0.02	U	0.02		8.60E-03	B	0.02	U	0.15	
E300	NITROGEN, NITRITE	mg/L	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U	0.5	U	0.5	U	0.28	BJ	0.5	U	5	U	0.5	U
E300	SULFATE (AS SO4)	mg/L	346		153		73.4		263		150		2170		220	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	232		256		272		270		302		34.4		321	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7a

Groundwater Analytical Results - Anions, August 2011

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

			Station Name	**MW-713D**
			Field Sample ID	04DMW713D000
			Sample Date	**8/4/2011**
			Purpose	**Original Data**
Analytic Method	**Parameter**	**Units**	**Value**	**Lab Qual**
E160.1	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/L	904	
E300	CHLORIDE (AS CL)	mg/L	173	
E300	FLUORIDE	mg/L	0.23	
E300	NITRATE AS NITROUS OXIDE	mg/L	0.07	
E300	NITROGEN, NITRITE	mg/L	0.2	U
E300	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/L	0.5	U
E300	SULFATE (AS SO4)	mg/L	76.2	
E310.1	ALKALINITY, TOTAL (AS CACO3)	mg/L	419	

Lab Qual = Laboratory Qualifier

mg/L = milligrams per Liter

B = Estimated result. Result is less than RL.

J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

U = Analyte analyzed for, but was not detected.

Table 3-7b

Groundwater and Seeps Analytical Results - Anions, October 2012

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-1			MW-2			MW-4			MW-4			MW-7		
Field Sample ID		MW-1F-1210			MW-2-1210			MW-04-1210			MW-04-DUP-1210			MW-7-1210		
Sample Date		10/24/12			10/24/12			10/24/12			10/24/12			10/23/12		
Purpose		original data			original data			original data			duplicate			original data		
Parameter	**Units**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/l	970			320			370			370			570		
CHLORIDE (AS CL)	mg/l	240			18			58			43			66		
FLUORIDE	mg/l	0.84	J		1.1	J		1.5	J		1.8	J		5		
NITRATE AS NITROUS OXIDE	mg/l	1.2	U		1.2	U		1.2	UH	U	1.2	UH	UJ	0.25	UH	UJ
NITROGEN, NITRITE	mg/l	1.2	U		1.2	U		1.2	UH	U	1.2	UH	UJ	0.25	UH	UJ
PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/l	2.4	U		2.4	U		2.4	UH	U	2.4	UH	UJ	0.5	UH	UJ
SULFATE (AS SO4)	mg/l	2.4	U		2.4	U		2.4	U		42			110		
ALKALINITY, BICARBONATE (AS CACO3)	mg/l	360			230			190			190			300		
ALKALINITY, CARBONATE (AS CACO3)	mg/l	20	U		20	U		20	U		20	U		20	U	
ALKALINITY, TOTAL (AS CACO3)	mg/l	360			230			190			190			300		
BROMIDE	mg/l	0.7	U		0.7	U		0.7	U		0.7	U		0.7	U	

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
mg/L = milligrams per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.
H = Holding time exceeded

Table 3-7b

Groundwater and Seeps Analytical Results - Anions, October 2012

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-9			MW-11			MW-13D			MW-16			MW-18		
Field Sample ID		MW-9-1210			MW-11-1210			MW-13D-1210			MW-16-1210			MW-18-1210		
Sample Date		10/24/12			10/24/12			10/25/12			10/22/12			10/25/12		
Purpose		original data			original data			original data			original data			original data		
Parameter	**Units**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/l	520			1100			760			800			720		
CHLORIDE (AS CL)	mg/l	16			32			72			130			40		
FLUORIDE	mg/l	1.5	J		0.53	J		4.9			5.2			2.6		
NITRATE AS NITROUS OXIDE	mg/l	1.2	U		1.2	U		1.2	U		0.3	U		3.6		
NITROGEN, NITRITE	mg/l	1.2	U		1.2	U		1.2	U		0.3	U		1.2	U	
PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/l	2.4	U		2.4	U		2.4	U		0.6	U		2.4	U	
SULFATE (AS SO4)	mg/l	2.4	U		2.4	U		35			92			120		
ALKALINITY, BICARBONATE (AS CACO3)	mg/l	310			410			500			480			450		
ALKALINITY, CARBONATE (AS CACO3)	mg/l	20	U		20	U		20	U		20	U		20	U	
ALKALINITY, TOTAL (AS CACO3)	mg/l	310			410			500			480			450		
BROMIDE	mg/l	0.7	U		0.7	U		1.7	U		0.42	U		1.7	U	

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
mg/L = milligrams per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.
H = Holding time exceeded

Table 3-7b

Groundwater and Seeps Analytical Results - Anions, October 2012

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-19			MW-20			MW-21			MW-22			MW-23		
Field Sample ID		MW-19-1210			MW-20-1210			MW-21-1210			MW-22-1210			MW-23-1210		
Sample Date		10/22/12			10/23/12			10/25/12			10/23/12			10/24/12		
Purpose		original data			original data			original data			original data			original data		
Parameter	**Units**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/l	610			340			960			410			520		
CHLORIDE (AS CL)	mg/l	100			9.2			240			8.6			54		
FLUORIDE	mg/l	1.6	J		4.8			2.4	U		3.9	H	J	1.5	J	
NITRATE AS NITROUS OXIDE	mg/l	3.7			4.8	H	J	1.2	U		0.22	JH	J	1.2	UH	UJ
NITROGEN, NITRITE	mg/l	0.3	U		0.25	UH	UJ	1.2	U		0.5	UH	UJ	1.2	UH	UJ
PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/l	0.6	U		0.5	UH	UJ	2.4	U		1	UH	UJ	2.4	UH	UJ
SULFATE (AS SO4)	mg/l	110			33			77			18			75	H	J
ALKALINITY, BICARBONATE (AS CACO3)	mg/l	250			240			420			320			250		
ALKALINITY, CARBONATE (AS CACO3)	mg/l	20	U		20	U		20	U		20	U		20	U	
ALKALINITY, TOTAL (AS CACO3)	mg/l	250			240			420			320			250		
BROMIDE	mg/l	0.42	U		0.7	U		1.7	U		0.7	U		1.7	U	

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
mg/L = milligrams per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.
H = Holding time exceeded

Table 3-7b

Groundwater and Seeps Analytical Results - Anions, October 2012

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-24			MW-24			MW-25			MW-600D			MW-601D		
Field Sample ID		MW-24-1210			MW-24-DUP-1210			MW-25-1210			MW-600D-1210			601D-1210		
Sample Date		10/24/12			10/24/12			10/24/12			10/22/12			10/23/12		
Purpose		original data			duplicate			original data			original data			original data		
Parameter	**Units**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/l	560			550			2600			5400			750		
CHLORIDE (AS CL)	mg/l	120			110			43			5100			120		
FLUORIDE	mg/l	2.1	J		1.5	J		2	J		10	U		0.8	JH	J
NITRATE AS NITROUS OXIDE	mg/l	1.2	UH	UJ	1.2	UH	UJ	0.62	JH	J	0.3	U		0.5	UH	UJ
NITROGEN, NITRITE	mg/l	1.2	UH	UJ	1.2	UH	UJ	1.2	UH	UJ	0.3	U	UJ	0.5	UH	UJ
PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/l	2.4	UH	UJ	2.4	UH	UJ	2.4	UH	UJ	0.6	U	UJ	1	UH	UJ
SULFATE (AS SO4)	mg/l	38			34			150			210			120		
ALKALINITY, BICARBONATE (AS CACO3)	mg/l	270			260			260			510			380		
ALKALINITY, CARBONATE (AS CACO3)	mg/l	20	U		20			20	U		20	U		20	U	
ALKALINITY, TOTAL (AS CACO3)	mg/l	270			260			260			510			380		
BROMIDE	mg/l	1.7	U		1.7	U		1.7	U		0.42	U		1.9		

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
mg/L = milligrams per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.
H = Holding time exceeded

Table 3-7b

Groundwater and Seeps Analytical Results - Anions, October 2012

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-602D			MW-603D			MW-607D			MW-711D			MW-711DD		
Field Sample ID		602D-1210			MW-603D-1210			MW-607D-1210			711D-1210			711DD-1210		
Sample Date		10/23/12			10/23/12			10/22/12			10/23/12			10/23/12		
Purpose		original data			original data			original data			original data			original data		
Parameter	**Units**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/l	600			650			890			560			4500		
CHLORIDE (AS CL)	mg/l	38			76			160			110			910	H	J
FLUORIDE	mg/l	1.8	H	J	4.9			3.3			0.56	JH	J	1.2	JH	J
NITRATE AS NITROUS OXIDE	mg/l	0.5	UH	UJ	0.25	UH	UJ	1.3			0.42	JH	J	1.2	UH	UJ
NITROGEN, NITRITE	mg/l	0.5	UH	UJ	0.25	UH	UJ	0.3	U		1.2	UH	UJ	1.2	UH	UJ
PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/l	1	UH	UJ	0.5	UH	UJ	0.6	U		2.4	UH	UJ	2.1	JH	J
SULFATE (AS SO4)	mg/l	130			92			120			94			2900	H	J
ALKALINITY, BICARBONATE (AS CACO3)	mg/l	340			350			440			250			76		
ALKALINITY, CARBONATE (AS CACO3)	mg/l	20	U		20	U		20	U		20	U		20	U	
ALKALINITY, TOTAL (AS CACO3)	mg/l	340			350			440			250			76		
BROMIDE	mg/l	0.76			11			0.42	U		0.7	U		6.9		

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
mg/L = milligrams per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.
H = Holding time exceeded

Table 3-7b

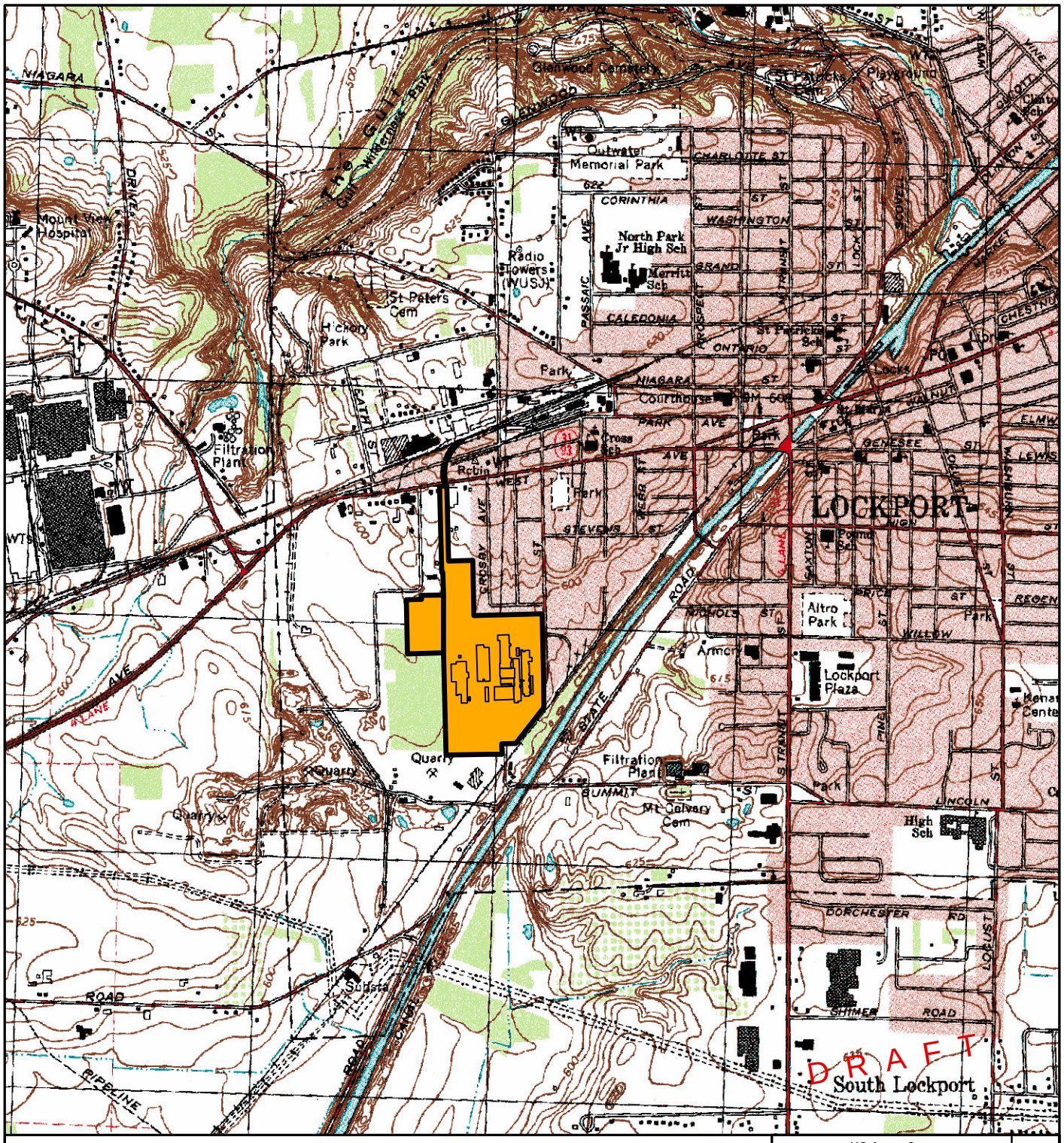
Groundwater and Seeps Analytical Results - Anions, October 2012

Data Gap Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Station Name		MW-712DD			SEEP-1210-1			SEEP-1210-2			SEEP-1210-3			SURFACE-1210-1		
Field Sample ID		MW-712DD-1210			Seep-1210-1			Seep-1210-2			Seep-1210-3			Surface-1210-1		
Sample Date		10/22/12			10/25/12			10/25/12			10/25/12			10/25/12		
Purpose		original data			original data			original data			original data			original data		
Parameter	**Units**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**	**Result**	**Lab Qual**	**Val Qual**
TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)	mg/l	1400			760			310			810			360		
CHLORIDE (AS CL)	mg/l	440			170			1.4	J		180			34		
FLUORIDE	mg/l	1.9	J		1.9	J		2.4	U		1.9	J		2.4	U	
NITRATE AS NITROUS OXIDE	mg/l	0.87			0.64	J		1.2	U		0.71	J		1.2	U	
NITROGEN, NITRITE	mg/l	0.3	U		1.2	U		1.2	U		1.2	U		1.2	U	
PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)	mg/l	0.6	U		2.4	U		2.4	U		2.4	U		2.4	U	
SULFATE (AS SO4)	mg/l	240			74			49			70			100		
ALKALINITY, BICARBONATE (AS CACO3)	mg/l	330			330			220			340			120		
ALKALINITY, CARBONATE (AS CACO3)	mg/l	20	U		20	U		20	U		20	U		20	U	
ALKALINITY, TOTAL (AS CACO3)	mg/l	330			330			240			340			120		
BROMIDE	mg/l	0.42	U		1.7	U		1.7	U		1.7	U		1.7	U	

Lab Qual = Laboratory Qualifier
Val Qual = Validation Qualifier
mg/L = milligrams per Liter
J = Method blank contamination. The associated method blank contains the target analyte at a reportable level.
U = Analyte analyzed for, but was not detected.
H = Holding time exceeded

FIGURES



LEGEND

GUTERL SITE BOUNDARY

0 500 1,000 2,000 Feet

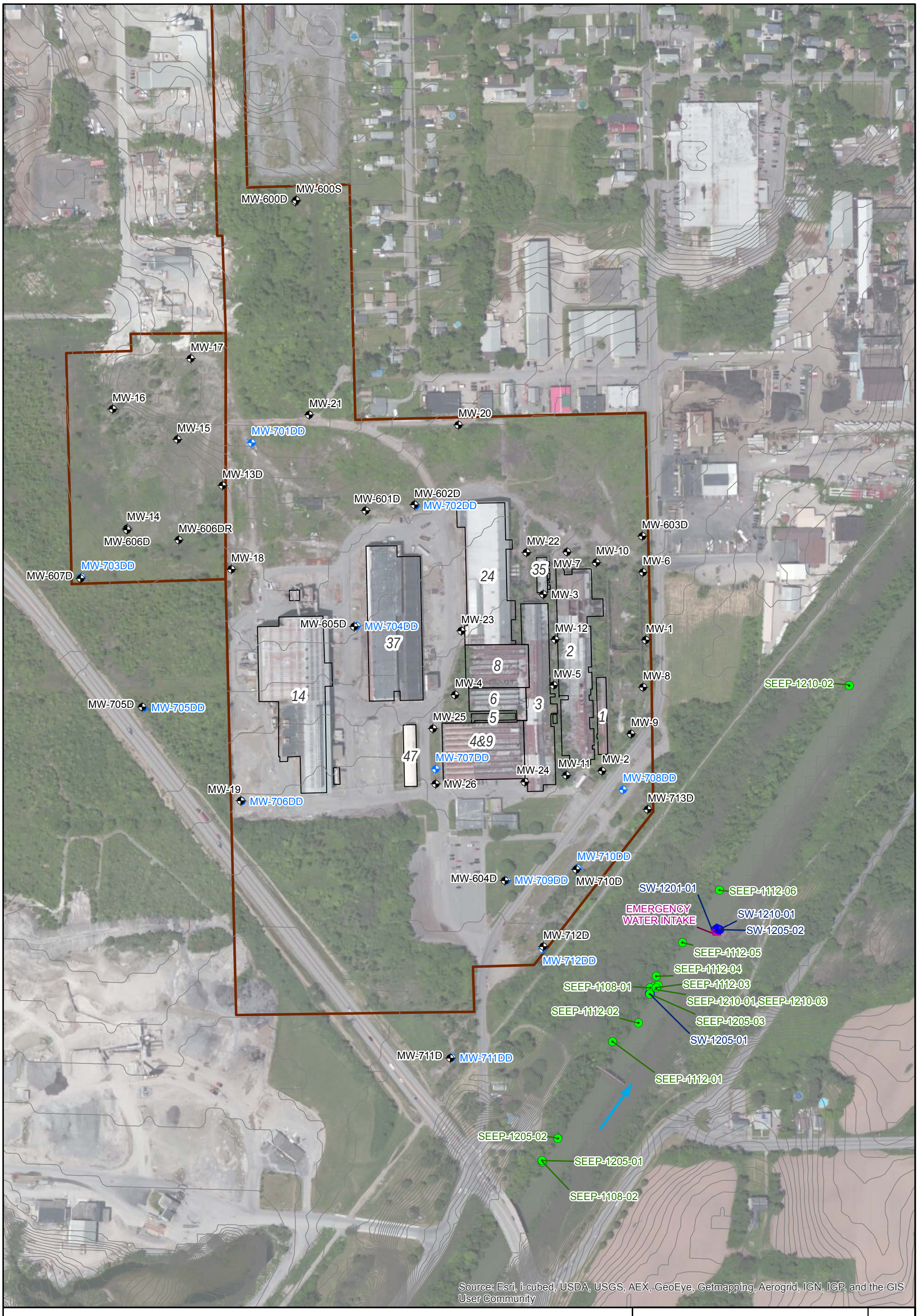
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

SITE LOCATION MAP

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
11/16/2012	1 inch = 2,000 feet	1-1

Filename: Fig1_Guterl_111_DGIR_Well_Research.pdf



LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE WATER LOCATION
- EMERGENCY WATER INTAKE
- SURFACE ELEVATION (1 FT CONTOUR)
- SURFACE WATER (CANAL) FLOW
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

0 75 150 300 Feet

SEEP AND SURFACE WATER (SW) SAMPLE IDENTIFICATION NOMENCLATURE (AAAA-XXYY-ZZ):
- AAAA DENOTES SAMPLE MEDIUM (SEEP OR SW)
- XX DENOTES YEAR
- YY DENOTES MONTH
- ZZ DENOTES THE SAMPLE NUMBER FOR THE SAMPLING EVENT

NOTES:
THE FOLLOWING 10 WELLS WERE SAMPLED ON A QUARTERLY BASIS IN 2012: MW-26, MW-604D, MW-605D, MW-704DD, MW-707DD, MW-708DD, MW-709DD, MW-710D, MW-710DD, AND MW-713D

US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

SITE PLAN WITH MONITORING WELL AND SEEP SAMPLING LOCATIONS (AUGUST 2011 – OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
5/29/2013	1 inch = 300 feet	2-1

File Name: Guterl_162_SSTM_Mon_Wells_2012 Date: 5/29/2013 Time: 9:26:17 AM

MW-600D (602.13)
MW-600S
MW-17 (598.05)
MW-16 (595.83)
MW-15 (597.39)
MW-13D (595.62)
MW-14 (594.12)
MW-606D (593.72)
MW-606DR (594.42)
MW-703DD
MW-607D (592.55)
MW-18 (594.94)
MW-705D (591.29)
MW-705DD
MW-19 (591.23)
MW-706DD
MW-21 (595.73)
MW-701DD
MW-20 (594.44)
(594.54) MW-602D
MW-702DD
MW-601D (594.68)
MW-605D (594.90)
MW-704DD
MW-23 (594.54)
MW-22 (594.19)
MW-7 (593.58)
MW-10 (593.38)
MW-603D (593.21)
MW-3 (593.35)
MW-6 (593.00)
MW-12 (593.58)
MW-1 (592.90)
MW-5 (593.02)
MW-4 (594.18)
MW-8 (592.23)
MW-25 (594.56)
MW-9 (591.32)
MW-707DD
MW-11 (590.23)
MW-2 (590.19)
MW-26 (593.66)
MW-24 (593.25)
MW-708DD
MW-713D (587.34)
MW-709DD
MW-710D
MW-710DD (586.02)
MW-604D (588.92)
MW-712D (574.46)
MW-712DD
SEEP-1108-01 (571.7)
MW-711DD
MW-711D (582.54)
SEEP-1108-02 (570.7)

602 601 600 599 598 597 596 595 594 593 592 591 590 589 588 587 586 585 584 583 582 580 578 576 574 572 581 579 577 575 573 571

0 75 150 300 Feet

Copyright© 2009 ESRI, i-cubed, GeoEye

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 SHALLOW GROUNDWATER CONTOUR
- SHALLOW GROUNDWATER FLOW PATH (INFERRED)
- (583.68) SHALLOW GROUNDWATER ELEVATION (FEET MSL)

NOTES:
1) CANAL WATER LEVEL WAS 565.7 FEET MSL AT 10:00 AM ON 8/8/2011. CANAL BOTTOM IS APPROXIMATELY 552.7 FEET MSL. CANAL WATER ELEVATION WAS REFERENCED FROM GAUGE READING AT LOCK 35, APPROXIMATELY 1.75 MILES DOWNSTREAM.

United States Army Corps of Engineers
Buffalo District
BUILDING STRONG

N W E S

POTENTIOMETRIC SURFACE MAP SHALLOW WELLS (AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/20/2013	1 inch = 333 feet	3-1A

File Name: Guterl_135_Shallow_GW_Contours_Aug2011 Date: 2/20/2013 Time: 4:25:10 PM

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 SHALLOW GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- SHALLOW GROUNDWATER FLOW PATH (INFERRED)
- (597.31) SHALLOW GROUNDWATER ELEVATION (FEET MSL)

0 75 150 300 Feet

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

POTENTIOMETRIC SURFACE MAP SHALLOW WELLS (JANUARY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/22/2013	1 inch = 300 feet	3-1B

File Name: Guterl_136_Shallow_GW_Ctrs_Jan2012 Date: 2/22/2013 Time: 9:03:44 AM

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE WATER LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 SHALLOW GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- SHALLOW GROUNDWATER FLOW PATH (INFERRED)
- (588.08) SHALLOW GROUNDWATER ELEVATION (FEET MSL)

0 75 150 300 Feet

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

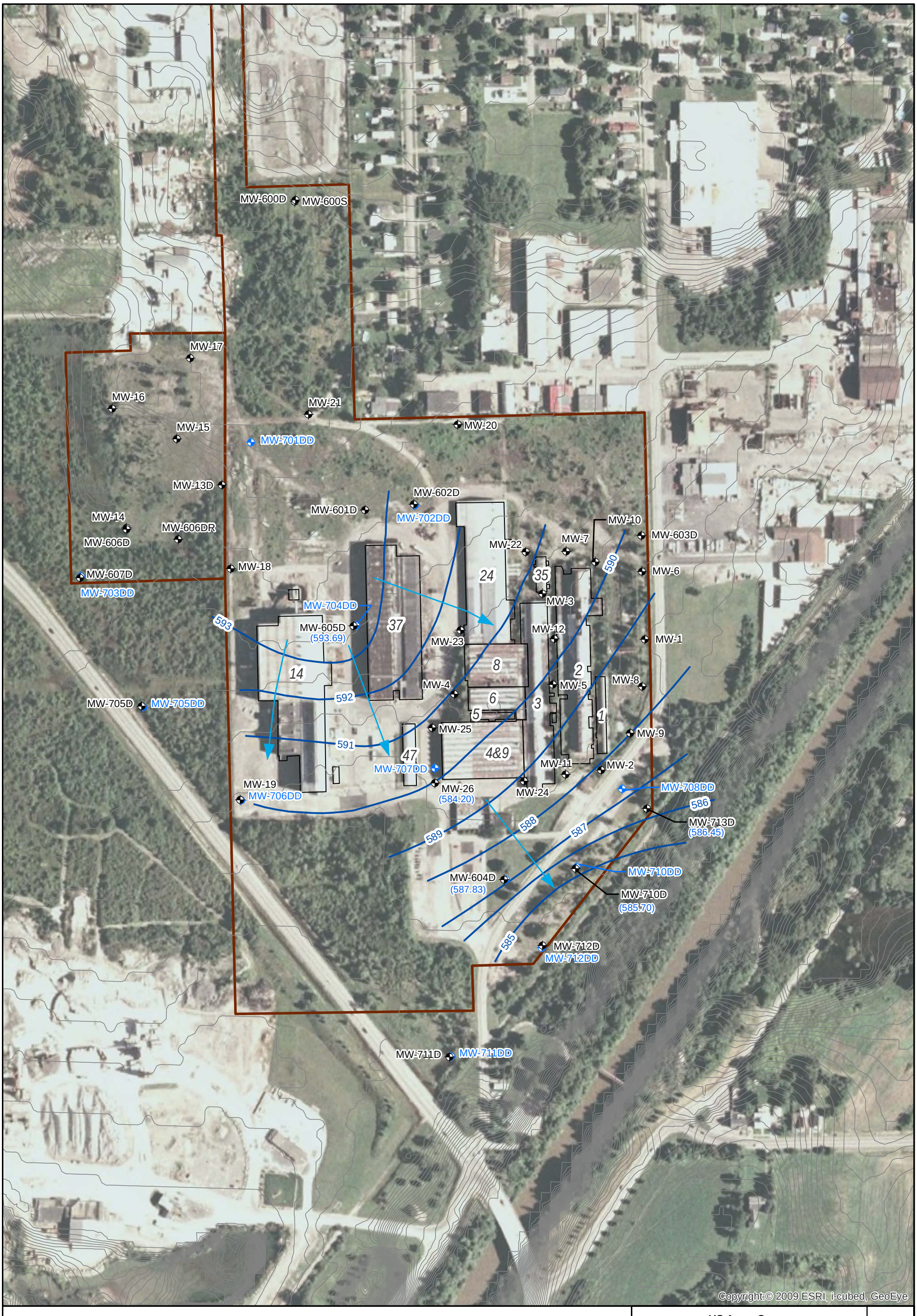
N W E S

POTENTIOMETRIC SURFACE MAP
SHALLOW WELLS
(MAY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/22/2013	1 inch = 300 feet	3-1C

File Name: Guterl_137_Shallow_GW_Ctrs_May2012 Date: 2/22/2013 Time: 9:13:43 AM



0 75 150 300 Feet

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 SHALLOW GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- SHALLOW GROUNDWATER FLOW PATH (INFERRED)
- (587.83) SHALLOW GROUNDWATER ELEVATION (FEET MSL)

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

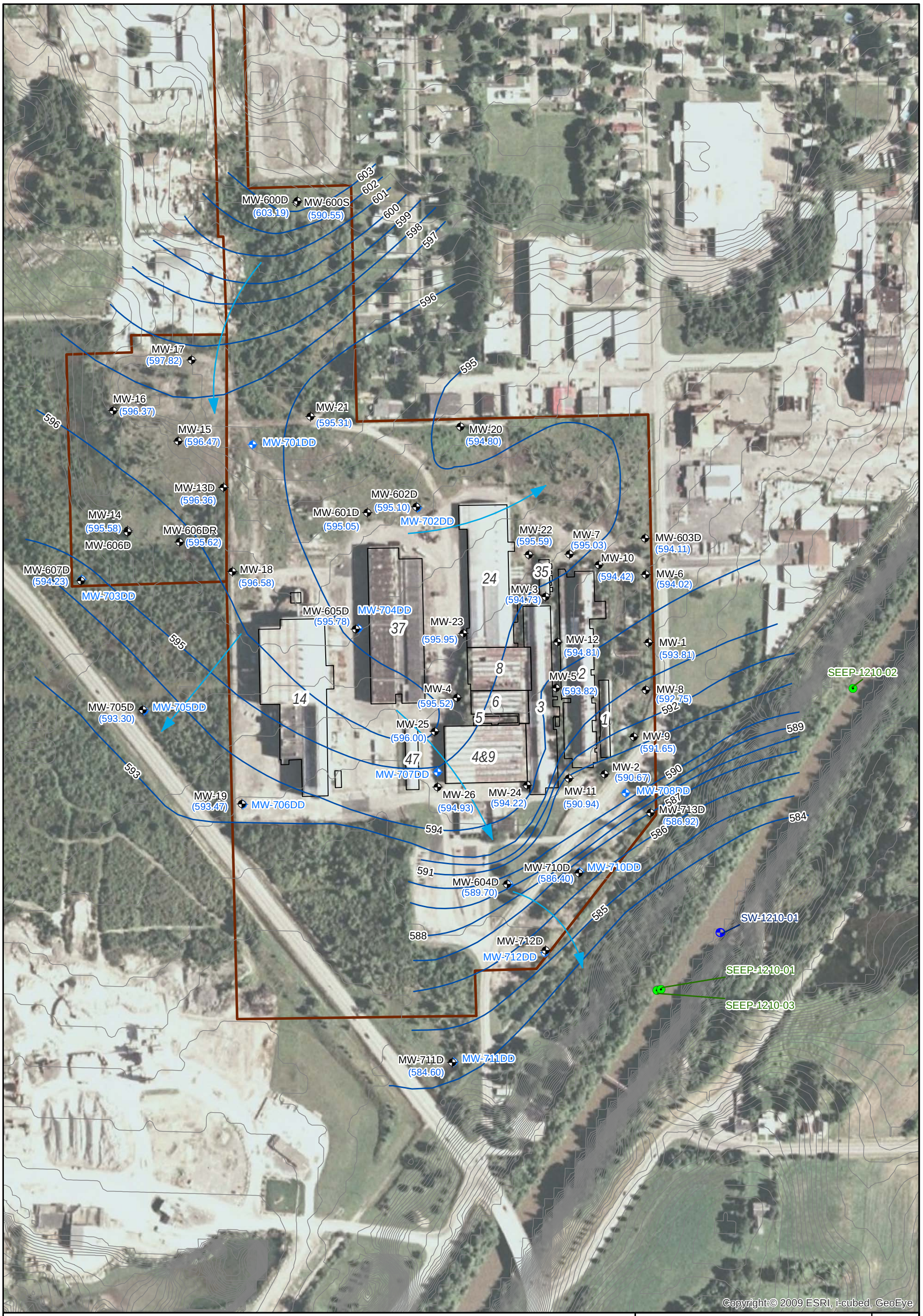
N W E S

POTENTIOMETRIC SURFACE MAP
SHALLOW WELLS
(AUGUST 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/22/2013	1 inch = 300 feet	3-1D

File Name: Guterl_144_Shallow_GW_Ctrs_Aug2012 Date: 2/22/2013 Time: 9:24:39 AM



LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION WATER LEVEL
- SURFACE WATER LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 SHALLOW GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- SHALLOW GROUNDWATER FLOW PATH (INFERRED)
- (590.67) SHALLOW GROUNDWATER ELEVATION (FEET MSL)

0 75 150 300 Feet

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

N W E S

POTENTIOMETRIC SURFACE MAP
SHALLOW WELLS
(OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/22/2013	1 inch = 300 feet	3-1E

File Name: Guterl_138_Shallow_GW_Ctrs_Oct2012 Date: 2/22/2013 Time: 4:12:07 PM

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL BUILDINGS
- GUTERL SITE BOUNDARY
- 586 DEEP GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- DEEP GROUNDWATER FLOW PATH (INFERRED)
- (589.45) DEEP GROUNDWATER ELEVATION (FEET MSL)

0 75 150 300 Feet

NOTES:
WELL MW-707DD WAS NOT USED FOR CONTOURING BECAUSE IT DOES NOT INTERSECT WATER PRODUCING FRACTURES.

US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

POTENTIOMETRIC SURFACE MAP
DEEP WELLS
(AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/22/2013	1 inch = 300 feet	3-2A

File Name: Guterl_139_Deep_GW_Ctrs_Aug2011 Date: 2/22/2013 Time: 9:46:40 AM

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 DEEP GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- DEEP GROUNDWATER FLOW PATH (INFERRED)
- (597.33) DEEP GROUNDWATER ELEVATION (FEET MSL)

0 75 150 300 Feet

NOTES:
WELL MW-707-DD WAS NOT USED FOR CONTOURING BECAUSE THIS WELL HAS HISTORICALLY PROVIDED ANOMALOUS WATER LEVEL MEASUREMENTS.

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

N W E S

POTENTIOMETRIC SURFACE MAP
DEEP WELLS
(JANUARY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/22/2013	1 inch = 300 feet	3-2B

File Name: Guterl_140_Deep_GW_Ctrs_Jan2012 Date: 2/22/2013 Time: 9:56:10 AM

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE WATER LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 DEEP GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- DEEP GROUNDWATER FLOW PATH (INFERRED)
- (574.98) DEEP GROUNDWATER ELEVATION (FEET MSL)

NOTES:
WELL MW-707-DD WAS NOT USED FOR CONTOURING BECAUSE THIS WELL HAS HISTORICALLY PROVIDED ANOMALOUS WATER LEVEL MEASUREMENTS.

0 75 150 300 Feet

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

N W E S

POTENTIOMETRIC SURFACE MAP
DEEP WELLS
(MAY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/06/2013	1 inch = 300 feet	3-2C

File Name: Guterl_141_Deep_GW_Ctrs_May2012 Date: 2/6/2013 Time: 11:11:23 AM

0 75 150 300 Feet

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL BUILDINGS
- GUTERL SITE BOUNDARY
- 586 DEEP GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- DEEP GROUNDWATER FLOW PATH (INFERRED)
- (593.37) DEEP GROUNDWATER ELEVATION (FEET MSL)

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

N W E S

POTENTIOMETRIC SURFACE MAP
DEEP WELLS
(AUGUST 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/22/2013	1 inch = 300 feet	3-2D

File Name: Guterl_145_Deep_GW_Ctrs_Aug2012 Date: 2/22/2013 Time: 5:06:07 PM

LEGEND

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE WATER LOCATION
- SURFACE ELEVATION (1 FT CONTOUR)
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- 586 DEEP GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- DEEP GROUNDWATER FLOW PATH (INFERRED)
- (595.47) DEEP GROUNDWATER ELEVATION (FEET MSL)

NOTES:
WELL MW-707-DD WAS NOT USED FOR CONTOURING BECAUSE THIS WELL HAS HISTORICALLY PROVIDED ANOMALOUS WATER LEVEL MEASUREMENTS.

0 75 150 300 Feet

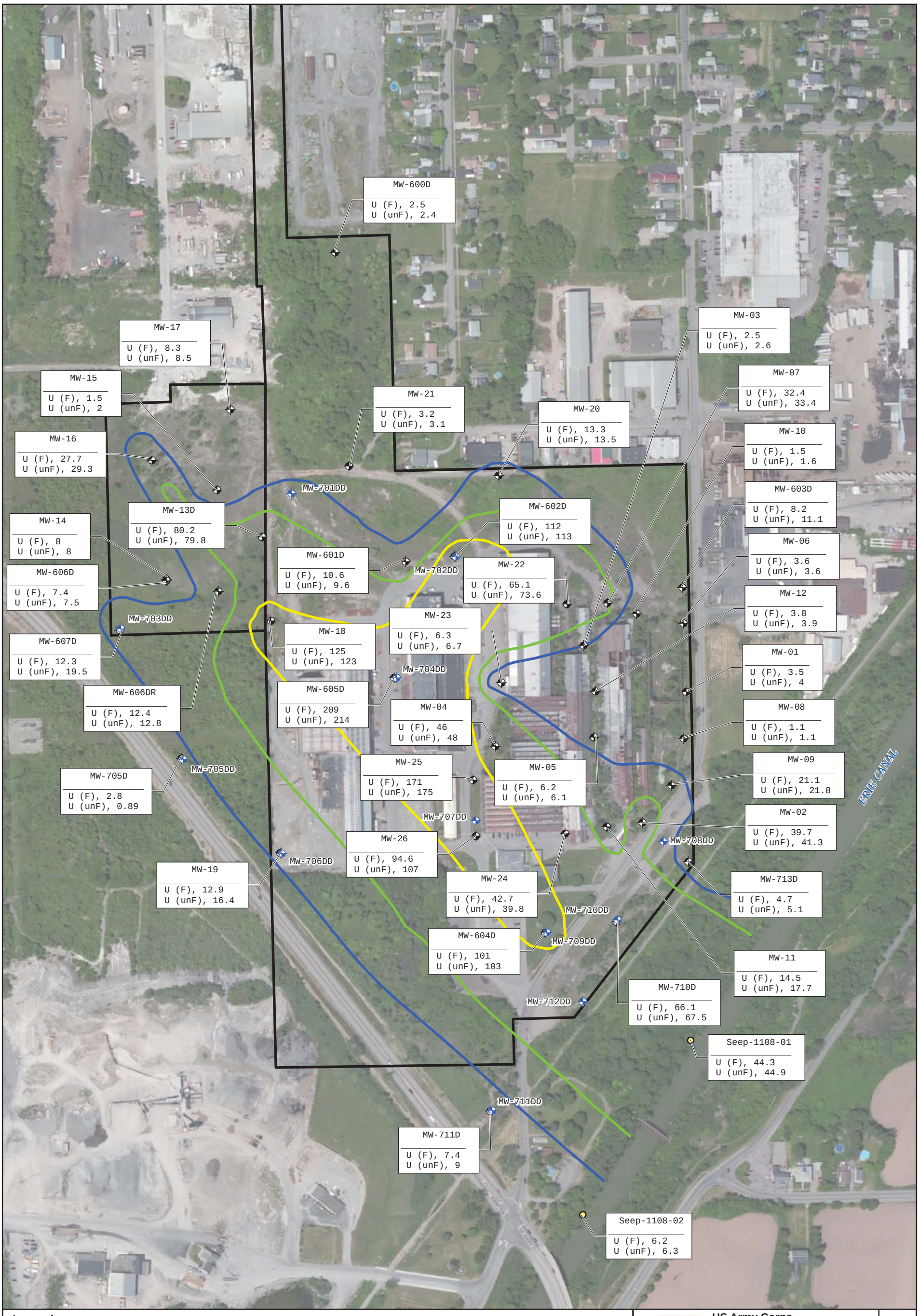
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

POTENTIOMETRIC SURFACE MAP DEEP WELLS (OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
2/06/2013	1 inch = 300 feet	3-2E

File Name: Guterl_142_Deep_GW_Ctrs_Oct2012 Date: 2/6/2013 Time: 2:24:48 PM



Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Seep Sample Location
- Extent of Groundwater 10 ug/l
- Extent of Groundwater 30 ug/l
- Extent of Groundwater 90 ug/l
- Site Boundary

ALTHOUGH THE U (F) AND U (UNF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

0 75 150 300 Feet

Notes:
U (F) - Total Uranium Filtered
U (unF) - Total Uranium Unfiltered

All concentrations reported in ug/l.
ug/l - Micrograms per Liter.

Location ID: MW-26
U (unF), 107
Radionuclide / Activity

US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

TOTAL URANIUM IN SHALLOW GROUNDWATER (AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
8/07/2013	1 inch = 300 feet	3-3A

Document Path: K:\Guterl\GIS\ArcMap\Groundwater\2015\SS\Fig3-3A_0811ShallowWG.mxd Date: 3/10/2015 Time: 1:51:15 PM

Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SURFACE WATER SAMPLE LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- EXTENT OF GROUNDWATER 90 µg/l
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

NOTE: ALTHOUGH THE U (F) AND U (unF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

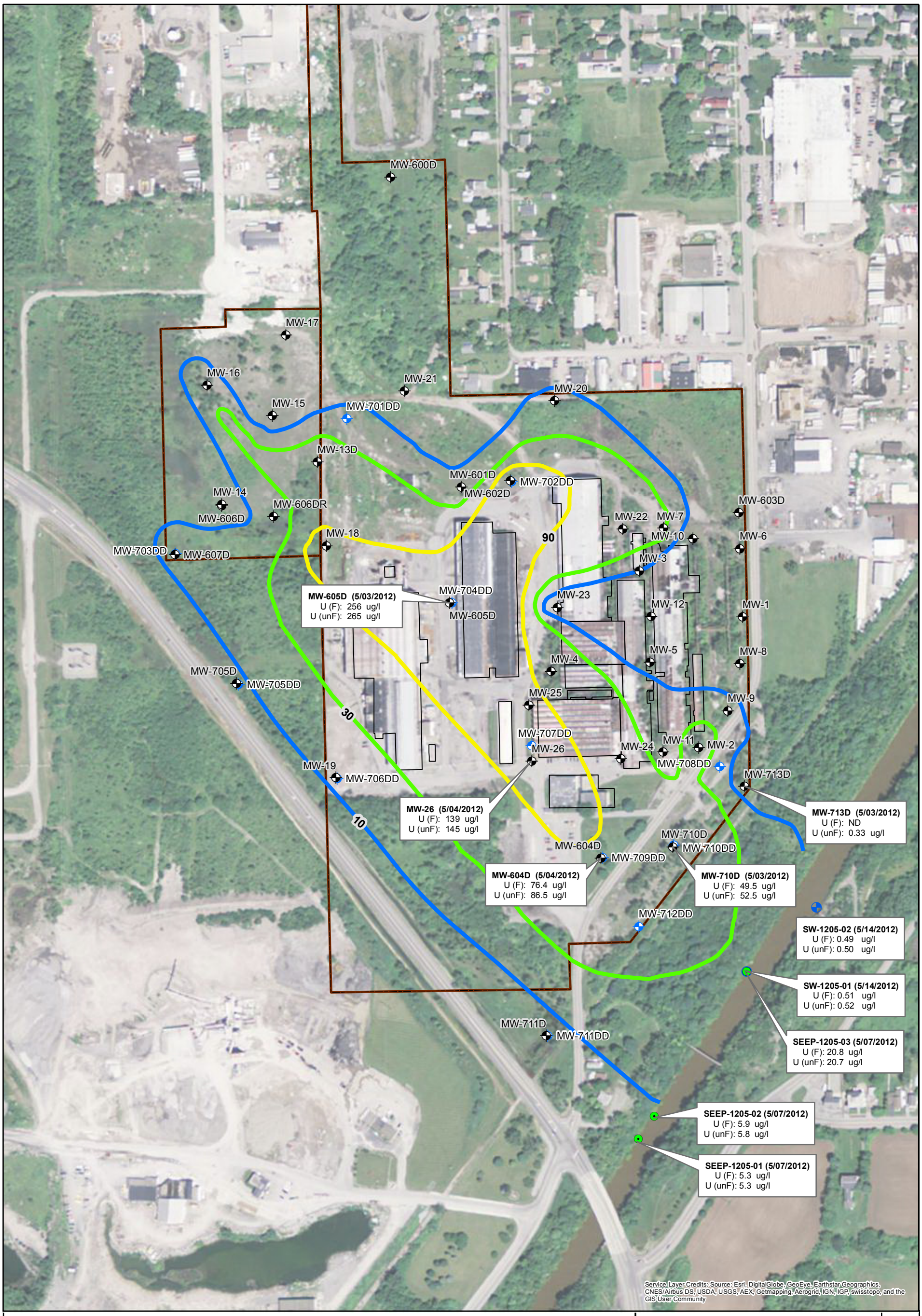
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

TOTAL URANIUM IN SHALLOW GROUNDWATER
(JANUARY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
7/23/2013	1 inch = 300 feet	3-3B

User: mike.najar Path: G:\Guterl\140416\GIS_Documents\Project_Maps\July2015\Guterl_150_GWUr_Jan2012_Shallow.mxd Date: 7/13/2015 Time: 9:42:45 AM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE WATER LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- EXTENT OF GROUNDWATER 90 µg/l
- GUTERL SITE BOUNDARY

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

NOTE: ALTHOUGH THE U (F) AND U (unF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

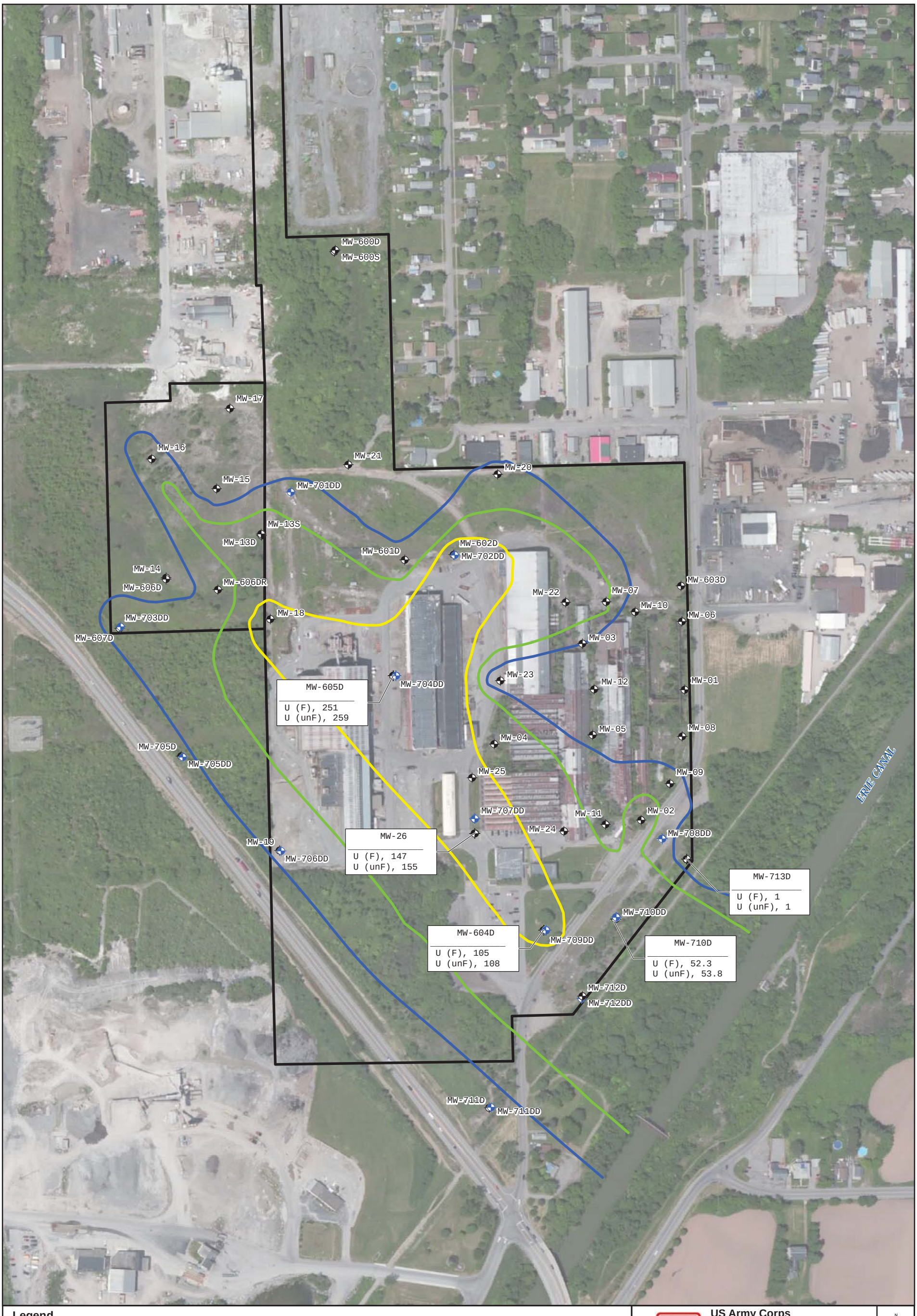
US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

TOTAL URANIUM IN SHALLOW GROUNDWATER
(MAY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
7/23/2013	1 inch = 300 feet	3-3C

User: mike.najar Path: G:\Guterl\140416\GIS_Documents\Project_Maps\July2015\Guterl_151_GWUr_May2012_Shallow.mxd Date: 7/13/2015 Time: 9:54:32 AM



Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Seep Sample Location
- Extent of Groundwater 10 ug/l
- Extent of Groundwater 30 ug/l
- Extent of Groundwater 90 ug/l
- Site Boundary

ALTHOUGH THE U (F) AND U (UNF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

0 75 150 300 Feet

Notes:
U (F) - Total Uranium Filtered
U (unF) - Total Uranium Unfiltered

All concentrations reported in ug/l.
ug/l - Micrograms per Liter.

Location ID: MW-26
U (unF), 155
Radionuclide / Activity

US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

TOTAL URANIUM IN SHALLOW GROUNDWATER (AUGUST 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
8/07/2013	1 inch = 300 feet	3-3D

Document Path: K:\Guterl\GIS\ArcMap\Groundwater\2015\SS\Fig3-3D_0812ShallowWG.mxd Date: 3/10/2015 Time: 1:55:58 PM

MW-600D
U (F), 1.54
U (unF), 1.41

MW-600S

MW-16
U (F), 28.1
U (unF), 27.1

MW-17

MW-21
U (F), 5.2
U (unF), 5.4

MW-20
U (F), 9.98
U (unF), 9.57

MW-22
U (F), 12.3
U (unF), 12.9

MW-15

MW-701DD

MW-13D
U (F), 107
U (unF), 109

MW-13S

MW-602D
U (F), 110
U (unF), 110

MW-07
U (F), 36.6
U (unF), 37.4

MW-603D
U (F), 6.71
U (unF), 6.58

MW-14

MW-606D

MW-606DR

MW-601D
U (F), 8.17
U (unF), 7.3

MW-702DD

MW-10

MW-06

SEEP-1210-2
U (F), 0.91
U (unF), 0.90

MW-703DD

MW-607D
U (F), 12.2
U (unF), 13.9

MW-18
U (F), 149
U (unF), 146

MW-605D
U (F), 266
U (unF), 270

MW-704DD

MW-03

MW-01
U (F), 3.29
U (unF), 3.44

MW-12

MW-23
U (F), 8.46
U (unF), 8.72

MW-05

MW-08

MW-09
U (F), 41.1
U (unF), 41

MW-705D

MW-705DD

MW-04
U (F), 41.2
U (unF), 39.6

MW-02
U (F), 24
U (unF), 23.8

MW-25
U (F), 162
U (unF), 166

MW-707DD

MW-708DD

ERIE CANAL

MW-713D
U (F), ND
U (unF), ND

MW-19
U (F), 18.8
U (unF), 18.9

MW-706DD

MW-26
U (F), 260
U (unF), 243

MW-24
U (F), 11.9
U (unF), 8.02

MW-710DD

MW-11
U (F), 33
U (unF), 32.1

MW-709DD

MW-710D
U (F), 66.8
U (unF), 66

MW-604D
U (F), 111
U (unF), 112

MW-712D

MW-712DD

SURFACE-1210-1
U (F), 0.60
U (unF), 0.60

SEEP-1210-1
U (F), 33
U (unF), 35.4

SEEP-1210-3
U (F), 36.8
U (unF), 36.2

MW-711D
U (F), 4.09
U (unF), 4.02

MW-711DD

Legend

- Surface Water Sample Location
- Site Boundary
- Deep Monitoring Well
- Shallow Monitoring Well
- Seep Sample Location
- Extent of Groundwater 10 ug/l
- Extent of Groundwater 30 ug/l
- Extent of Groundwater 90 ug/l

ALTHOUGH THE U (F) AND U (UNF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

0 75 150 300 Feet

Notes:
U (F) - Total Uranium Filtered
U (unF) - Total Uranium Unfiltered

All concentrations reported in ug/l.
ug/l - Micrograms per Liter.

Location ID: MW-25
U (unF), 166
Radionuclide / Activity

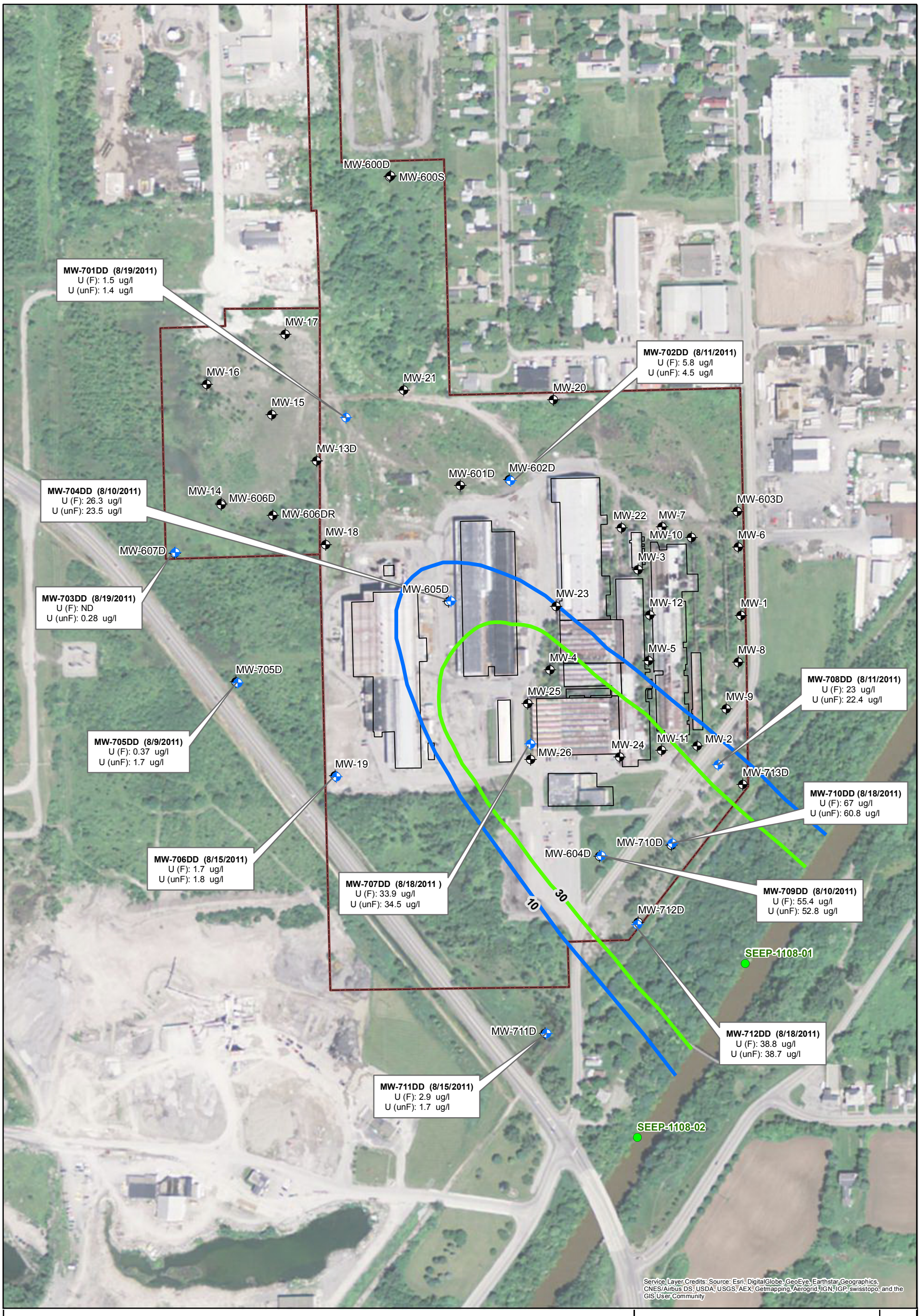
US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

TOTAL URANIUM IN SHALLOW GROUNDWATER (OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
8/07/2013	1 inch = 300 feet	3-3E

Document Path: K:\Guterl\GIS\ArcMap\Groundwater\2015\SS\Fig3-3E_1012ShallowWG.mxd Date: 5/8/2015 Time: 7:18:05 AM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

NOTE: ALTHOUGH THE U (F) AND U (unF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

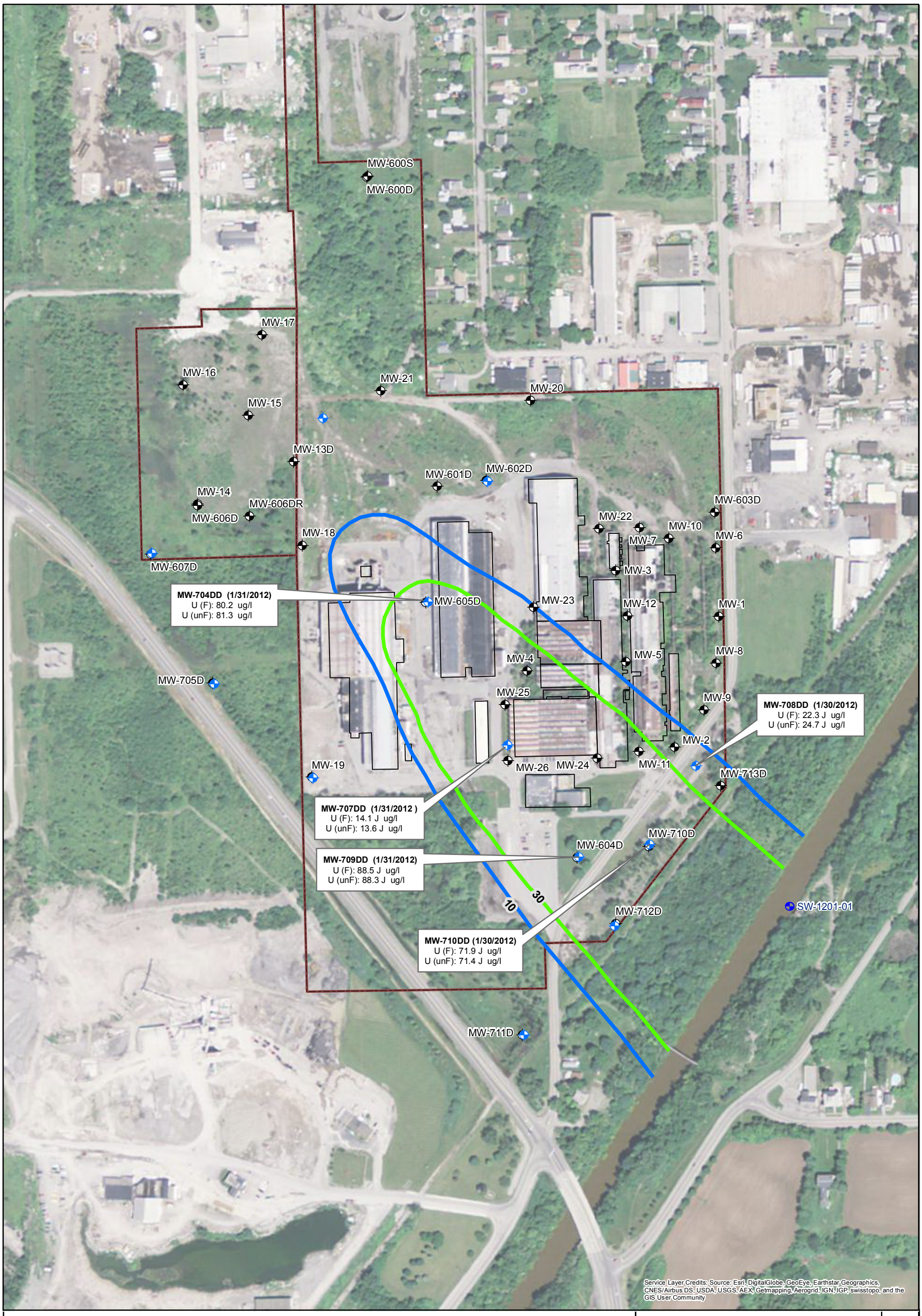
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

TOTAL URANIUM IN DEEP GROUNDWATER
(AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
7/23/2013	1 inch = 300 feet	3-4A

User: mike.najar Path: G:\Guterl\140416\GIS_Documents\Project_Maps\July2015\Guterl_134_GWTotUr_Aug2011_Deep.mxd Date: 7/13/2015 Time: 8:56:07 AM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SURFACE WATER SAMPLE LOCATION
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

NOTES: MW-707-DD WAS NOT USED FOR CONTOURING DUE TO ANOMALOUS URANIUM CONCENTRATIONS. IN ADDITION TO URANIUM CONCENTRATIONS, GROUNDWATER ELEVATIONS, SPECIFIC CONDUCTANCE, AND TOTAL DISSOLVED SOLIDS AT THIS WELL ARE ALSO ANOMALOUS, POSSIBLY INDICATING THAT THE WELL IS NOT CONNECTED TO REGIONAL GROUNDWATER FLOW SYSTEM.
ALTHOUGH THE U (F) AND U (unF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING.
SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

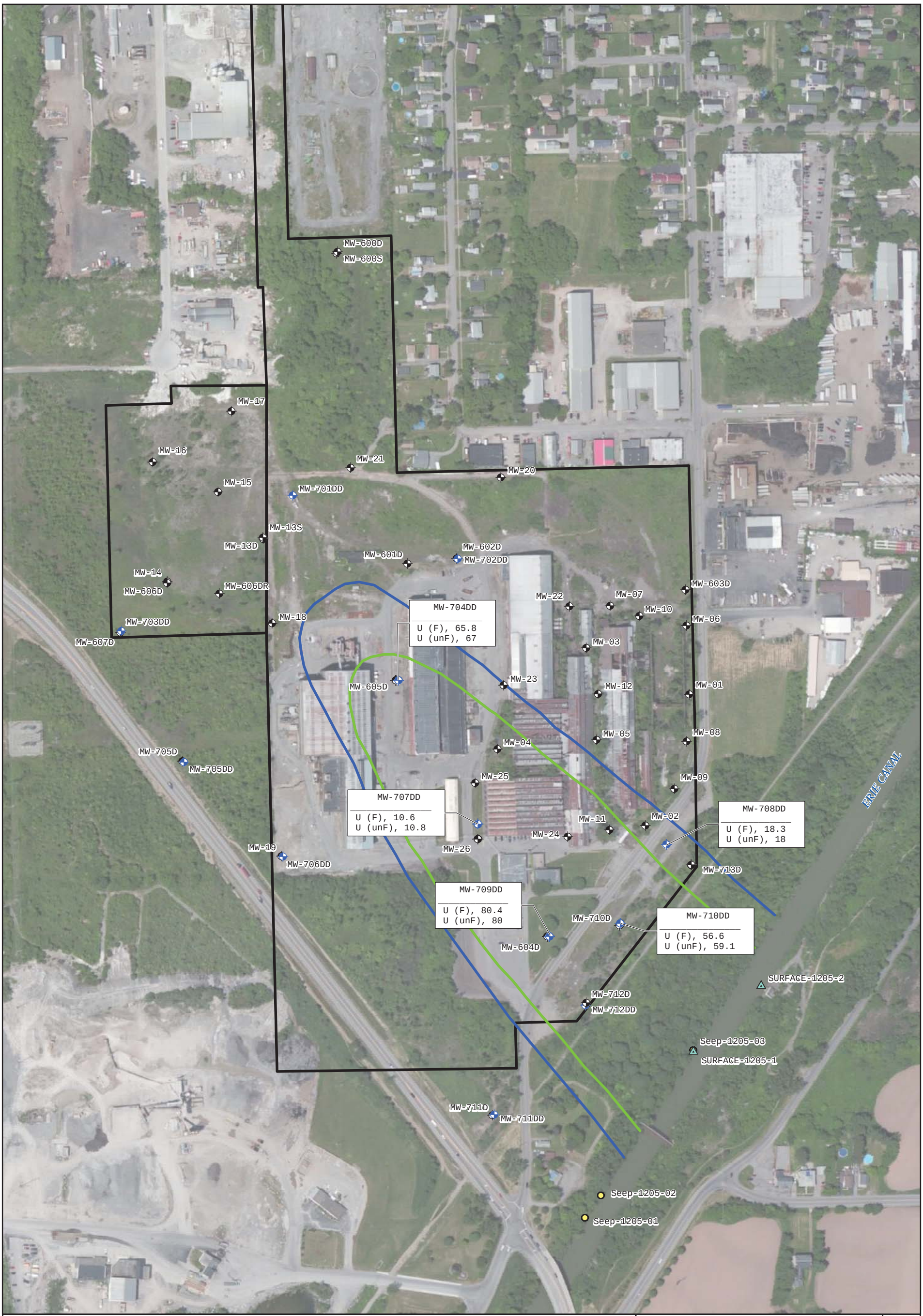
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

TOTAL URANIUM IN DEEP GROUNDWATER (JANUARY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
7/23/2013	1 inch = 300 feet	3-4B

User: mike.najar Path: G:\Guterl\140416\GIS_Documents\Project_Maps\July2015\Guterl_154_GWTotUr_Jan2012_Deep.mxd Date: 7/10/2015 Time: 2:50:38 PM



Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Seep Sample Location
- Surface Water Sample Location
- Extent of Groundwater 10 ug/l
- Extent of Groundwater 30 ug/l
- Extent of Groundwater 90 ug/l
- Site Boundary

MW-707-DD WAS NOT USED FOR CONTOURING DUE TO ANOMALOUS URANIUM CONCENTRATIONS. IN ADDITION TO URANIUM CONCENTRATIONS, GROUNDWATER ELEVATIONS, SPECIFIC CONDUCTANCE, AND TOTAL DISSOLVED SOLIDS AT THIS WELL ARE ALSO ANOMALOUS, POSSIBLY INDICATING THAT THE WELL IS NOT CONNECTED TO REGIONAL GROUNDWATER FLOW SYSTEM.
ALTHOUGH THE U (F) AND U (UNF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

0 75 150 300 Feet

Notes:
U (F) - Total Uranium Filtered
U (unF) - Total Uranium Unfiltered

All concentrations reported in ug/l.
ug/l - Micrograms per Liter.

Location ID: MW-709DD
U (unF), 80
Radionuclide / Activity

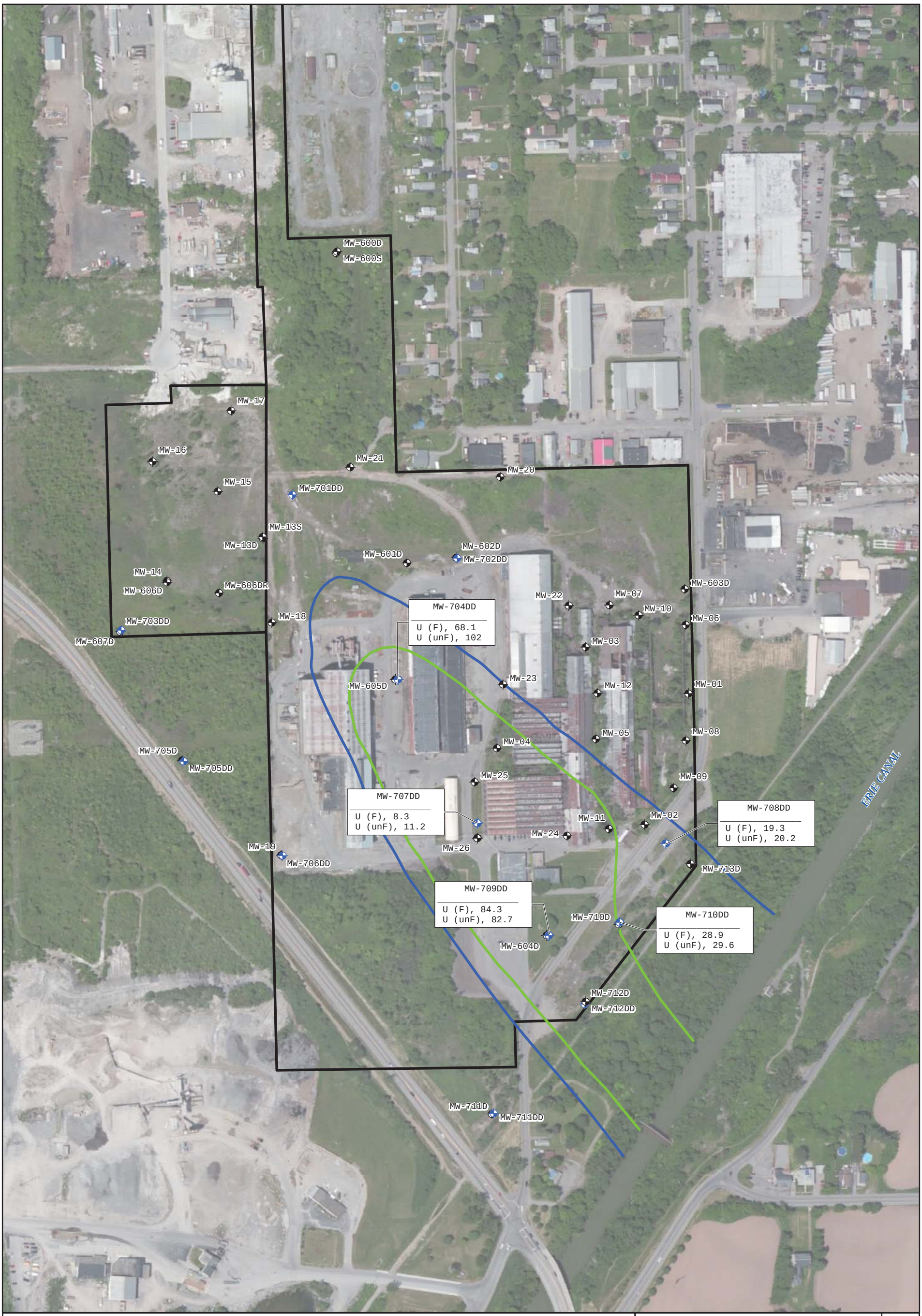
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

TOTAL URANIUM IN DEEP GROUNDWATER (MAY 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
8/07/2013	1 inch = 300 feet	3-4C

Document Path: K:\Guterl\GIS\ArcMap\Groundwater\2015\SS\Fig3-4C_0512DeepWG.mxd Date: 3/10/2015 Time: 2:01:19 PM



Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Seep Sample Location
- Surface Water Sample Location
- Extent of Groundwater 10 ug/l
- Extent of Groundwater 30 ug/l
- Extent of Groundwater 90 ug/l
- Site Boundary

MW-707-DD WAS NOT USED FOR CONTOURING DUE TO ANOMALOUS URANIUM CONCENTRATIONS. IN ADDITION TO URANIUM CONCENTRATIONS, GROUNDWATER ELEVATIONS, SPECIFIC CONDUCTANCE, AND TOTAL DISSOLVED SOLIDS AT THIS WELL ARE ALSO ANOMALOUS, POSSIBLY INDICATING THAT THE WELL IS NOT CONNECTED TO REGIONAL GROUNDWATER FLOW SYSTEM.
ALTHOUGH THE U (F) AND U (UNF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

0 75 150 300 Feet

Notes:
U (F) - Total Uranium Filtered
U (unF) - Total Uranium Unfiltered

All concentrations reported in ug/l.
ug/l - Micrograms per Liter.

Location ID: MW-709DD
U (unF), 82.7
Radionuclide; Activity

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

TOTAL URANIUM IN DEEP GROUNDWATER (AUGUST 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
8/07/2013	1 inch = 300 feet	3-4D

Document Path: K:\Guterl\GIS\ArcMap\Groundwater\2015\SS\Fig3-4D_0812DeepWG.mxd Date: 3/10/2015 Time: 2:00:39 PM

MW-600D
MW-600S
MW-17
MW-16
MW-21
MW-20
MW-15
MW-701DD
MW-13S
MW-13D
MW-602D
MW-601D
MW-702DD
MW-14
MW-606D
MW-606DR
MW-603D
MW-22
MW-07
MW-10
MW-704DD
U (F), 73.4
U (unF), 72.4
MW-703DD
MW-18
MW-06
MW-607D
MW-03
MW-23
MW-605D
MW-12
MW-01
MW-705D
MW-05
MW-08
SEEP-1210-2
MW-04
MW-705DD
MW-25
MW-09
ERIE CANAL
MW-707DD
U (F), 8.4
U (unF), 9.4
MW-11
MW-02
MW-708DD
U (F), 20.1
U (unF), 20
MW-24
MW-19
MW-26
MW-706DD
MW-713D
MW-709DD
U (F), 83.8
U (unF), 85.9
MW-710D
MW-710DD
U (F), 28.3
U (unF), 28.6
MW-604D
SURFACE-1210-1
MW-712D
MW-712DD
U (F), 30.8
U (unF), 28.3
SEEP-1210-1
SEEP-1210-3
MW-711D
MW-711DD
U (F), 1.63
U (unF), 1.49

Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Seep Sample Location
- Surface Water Sample Location
- Extent of Groundwater 10 ug/l
- Extent of Groundwater 30 ug/l
- Extent of Groundwater 90 ug/l
- Site Boundary

MW-707-DD WAS NOT USED FOR CONTOURING DUE TO ANOMALOUS URANIUM CONCENTRATIONS. IN ADDITION TO URANIUM CONCENTRATIONS, GROUNDWATER ELEVATIONS, SPECIFIC CONDUCTANCE, AND TOTAL DISSOLVED SOLIDS AT THIS WELL ARE ALSO ANOMALOUS, POSSIBLY INDICATING THAT THE WELL IS NOT CONNECTED TO REGIONAL GROUNDWATER FLOW SYSTEM.
ALTHOUGH THE U (F) AND U (UNF) VALUES ARE GENERALLY SIMILAR, IN CASE OF DISCREPANCY THE U (F) VALUES ARE USED FOR CONTOURING. SURFACE WATER SAMPLES WERE NOT USED TO DRAW CONTOURS.

0 75 150 300 Feet

Notes:
U (F) - Total Uranium Filtered
U (unF) - Total Uranium Unfiltered

All concentrations reported in ug/l.
ug/l - Micrograms per Liter.

Location ID: MW-709DD
U (unF), 82.7
Radionuclide / Activity

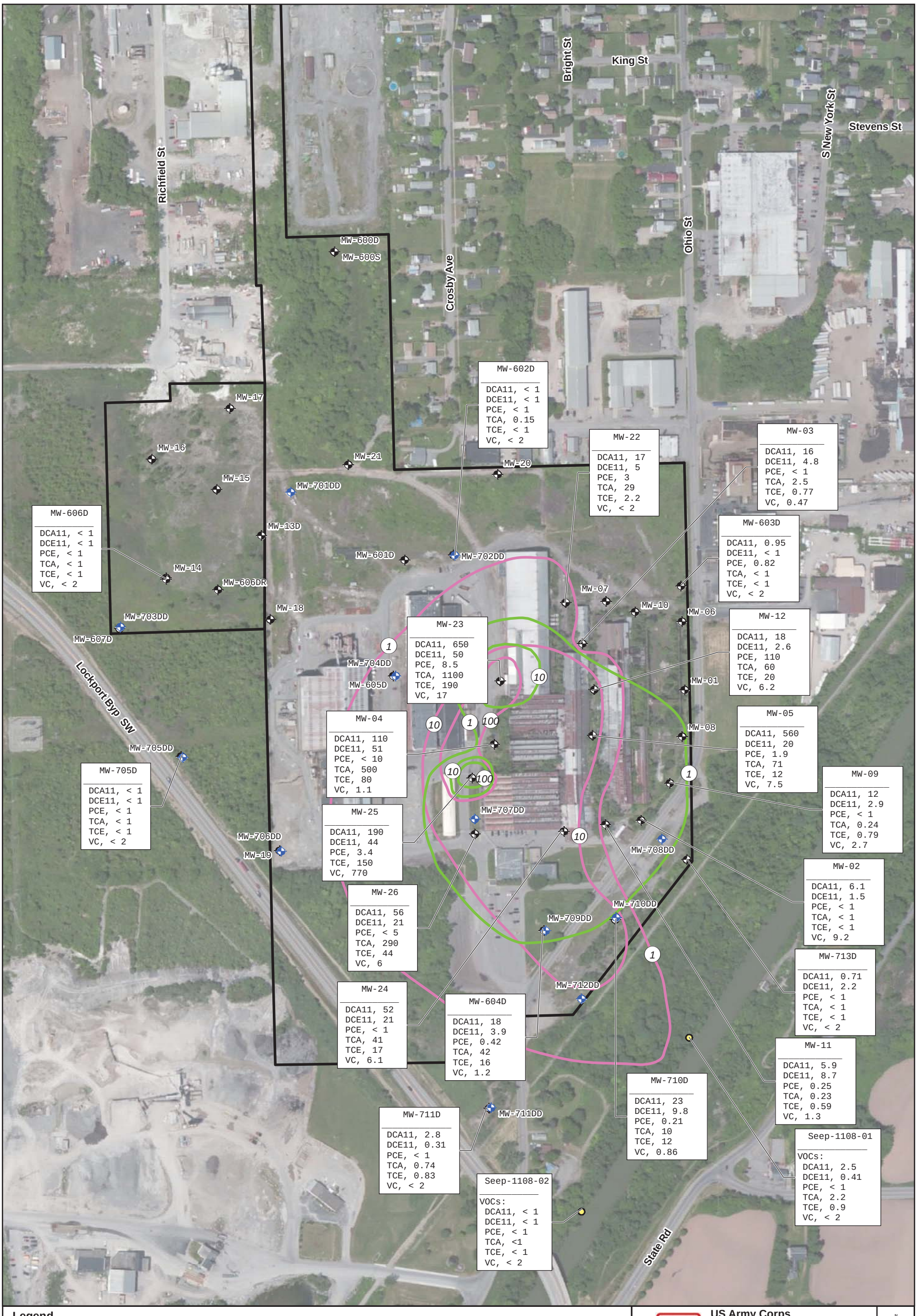
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

TOTAL URANIUM IN DEEP GROUNDWATER (OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
8/07/2013	1 inch = 300 feet	3-4E

Document Path: K:\Guterl\GIS\ArcMap\Groundwater\2015\SS\Fig3-4E_1012DeepWG.mxd Date: 3/10/2015 Time: 2:02:46 PM



Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Seep Sample Location
- TCE Concentration Contour
- VC Concentration Contour
- Site Boundary

0 75 150 300 Feet

Notes:
All concentrations reported in ug/l.
ug/l - Micrograms per Liter.
TCE - Trichloroethene
VC - Vinyl Chloride
VOCS - Volatile Organic Compounds

Location ID: MW-26
TCE, 65
Parameter / Concentration

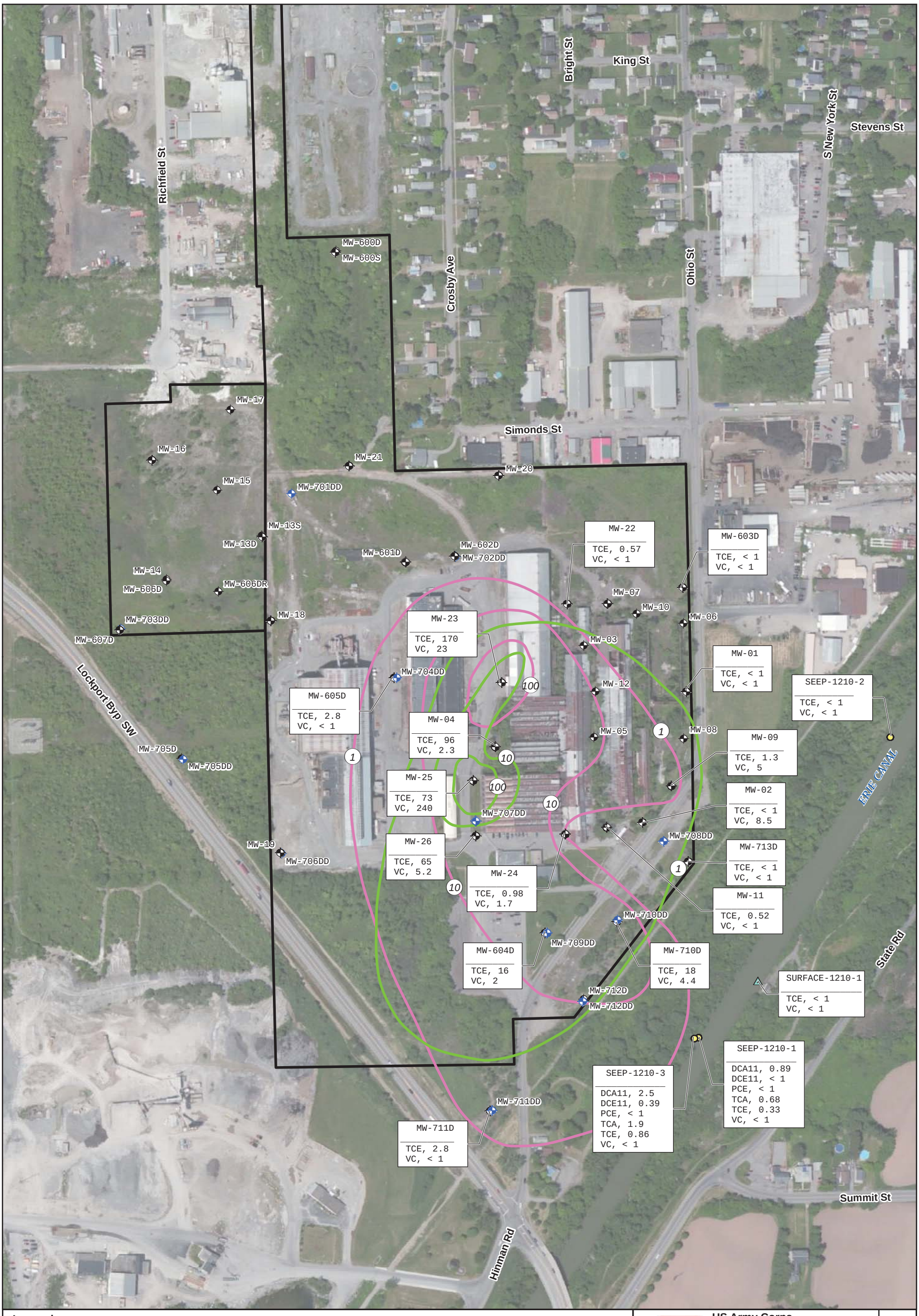
US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

VOCS IN SHALLOW GROUNDWATER (AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
8/07/2013	1 inch = 300 feet	3-5A

Document Path: K:\Guterl\GIS\ArcMap\Groundwater\2015\SS\Fig3-5A_0811ShallowVOC.mxd Date: 3/10/2015 Time: 2:27:24 PM



Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Seep Sample Location
- Surface Water Sample Location
- TCE Concentration Contour
- VC Concentration Contour
- Site Boundary

0 75 150 300 Feet

Notes:
All concentrations reported in ug/l.
ug/l - Micrograms per Liter.
TCE - Trichloroethene
VC - Vinyl Chloride
VOCS - Volatile Organic Compounds

Location ID: MW-24
Parameter: TCA, 0.98
Concentration

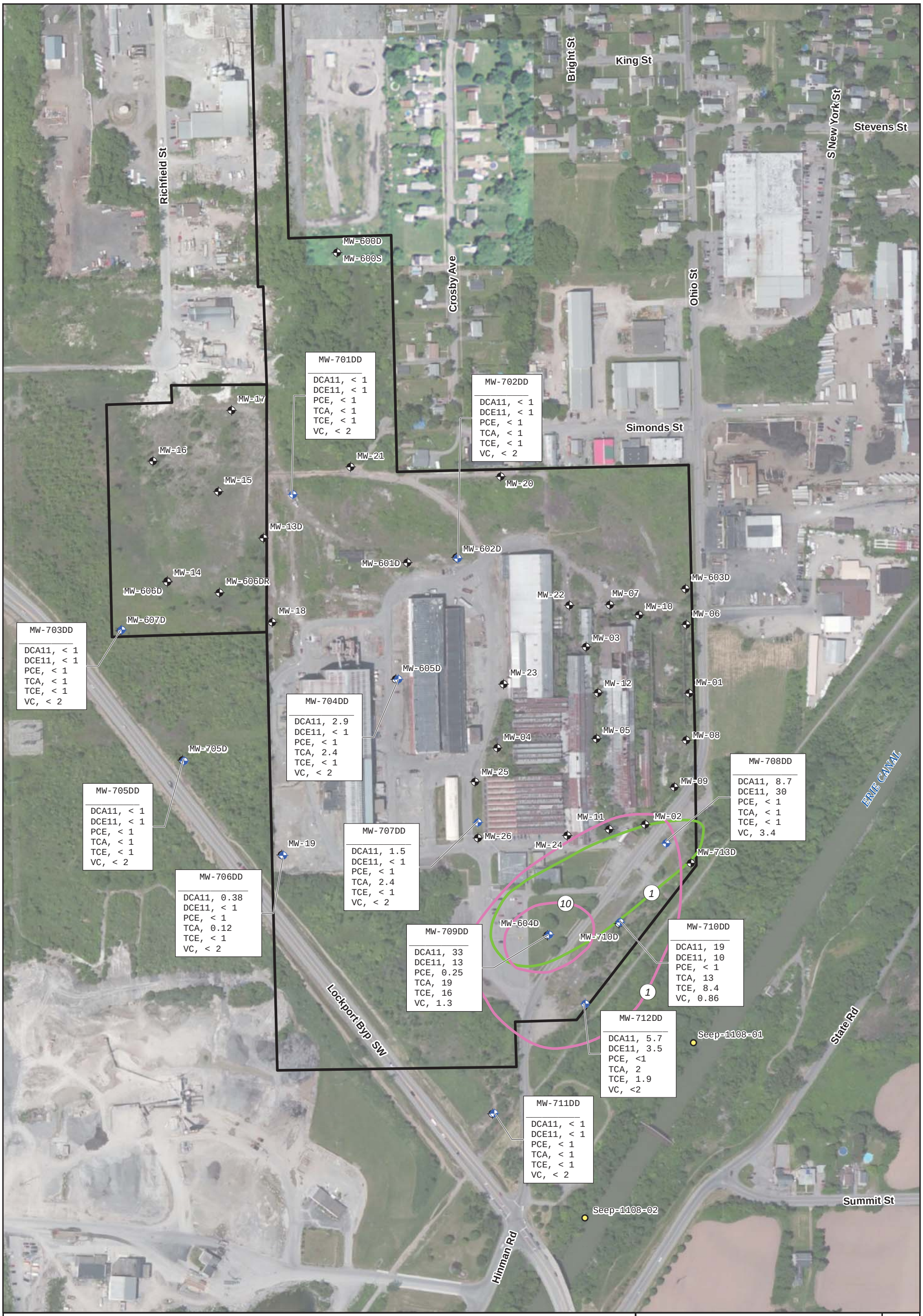
US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG®

VOCS IN SHALLOW GROUNDWATER (OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
8/07/2013	1 inch = 300 feet	3-5B

Document Path: K:\Guterl\GIS\ArcMap\Groundwater\2015\SS\Fig3-5B_1012ShallowVOC.mxd Date: 3/10/2015 Time: 2:27:32 PM



Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Seep Sample Location
- TCE Concentration Contour
- VC Concentration Contour
- Site Boundary

0 75 150 300 Feet

Notes:
All concentrations reported in ug/l.
ug/l - Micrograms per Liter.
TCE - Trichloroethene
VC - Vinyl Chloride
VOCS - Volatile Organic Compounds

Location ID: MW-706DD
Parameter: DCA11, 0.38
Concentration

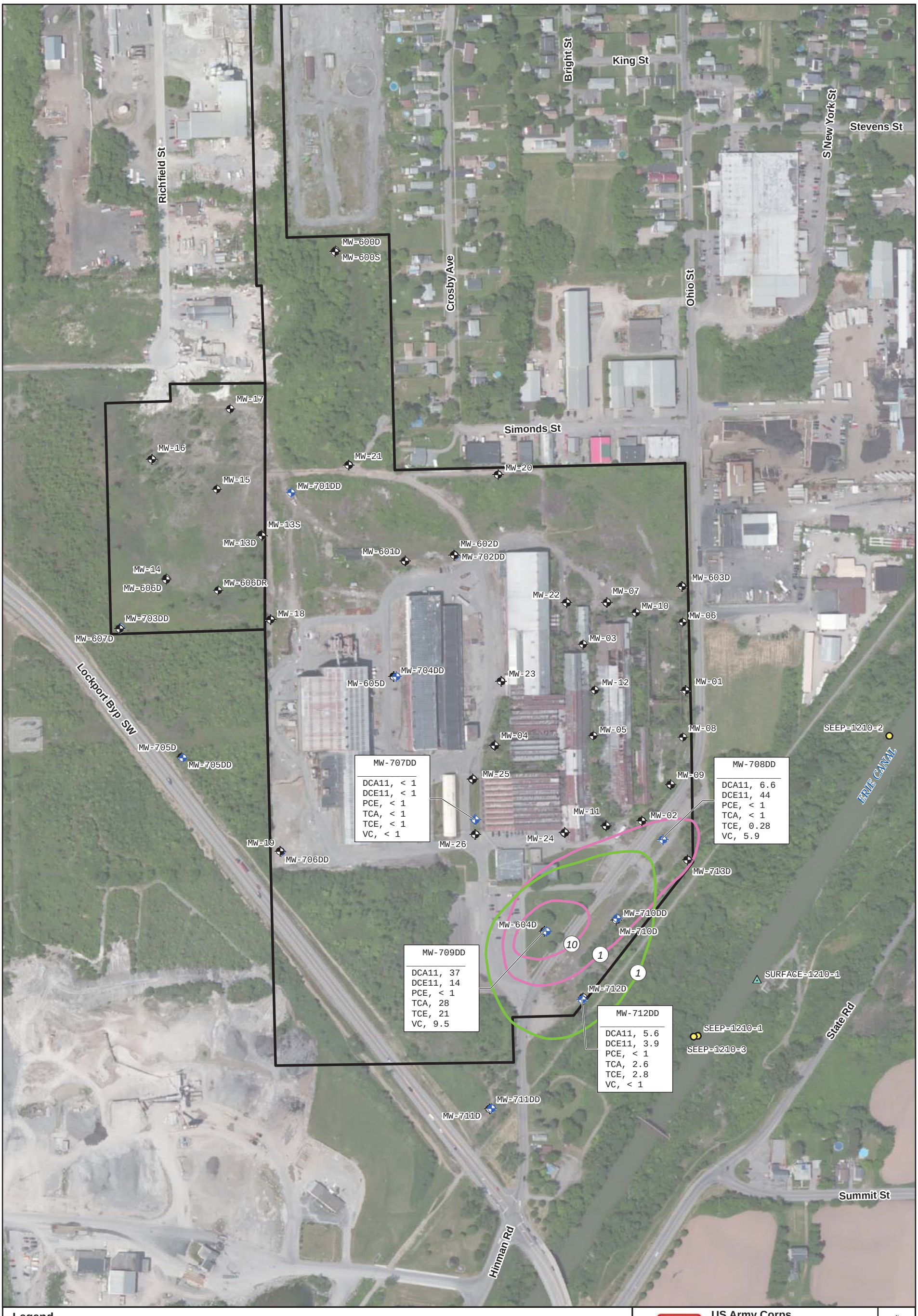
US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

VOCS IN DEEP GROUNDWATER (AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
8/07/2013	1 inch = 300 feet	3-6A

Document Path: K:\Guterl\GIS\ArcMap\Groundwater\2015\SS\Fig3-6A_0811DeepVOC.mxd Date: 5/8/2015 Time: 12:58:27 PM



Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Seep Sample Location
- Surface Water Sample Location
- TCE Concentration Contour
- VC Concentration Contour
- Site Boundary

0 75 150 300 Feet

Notes:
All concentrations reported in ug/l.
ug/l - Micrograms per Liter.
TCE - Trichloroethene
VC - Vinyl Chloride
VOCS - Volatile Organic Compounds

Location ID: MW-709DD
TCA, 28
Parameter / Concentration

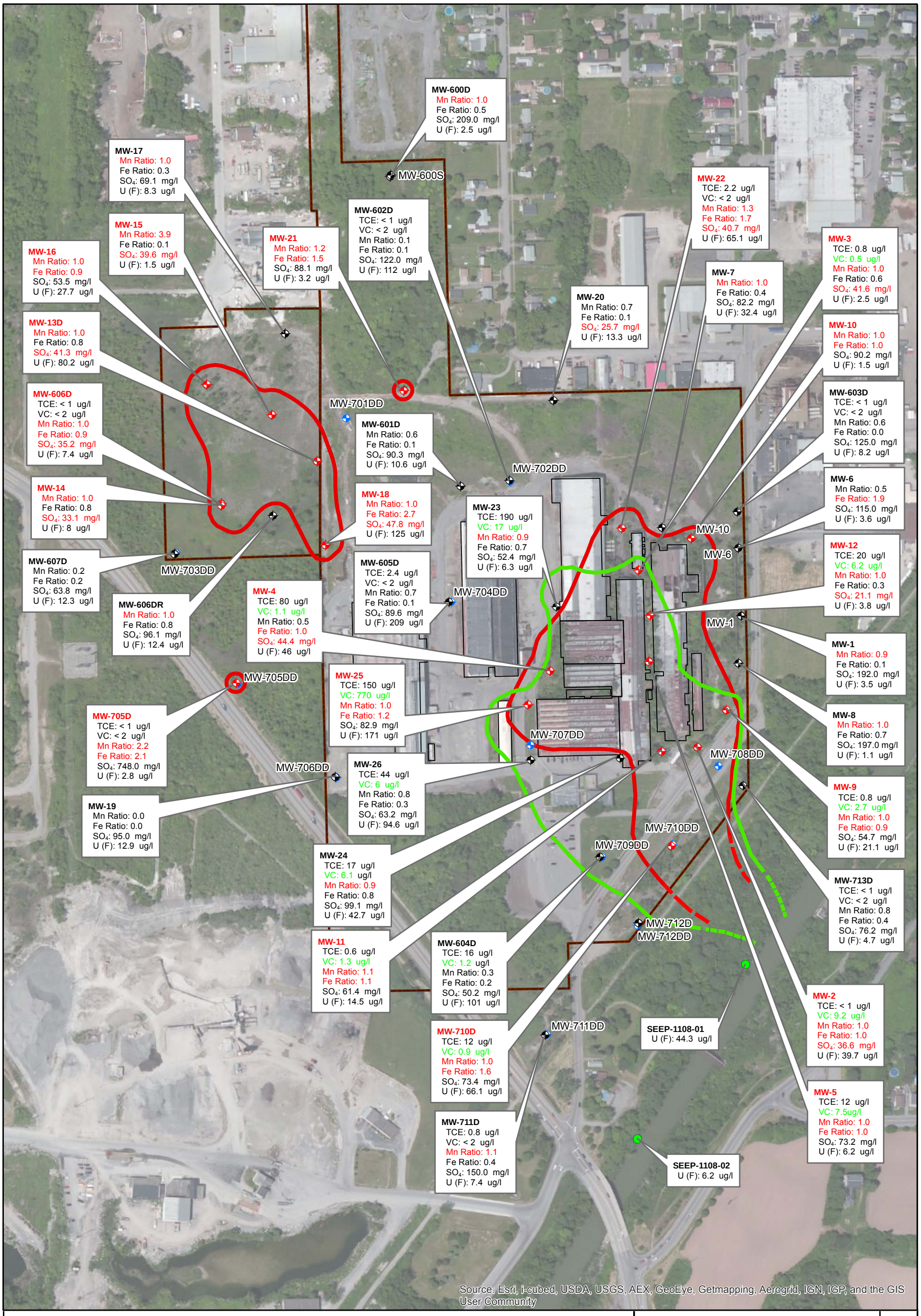
US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

VOCS IN DEEP GROUNDWATER (OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
8/07/2013	1 inch = 300 feet	3-6B

Document Path: K:\Guterl\GIS\ArcMap\Groundwater\2015\SS\Fig3-6B_1012DeepVOC.mxd Date: 3/10/2015 Time: 2:38:53 PM



Legend

- SHALLOW WELL LOCATION
- SHALLOW WELL WITH REDUCTIVE CONDITIONS
- DEEP WELL LOCATION
- SEEP LOCATION
- REDUCTIVE AREA EXTENT
- EXTENT OF DETECTED VC
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

µg/l = MICROGRAMS PER LITER
mg/L = MILLIGRAMS PER LITER
VC = VINYL CHLORIDE
Mn RATIO = MANGANESE FILTERED/UNFILTERED RATIO
Fe RATIO = IRON FILTERED/UNFILTERED RATIO
SULFATE AS SO_4
U (F) = TOTAL URANIUM FILTERED

NOTE: A RED HIGHLIGHTED VALUE INDICATES REDUCTIVE CONDTION (Fe RATIO ≥0.9, Mn RATIO ≥0.9 OR SO_4 ≤50 mg/L); MONITORING WELLS WITH TWO OR MORE INDICATORS OF REDUCTIVE CONDITION ARE INCLUDED IN THE REDUCTIVE AREA EXTENT. A GREEN HIGHLIGHTED VALUE INDICATES VINYL CHLORIDE DETECTION.

0 75 150 300 Feet

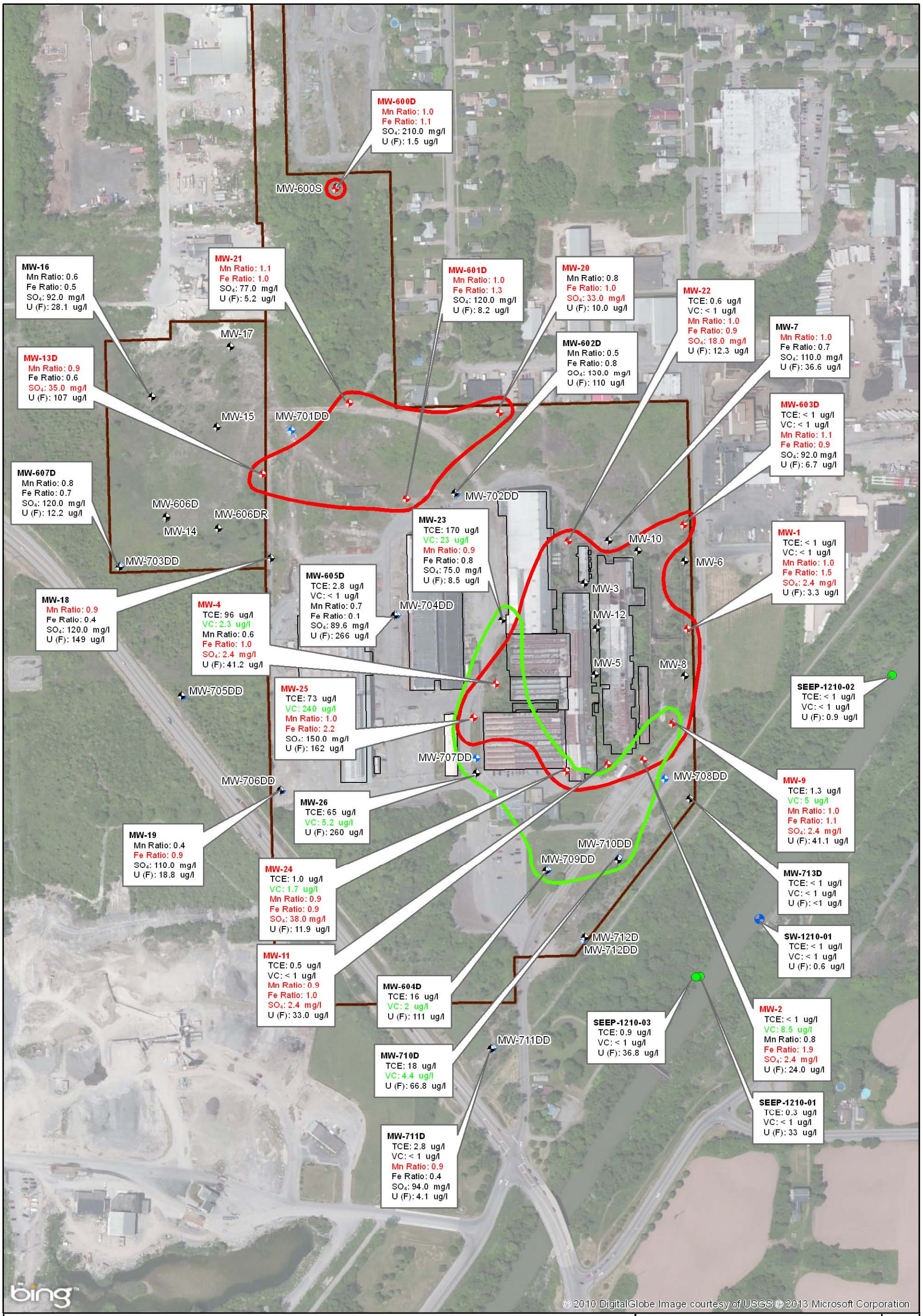
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

TCE, VC, MANGANESE, IRON, SULFATE, AND TOTAL URANIUM (FILTERED) IN SHALLOW GROUNDWATER (AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/27/2013	1 inch = 300 feet	3-7A

File Name: Guterl_163_GW_VOC_ReducAreas_2011_Shallow Date: 6/28/2013 Time: 8:50:15 AM



Legend

- SHALLOW WELL LOCATION
- SHALLOW WELL WITH REDUCTIVE CONDITIONS
- DEEP WELL LOCATION
- SEEP LOCATION
- REDUCTIVE AREA EXTENT
- EXTENT OF DETECTED VC
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

µg/l = MICROGRAMS PER LITER
mg/L = MILLIGRAMS PER LITER
VC = VINYL CHLORIDE
Mn RATIO = MANGANESE FILTERED/UNFILTERED RATIO
Fe RATIO = IRON FILTERED/UNFILTERED RATIO
SULFATE AS SO_4
U (F) = TOTAL URANIUM FILTERED

NOTE: A RED HIGHLIGHTED VALUE INDICATES REDUCTIVE CONDTION (Fe RATIO ≥0.9, Mn RATIO ≥0.9 OR SO_4 ≤50 mg/L); MONITORING WELLS WITH TWO OR MORE INDICATORS OF REDUCTIVE CONDITION ARE INCLUDED IN THE REDUCTIVE AREA EXTENT. A GREEN HIGHLIGHTED VALUE INDICATES VINYL CHLORIDE DETECTION.

0 75 150 300 Feet

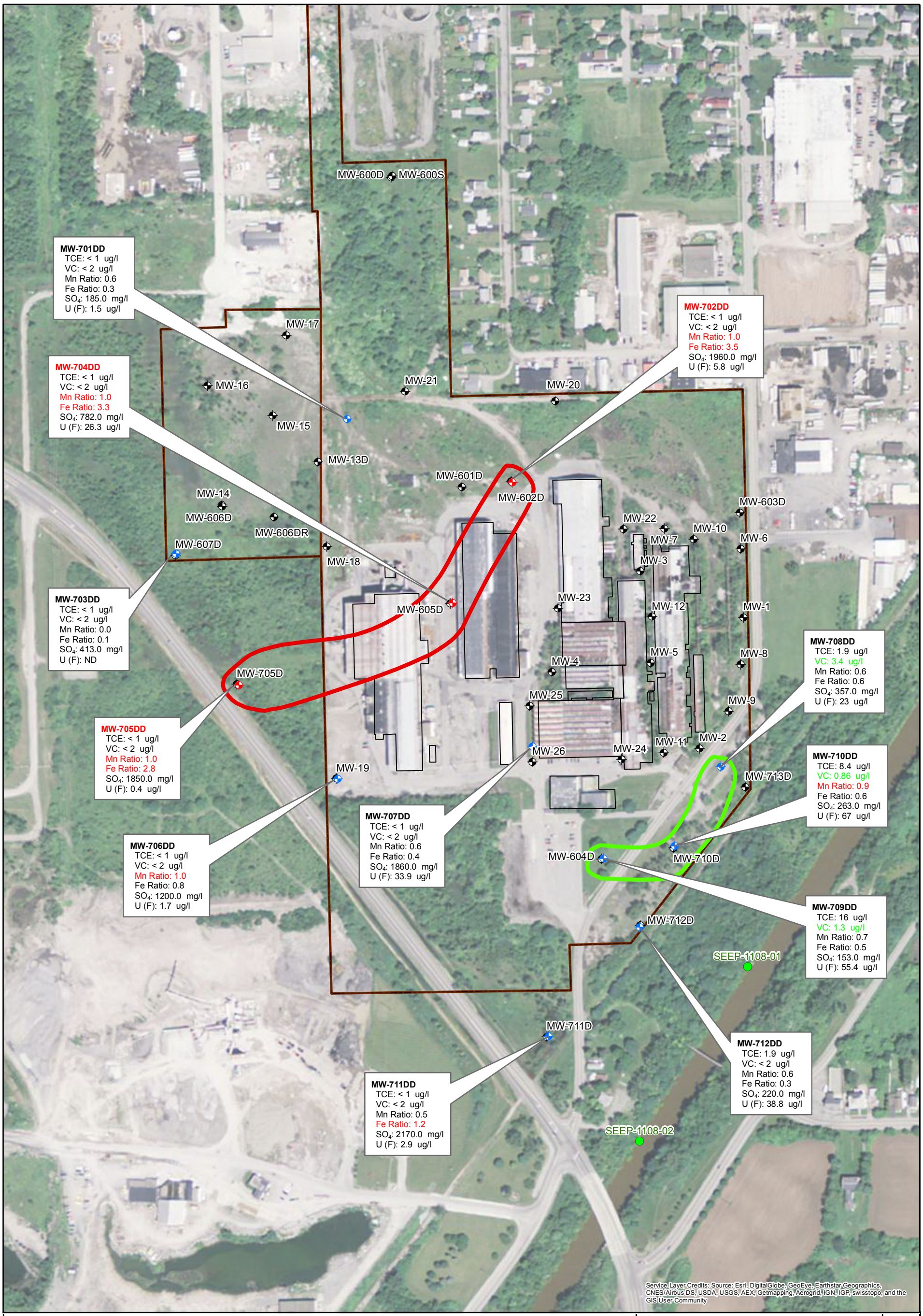
US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

TCE, VC, MANGANESE, IRON, SULFATE, AND TOTAL URANIUM (FILTERED) IN SHALLOW GROUNDWATER (OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/27/2013	1 inch = 300 feet	3-7B

File Name: Guterl_166_GW_VOC_ReducAreas_2012_Shallow Date: 6/28/2013 Time: 8:58:36 AM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- DEEP WELL WITH REDUCTIVE CONDITIONS
- SEEP LOCATION
- REDUCTIVE AREA EXTENT
- EXTENT OF DETECTED VC
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

µg/l = MICROGRAMS PER LITER
mg/L = MILLIGRAMS PER LITER
VC = VINYL CHLORIDE
Mn RATIO = MANGANESE FILTERED/UNFILTERED RATIO
Fe RATIO = IRON FILTERED/UNFILTERED RATIO
SULFATE AS SO_4
U (F) = TOTAL URANIUM FILTERED

0 75 150 300 Feet

NOTE: A RED HIGHLIGHTED VALUE INDICATES REDUCTIVE CONDTION (Fe RATIO ≥0.9, Mn RATIO ≥0.9 OR SO_4 ≤50 mg/L); MONITORING WELLS WITH TWO OR MORE INDICATORS OF REDUCTIVE CONDITION ARE INCLUDED IN THE REDUCTIVE AREA EXTENT. A GREEN HIGHLIGHTED VALUE INDICATES VINYL CHLORIDE DETECTION.

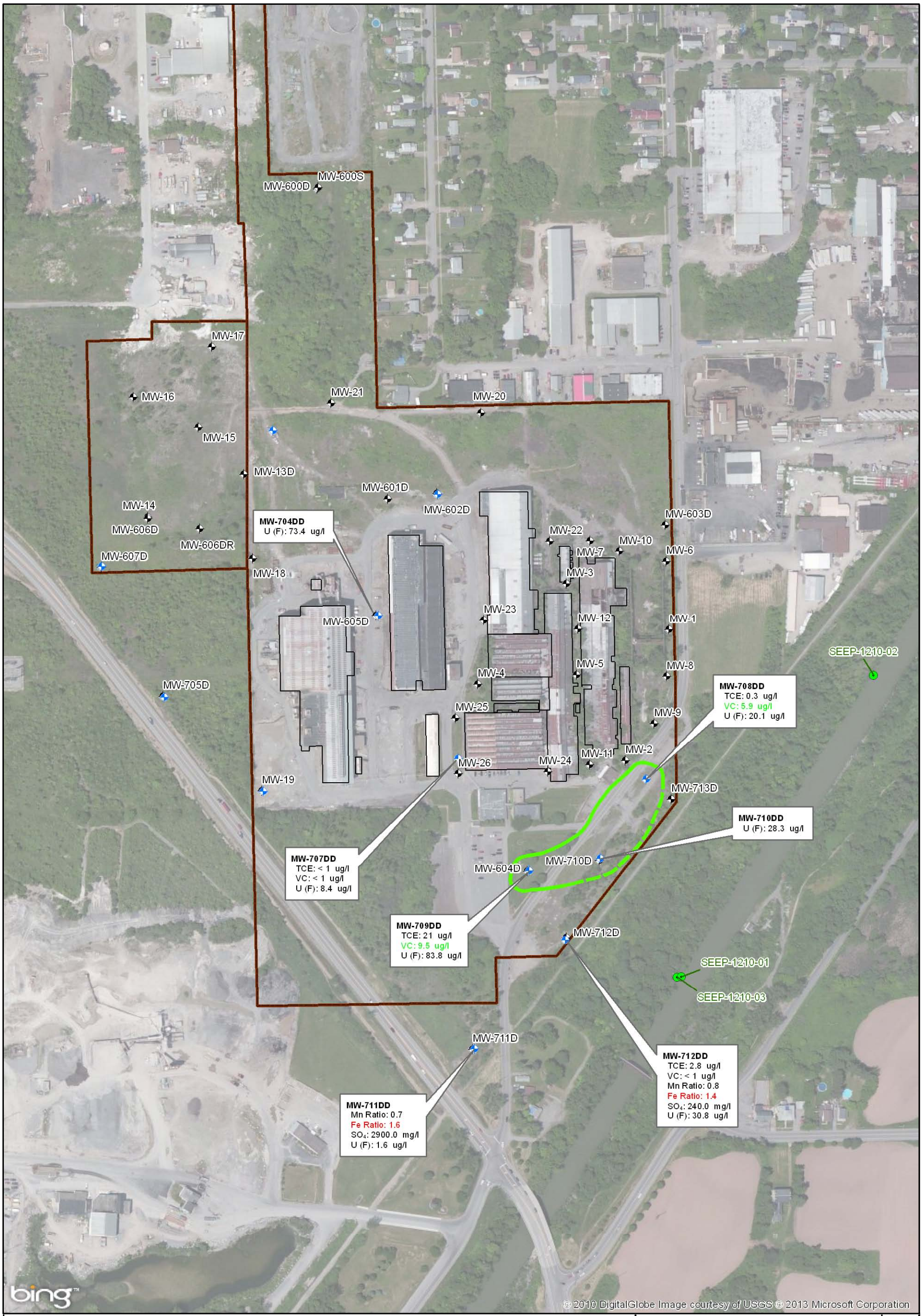
US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

TCE, VC, MANGANESE, IRON, SULFATE, AND TOTAL URANIUM (FILTERED) IN DEEP GROUNDWATER (AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/27/2013	1 inch = 300 feet	3-8A

User: mike.najar Path: G:\Guterl\140416\GIS_Documents\Project_Maps\July2015\Guterl_164_GW_VOC_ReducAreas_2011_Deep.mxd Date: 7/13/2015 Time: 10:13:21 AM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- EXTENT OF DETECTED VC
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS

µg/l = MICROGRAMS PER LITER
mg/L = MILLIGRAMS PER LITER
VC = VINYL CHLORIDE
Mn RATIO = MANGANESE FILTERED/UNFILTERED RATIO
Fe RATIO = IRON FILTERED/UNFILTERED RATIO
SULFATE AS SO_4
U (F) = TOTAL URANIUM FILTERED

NOTE: A RED HIGHLIGHTED VALUE INDICATES REDUCTIVE CONDTION (Fe RATIO ≥0.9, Mn RATIO ≥0.9 OR SO_4 ≤50 mg/L); MONITORING WELLS WITH TWO OR MORE INDICATORS OF REDUCTIVE CONDITION ARE INCLUDED IN THE REDUCTIVE AREA EXTENT. A GREEN HIGHLIGHTED VALUE INDICATES VINYL CHLORIDE DETECTION.

0 75 150 300 Feet

US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG ®

TCE, VC, MANGANESE, IRON, SULFATE, AND TOTAL URANIUM (FILTERED) IN DEEP GROUNDWATER (OCTOBER 2012)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/27/2013	1 inch = 300 feet	3-8B

File Name: Guterl_165_GW_VOC_ReducAreas_2012_Deep Date: 6/28/2013 Time: 8:56:01 AM

APPENDIX A

Daily Reports and Field Notes (Provided on CD)

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number __2_ Page 1 of _2__
DAILY LOG OF CONSTRUCTION	Date 6/14/11
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: Calm, slight breeze 55-70, mist to sunny

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No – PM Karl Van Keuren discussed charging overtime with Nothnagle drilling for extended work days. Rate is $30/hr per person – will be used on an as needed basis – completing almost finished well, etc. to help production rate. Will not go over 2hr/day for HS concerns since drillers drive about 1 hour/day. No affect to USACE – Shaw cost management of project.
-

Activities In Progress:

- Cleared utilities with Allvac Maintenance Supervisor, air knifed in new locations at 701, 703, and 709, and set casing at 701DD.
- Did location recon at 705, 710,711, 712, and 713. All appear reachable other than 713. No good access point and large amount of clearing involved.
- PM will call in offsite dig locations after finalized (onsite already called in).

Were there any Delays in Work Progress today?

- Yes, Reg Buri was delayed from clearing 701DD by staff meetings.
- Drillers didn't have acetate liners for split spoons.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- none

Safety Inspection / Safety Meetings:
- Tailgate, AHA, JSA, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- Drill rig and other equipment surveyed for radiological contamination,

ACTIVITY STAR/FINISH
- Started drilling today.

QC REQUIREMENTS

- - Need undisturbed geotech samples for Oak Ridge Lab leaching studies for U to GW, contactor to macro-core stratigraphy in unconsolidated, then push split-spoon with liner where Shaw wants geotech sample.

QA/QC PUNCH LIST
-none

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1700 (drillers and well installation)- no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
none

Contractor Certification : On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _061511__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/15/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: Calm, sunny 55-80 F

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:
- Soil sampling, setting and grouting 4" steel casings, begin bedrock coring.

Were there any Delays in Work Progress today?
- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately. Noise monitoring performed at rig during operations.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Sample soil, set and grout casings at 706 DD and 709 DD. Begin bedrock coring at 701 DD during early PM.

QC REQUIREMENTS
- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End – open

LABOR HOURS
Start 0700 - End 1630 (drillers and well installation)- no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification : On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date Kevin C. Cronin	Superintendent's Initials and Date

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _061611__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/16/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; sunny, 55-70, PM; becoming cloudy, rain showers after 1500.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:
- Utility clearance, continue/finish bedrock coring, set groundwater monitoring well.

Were there any Delays in Work Progress today?
- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Clear utilities at 702 DD and 711 D, DD. Continue coring at 701 DD, finish in PM at ~80' BGL.
- Plug back 701 DD corehole with bentonite to ~41' BGL, set 2" PVC screen from ~30' – 40'. Well construction documented separately.

QC REQUIREMENTS
- -None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End – open

LABOR HOURS
Start 0700 - End 1700 (drillers and well installation)- no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _061711__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/17/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly cloudy, slight breeze 65-70, PM; same, light showers

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
May have increased number of flush mounted roadboxes installed at Reg Buri's request due to plant traffic.

Activities In Progress:

- Began coring bedrock at 709 DD, suspended due to water coming back to surface; regrouted borehole with additional grout and will set over the weekend. Cleared 711 D, DD and began clearing 705 D, DD. Sampled soils at 704 DD and 707 DD and collected 3" splitspoon samples.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
-

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1400 (drillers)- no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification : On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _062011__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/20/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, slight breeze 65°-75° F, PM; Partly sunny, 80° F, breezy

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Restarted coring bedrock at 709 DD (suspended due to water coming back to surface 06/17/11; regrouted) Cored from ~10' – 80' BGL. Plugged back with bentonite chips to ~48' BGL – will hydrate overnight and begin well install 6/21/11 am. Cleared 710 D, DD. UFPO called in by Karl V. for 705, 708, 710 & 711 locations.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – no USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1630 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _062111__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/21/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, slight breeze 65°-75° F, PM; Mostly cloudy, 85° F, humid, breezy

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Cut 4" casing at 709 DD and installed 2" PVC monitoring well at ~ 41' bgl (well construction diagram completed). Started coring bedrock to ~10' bgl at 707 DD but was suspended due to water coming back to surface. Regrouted from surface to ~10'bgl. Moved to 706 DD to begin coring there but coring also suspended due to water coming back to surface. Regrouted from surface to ~10'bgl. Moved to 706 DD and cored from ~8' – 38' bgl. Cleared 703 DD and located 708 DD and 710 D, DD locations on east side of Ohio Street.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – no USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, forklift awareness/procedures, hot work permit for 709 DD casing cut down, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1600 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _062211__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/22/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, rain showers, light breeze 65°-75° F, PM; Mostly cloudy, 85° F, humid, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Continued coring at 706 DD and cored from ~38' – 50' bgl (10' extra to look for deeper fracture zone). Plugged back to ~41' with bentonite and installed monitoring well – documented separately. Move drilling rig back to 704 DD to continue coring begun 6/21/11. Cored to ~40' bgl and set well from ~29'-39' bgl after consultation with K. Van Keuren and V. Tandon. Will complete 6/23/11 am. Premier Locating at Allvac in pm to locate utilities for offsite locations.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected, however rain fell in the morning.

Verbal Instructions given by Government:
- None – no USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, hot work permit for 704 DD casing cut down, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1630 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _062311__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/23/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly sunny, light breeze 65°-75° F, PM; Mostly cloudy, 85° F, humid, breezy, rain showers after 1510, thunderstorms

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
Began using 8" temporary casing and running 6" tricone roller bit to approximately 10' bgl to adequately seat and grout 4" permanent casing in boreholes.

Activities In Progress:

- Soil sampled (Macrocore® and 3" ssp samples for geotech analysis) and ran 8" temporary casing and set and grouted 4" permanent casings at 702 DD, 711DD and 711 D. Moved coreboxes back to decon pad area.

Were there any Delays in Work Progress today?

- No, PM thunderstorm arrived after casing work was completed at 1530.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – no USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, hot work permit for 702 DD, 711 D, DD casings, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1545 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _062411__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/24/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, showers/rain/thunderstorm, breezy 65°F, PM; Mostly cloudy, 70° F, humid, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Drilled out grout from 4" casing at 702 DD and cored from 10' – 40' bgl. Installed 702 DD groundwater monitoring well (documented separately). Moved 702 DD coreboxes back to decon pad area. Cleared utilities at 708 DD and 710 D, DD.

Were there any Delays in Work Progress today?

- Yes; AM thunderstorm/heavy rain arrived after 0845 –lost ~45 minutes waiting for storms to pass.

General Comments:
- No elevated radiological readings detected however rain event during work.

Verbal Instructions given by Government:
- None – no USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End – open

LABOR HOURS
Start 0700 - End 1315 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR) DAILY LOG OF CONSTRUCTION	Report Number _062711__ Page 1 of _1__ Date 06/27/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, light breeze 65°-75° F, PM; Sunny, 80° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Soil sampled (Macrocore® and 3" ssp sample for geotechnical analysis) and ran 8" temporary casing and set and grouted 4" permanent casing at 708 DD. Collected Macrocore® soil samples and ran 8" temporary casing and set and grouted 4" permanent casings at 710D and 710 DD. Moved back to 707 DD to resume coring but had water leaking out around 4" casing again. Pulled 4" casing, drove 8" temporary casing and rollerbit (6") to ~10' bgl and grouted after installing ~11' length of 4" casing into borehole. Work on well completion at 702 DD location. (Driller has to leave early today for doctor's appt.).

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – Mark , Jeff Hall and Bill Fredricks (USACE personnel) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, hot work permit for 708 DD, 710 D, DD casings, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1600 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _062811__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/28/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, breezy 65°-75° F, PM; Mostly sunny, 85° F, humid, windy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
Flush mounted protective casing requested for well 708 DD instead of stickup casing. Possible that some restoration work will be needed on rutted lawn leading into 707 DD location (multiple moves on and off location due to leaking surface casing work).

Activities In Progress:

- Completed coring at 708 DD, cored from ~5' – 40' bgl and installed monitoring well – documented separately. Move CME 85 drilling rig back to 707 DD to continue coring begun 6/21/11. Cored to ~30' bgl. Will complete coring and well installation 6/29/11 am. Nothnagle brought CME 55LC ATV rig onsite this am, moved to 705 D, DD location.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, hot work permit for 708 DD casing cut down, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS

- - None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1545 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _062911__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/29/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, breezy 65° F, PM; Mostly sunny, 70° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
Possible that some restoration work will be needed on rutted lawn leading into 707 DD location (multiple moves on and off location due to leaking surface casing work, well drilling and installation).

Activities In Progress:

- Completed coring at 707 DD, cored from ~30' – 40' bgl and installed monitoring well – documented separately. Utilized CME 55LC ATV rig to set 4" casings at 705 D and 705 DD locations. Cored bedrock from ~7' – 32' at 710 DD with CME 85 rig.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, hot work permit for 707 DD casing cut down, 705 D and DD casings, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies. Noted grout overspray at 705 location on Daily Safety Inspection Report.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1545 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _063011__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 06/30/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm 65° F, PM; Sunny, 80° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Completed coring at 710 DD, cored from ~32' – 42' bgl and installed monitoring well – documented separately. Moved CME 85 to 703 DD location and soil sampled (Macrocore & 3" ssp) and set and grouted 4" casing to ~5' bgl. Utilized CME 55LC ATV rig to begin coring at 705 DD location but after 1st run (from ~5' – 10' bgl) in weathered bedrock 4" casing was leaking. Regrouted that casing (now called 705 D) and moved to other 4" casing (now called 705 DD) and cored bedrock from ~10' – 40' and installed monitoring well – documented separately.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, hot work permit for 703 DD casing cut down, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1630 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _070111__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/01/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm 70° F, PM; Sunny, 80° F, calm.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Resumed coring with CME 55LC at 705 D; cored from ~10' – 20' bgl and installed monitoring well – documented separately. Moved ATV rig to 703 DD location for the holiday weekend. Moved CME 85 rig to begin coring at 710 D location and cored bedrock from ~7' – 20' and installed monitoring well – documented separately.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies. Air sampling performed at 710 D location only as the generator's pull cord broke when starting sampling at 705 D in am. Hertz onsite at 1130 to replace pull cord. Sampling begun thereafter.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1215 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _070511__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/05/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm 75° F, PM; Partly to mostly sunny, 75°-80° F, calm.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Began coring with CME 85 at 711 DD; cored from ~7' – 40' bgl and installed monitoring well – documented separately. Moved to ATV rig parked at 703 DD location and begin coring. Cored bedrock from ~5' – 40' and installed monitoring well – documented separately.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies. Air sampling performed at 711 DD location but the generator would cut out at times – concluded it was from vapor lock from high temperature. After cooling down a short while, generator would start right back up.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1630 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR) DAILY LOG OF CONSTRUCTION	Report Number _070611__ Page 1 of _1__ Date 07/06/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy 70° F, PM; Cloudy with scattered showers, becoming sunny, humid, 80° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Began coring with CME 85 at 711 D; cored from ~7' – 20' bgl and installed monitoring well – documented separately. Worked on well pads at 711D and DD, 703 DD, and 702 DD. Began well development; developed 708 DD and 709 DD - documented separately.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies. Air sampling performed at 711 D location..

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011 at 701 DD, finished 07/06/11 at 711 D. No access granted for 712 or 713 clusters as of today.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 6/13/11
End - open

LABOR HOURS
Start 0700 - End 1545 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _070711__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/07/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy 70° F, PM; Mostly cloudy, humid, 80° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Continued well development; developed 710 D and 710 DD (both completed), 707 DD (drying out), 706 DD (drying out) and 704 DD (completed) - documented separately. Both Nothnagle drilling rigs were radiologically scanned out and released offsite. 706 DD and 707 DD will be revisited 07/08/11.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 06/14/2011 at 701 DD, finished 07/06/11. Well development began 07/06/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 06/13/11
End - open

LABOR HOURS
Start 0700 - End 1530 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage.

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _070811__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/08/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm 70° F. PM; Mostly sunny, becoming humid, 80° F, calm.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Continued well development; developed 707 DD (drying out), 706 DD (drying out), 711 D and DD (both drying out) and 705 D and DD (both drying out). These locations will be revisited 07/11/11.Trent Richards continues scanning bedrock cores begun 07/07/11 at the decon pad. Richards/Cronin/Legeza attended Shaw/USACE conference call in AM.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Well development began 07/06/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 06/13/11
End - open

LABOR HOURS
Start 0700 - End 1530 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage.

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _071111__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/11/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy 70° F. PM; Mostly sunny, humid, 85° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Continued well development; completed 701 DD and 703 DD – documented separately. Developed 702 DD (drying out), 706 DD (drying out), 711 D and DD (both drying out) and 705 D and DD (both drying out). Well 707 DD hadn't recharged much over the weekend and had little groundwater in it. These locations will be revisited 07/12/11.Trent Richards continues scanning bedrock cores begun 07/07/11 at the decon pad. Nothnagle personnel will not be onsite 7/12/11 due to a family funeral – Shaw personnel will continue development with Nothnagle's Whale pump.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Well development began 07/06/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 06/13/11
End - open

LABOR HOURS
Start 0700 - End 1530 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage.

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _071211__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/12/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy 75° F. PM; Sunny, humid, 85° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Continued well development; completed 706 DD – documented separately. Developed 702 DD (drying out), 711 D and DD (both drying out) and 705 D and DD (both drying out). Well 707 DD hadn't recharged much overnight and had little groundwater (<0.4 gal.) in it. These locations will be revisited 07/13/11.Trent Richards completed scanning bedrock cores, begun 07/07/11 and performed a release survey on the rented generator. Generator was returned to Hertz this am.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Well development began 07/06/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 06/13/11
End - open

LABOR HOURS
Start 0700 - End 1530 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage.

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _071311__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/13/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy 70° F. PM; Mostly sunny, 80° F, breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Continued well development. Developed 702 DD (drying out), 711 D and DD (both drying out) and 705 D and DD (both drying out). Well 707 DD hadn't recharged much overnight and groundwater elevation changed only ~0.12 foot. These locations will be revisited 07/14/11.Trent Richards completed release surveys on two high-vol air samplers which will be returned to Shaw's Findlay, Ohio shop.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies. Began bi-monthly Project Safety Inspection Report. Additional supplies ordered for office trailer.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Well development began 07/06/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 06/13/11
End - open

LABOR HOURS
Start 0700 - End 1430 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage.

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _071411__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/14/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm 70° F. PM; Sunny, 85° F, somewhat breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Continued well development. Developed 702 DD (drying out), 711 D and DD (both drying out) and 705 D and DD (both drying out). Well 707 DD hadn't recharged much overnight and groundwater elevation changed only ~0.04 foot from July 13, 2011am. These locations will be revisited 07/15/11. Attempted to locate 712 and 713 well locations on NYS Erie Canal parcel – looks improbable to clear/locate suitable drilling locations due to surface conditions (boulders, excavated rock piles and berms, steep slopes, narrow property dimensions).

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies. Completed bi-monthly Project Safety Inspection Report. Fire extinguisher purchased and installed in office trailer.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Well development began 07/06/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 06/13/11
End - open

LABOR HOURS
Start 0700 - End 1530 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage.

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _071511__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/15/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy 60° F. PM; Sunny, 85° F, somewhat breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Finished well development. Developed 702 DD (drying out), 711 D and DD (both drying out) and 705 D and DD (both drying out). Development task completed – documented separately. Well 707 DD hadn't recharged much overnight and groundwater elevation changed only ~0.11 foot from July 14, 2011am. Nothnagle's 250-gallon poly tank was cleaned out and radiologically scanned for release. Nothnagle transports 16 unused 55-gal. drums offsite (8 remain at decon pad for future use). 58 drums (all labeled) of IDW are at decon pad area.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Well development began 07/06/11 and was completed 07/15/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 06/13/11
End – 07/15/11 (Nothnagle Drilling to remobe late July – early August for drilling of 712 and 713 locations [2 wells each]).

LABOR HOURS
Start 0700 - End 1415 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage.

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _071811__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/18/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, breezy 60° F., rain showers. PM; Mostly sunny, 87° F, humid, somewhat breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Searched for City of Lockport Sanitary Sewer manholes to be sampled; unable to locate along Ohio Street and inside the eastern boundary of the Excised Area. Called Al Campisano (City of Lockport Water & Sewer) to assist in locating these structures. Staked 712 and 713 locations as per Karl VanKeuren's location map. UFPO request will be made when locations are approved by the USACE.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Located 713 D and DD but may need to move staked 712 locations northward to be on AllVac property.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _071911__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/19/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy 70° F., PM; Mostly sunny, 87° F, humid, somewhat breezy.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Met with Rolando Moreno, CE (City of Lockport Eng. Dept.) to determine locations of Sewer Sampling points. City personnel haven't been able to locate sample Location #2 in years (paved over?). Used metal detector to locate possible location in middle of Ohio St. Direction will be needed on how to proceed with this sample location.
- Restaked 712 and 713 locations to avoid property lines as per latest GPS location map received by Trent Richards. UFPO request will be made when locations are approved by the USACE.
- Trent Richards traveled to Nothnagle Drilling to perform additional scans requested by Jim Langsted on the 250-gallon poly tank that was cleaned out and radiologically scanned for release on July 15, 2011. Documented separately.
- Contacted TestAmerica to process sample bottle order and begin receiving bottles/coolers at the site.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Relocated 712 D and DD and 713 D and DD locations. Will confirm that staked locations fall on ATI/Allvac property. UFPO will be contacted to clear utilities when USACE approval is given.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _072011__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/20/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy, humid 75° F., PM; Sunny, 88° F, breezy, humid.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Reshot 708 DD, 712 and 713 proposed locations as latest GPS location map received by Trent Richards appears to be skewed. UFPO request will be made when locations are approved by the USACE.
- Contacted TestAmerica St. Louis to process sample bottle order and begin receiving bottles/coolers at the site.
- Investigated submersible pump and Teflon-lined tubing costs for upcoming groundwater sampling. Peristaltic pump received at Cooper Avenue office 07/19/11 and is onsite.
- Awaiting clarification on Sewer Sampling locations.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Shawn Andrews) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Reshot 712 D and DD and 713 D and DD locations with GPS handheld and sent coordinates to Cincinnati office for plotting in order to confirm that staked locations fall on ATI/Allvac property. UFPO will be contacted to clear utilities when USACE approval is given.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _072111__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/21/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy, humid 81° F., PM; Sunny, breezy, humid, 93° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- UFPO request called in for proposed 712D, DD and 713D, DD locations. Estimated start date is 07/27/11 (3 business days notice). UFPO Ticket expires 08/10/11.
- Conducted background radiation surveys in an upwind area covered by soil and vegetation and an area covered by crushed rock/gravel. Performed survey of adjoining former guard house for possible sample cooler storage area.
- Investigated submersible pump and Teflon-lined tubing costs for upcoming groundwater sampling.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Performed background radiation area surveys which was covered by soil and vegetation grasses and an area covered by crushed rock/gravel. Surveyed possible storage area inside former guard house adjacent to office trailer.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _072211__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/22/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm, humid 75° F., PM; Sunny, calm, humid, 93° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Richards/Cronin attended Shaw/USACE Guterl PDT Bi-weekly Status Call in AM.
- Investigated Sanitary Sewer line (15") that crosses undeveloped Newfane Lumber parcel for upcoming sampling. Spoke with Paul Henning (?) – owner, who located southwest manhole. Northeast sewer manhole is under Newfane Lumber parking lot pavement. City of Lockport Engineering Department (Rolando Moreno) was contacted to get sewer construction specifics; awaiting callback. Spoke with Norm Baker regarding water lines.
- Called Nothnagle Drilling regarding remobe to site for 712D, DD and 713D drilling, awaiting callback with date.
- First shipment of sample bottles (6 boxes) and coolers (23) received from TestAmerica, more expected next week. All brought on site.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Begin storing sample supplies onsite.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _072511__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/25/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, calm, occasional rain showers and thunderstorms, humid 70° F., PM; Mostly sunny, breezy, humid, 83° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- City of Lockport Engineering Department (Rolando Moreno) was contacted to coordinate sewer sampling with City personnel. Sampling scheduled for Wednesday July 27, 2011 at 1330. Four gas meter ordered from Pine Environmental.
- Reviewed Nothnagle Drilling invoice for tasks completed to date.
- Inventoried shipment of sample bottles and coolers received from TestAmerica. Determined bottle needs for sewer sampling task later this week. Ordered sixty 45 µm in-line filters for upcoming groundwater sampling task. Verified that no QC samples are required to be collected during this task.

Were there any Delays in Work Progress today?

- No

General Comments:
- No radiological readings detected. All instruments were sourced checked.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Begin storing sample supplies onsite.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _072611__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/26/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly sunny, breezy, 70° F., PM; Sunny, breezy, 83° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Four gas meter received from Pine Environmental for sewer sampling. Purchased sampling equipment (extendable pole, disposable plastic cups, longer gloves).
- Prepared electronic copy of TestAmerica Chain-of-Custody to be used during sampling. Called TestAmerica Amherst to arrange courier service for collected samples. Worked on Master sampling list to track progress of site-wide sampling effort.
- Prepared sample bottles, labels and COC for groundwater and sewer sampling tasks 07/27/11.
- Cronin/Richards attend Guterl Team Meeting conference call.
- Perform well survey to locate existing wells and check on tubing in them. Unable to locate several wells.

Were there any Delays in Work Progress today?

- No

General Comments:
- No radiological readings detected. All instruments were sourced checked.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Begin storing sample supplies onsite.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _072711__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/27/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, slightly breezy, 70° F., PM; Mostly sunny, breezy, 81° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Prepared for City of Lockport Sewer Sampling task (calibrated PID and 4-gas meter), met with City engineering personnel and collected Sewer Location #1 (Clark Rigging property) and Sewer Location #2 (Newfane Lumber property) samples. Radiologic release procedure being performed on bottles and cooler prior to pick up. Called TestAmerica Amherst to arrange courier service for collected samples. Samples to be released August 1, 2011 for transport.
- Picked up Grunfos submersible pump and tubing from Shaw office.
- Finalized sample cooler release procedure to utilize locale TestAmerica's courier service for sample shipping.

Were there any Delays in Work Progress today?

- No

General Comments:
- No radiological readings detected. All instruments were sourced checked.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza) onsite today.

Safety Inspection / Safety Meetings:
- Daily Tailgate/Safety Meeting/ Training Log; documented separately. Performed biweekly Project Safety Inspection Report, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Begin and finish City of Lockport Sanitary Sewer sampling. Store samples onsite to perform radiologic releaseprior to shipping.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – None
End –

LABOR HOURS
- No Shaw hourly.

EQUIPMENT HOURS
-None

ACCIDENT REPORTING
-None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _072811__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 07/28/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, showers, calm 75° F, PM; Cloudy, 80° F, calm, humid.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Nothnagle Drilling remobes to site for 712 D, DD and 713 D well drilling. T. Richards performs rad surveys of the CME 85 drilling rig and the 712 and 713 drilling locations. Nothnagle hand clears all drilling locations. Work on setting 4" casings at all 3 locations; 4" casing set at ~7' bgl at 713 D, ~5' bgl at both 712 D and DD.
- Performed release survey of Sanitary Sewer sample bottles and cooler for later shipping.
- Purchased tools and fittings for Grunfos Redi-Flo 2 submersible pump and tubing.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Mark Legeza, Steven Curry, Lindsey Bartolomei) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 07/28/2011.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 07/28/11
End - open

LABOR HOURS
Start 0745 - End 1200 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR) DAILY LOG OF CONSTRUCTION	Report Number _072911__ Page 1 of _1__ Date 07/29/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, rain showers – heavy at times, calm 75° F, PM; Cloudy, 82° F, calm, humid.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Nothnagle Drilling cores bedrock from ~7' to 20' bgl at 713 D and installs 2" PVC well – documented separately. Move to 712 DD and core bedrock from ~5' to 40' bgl and install 2" PVC well – documented separately.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected. Approximately 30 minutes standby time in AM due to thunderstorm in area.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 07/28/2011.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 07/28/11
End - open

LABOR HOURS
Start 0745 - End 1245 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _080111__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 08/01/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm 75° F, PM; Cloudy, 82° F, calm, humid.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Nothnagle Drilling finishes well installation at 712 DD then cores bedrock from ~5' to 20' bgl at 712 D and installs 2" PVC well – documented separately. Well pads installed at 712 D, 712 DD and 713 D. All wells (17) have now been installed.
- Begin/complete development at 713 D – documented separately.
- Begin/complete development at 712 DD – documented separately.
- Sewer sample locations #1 and #2 were shipped off today to TestAmerica St. Louis via TestAmerica courier.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate, rig inspection, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Rig safety and radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 07/28/2011.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 07/28/11
End - open

LABOR HOURS
Start 0745 - End 1530 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _080211__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 08/02/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, calm 75° F, PM; Mostly sunny, 84° F, calm, humid.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No

Activities In Progress:

- Determined screened interval of 712 D was presently dry when setting up to begin development at – documented separately.
- Performed Exit Survey on Nothnagle drilling rig – documented separately. Nothnagle offsite at 1030.
- 61 drums of IDW at decon area, 8 empty drums available to contain sampling purge water.
- Worked on groundwater sampling strategy and scheduling.

Were there any Delays in Work Progress today?

- No

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None

ACTIVITY START/FINISH
- Drilling began 07/28/2011. Finish 08/01/11. Development began 08/01/11, ended 08/02/11.

QC REQUIREMENTS
- None

QA/QC PUNCH LIST
-None

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
Start – 07/28/11
End – 08/02/11

LABOR HOURS
Start 0700 – End 1030 (drillers) - no Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid for well footage. .

ACCIDENT REPORTING
None

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _080311__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 08/03/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, rain showers, calm 73° F, humid. PM; Cloudy, 84° F, slightly breezy, late PM rain showers, humid.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Worked on groundwater sampling strategy and scheduling.
- Completed a round of groundwater level readings (53 wells) across the site – documented separately.

Were there any Delays in Work Progress today?
No.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater level measurement task began and finished 08/03/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
-None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
-None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
-None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _080511__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 08/05/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly sunny, calm 68° F. PM; Partly sunny, 85° F, slightly breezy, humid.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-603 D, MW-22 (first MS/MSD collected here), and MW-18 – documented separately. Samples handed off to TestAmerica Buffalo courier in PM for Saturday delivery. Confirmed receipt of groundwater samples collected 08/04/11 at TestAmerica St. Louis.
- Assemble sampling supplies for scheduled Erie Canal Seep Sampling task and groundwater sampling Monday 08/08/11.
- Cronin/Richards attended USACE PDT conference call.

Were there any Delays in Work Progress today?
No.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Shawn Andrews, Lindsey Bartolomei) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
-None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
-None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
-None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _080811__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 08/08/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, calm 72° F, humid. PM; *Partly sunny, 85° F, slightly breezy, humid.*

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-08, MW-09 and MW-11 – documented separately. Samples handed off to TestAmerica Buffalo courier in PM for Tuesday delivery to TestAmerica St. Louis..
- Two Seep samples (Seep 01 & Seep 02) collected along the bedrock faces of the Erie Canal by USACE and Shaw (Vikas Tandon) personnel. These samples shipped along with today's groundwater samples.

Were there any Delays in Work Progress today?
No.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Jeff King, Bill Frederick, Dennis Reimer, and Lindsey Bartolomei) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
-None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
-None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
-None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR) DAILY LOG OF CONSTRUCTION	Report Number _080911__ Page 1 of _1__ Date 08/09/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, rain showers throughout AM, calm 70° F, humid. PM; Cloudy, scattered rain showers, calm 75° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-705 D, MW-705 DD and MW-711 D – documented separately. Samples handed off to TestAmerica Buffalo courier in PM for Wednesday delivery to TestAmerica St. Louis. Had difficulty purging groundwater with larger diameter silicone tubing, ordered replacement tubing from Shaw Electronics.
- Vikas Tandon onsite to inspect rock cores.

Were there any Delays in Work Progress today?
No.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
-None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
-None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
-None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR) DAILY LOG OF CONSTRUCTION	Report Number _081011__ Page 1 of _1__ Date 08/10/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly cloudy becoming mostly sunny, breezy 72° F. PM; Mostly sunny, breezy, 77° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-604 D, MW-605 D, MW-704 DD MW-709 DD, and MW-26 – documented separately. Collected duplicates at MW-605 D and MW-704 DD. Samples handed off to TestAmerica Buffalo courier in PM for Thursday delivery to TestAmerica St. Louis. Collected NYSDEC split samples at MW-604 D, MW-605 D, MW-704 DD and MW-26 – USACE to handle shipment to NYSDEC.
- Mc Intosh Surveyors onsite to survey in new well locations and elevations. Provided Rad support for their activities.

Were there any Delays in Work Progress today?
No.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today. No NYSDEC personnel onsite today for sampling.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
-None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
-None.

LABOR HOURS
-Mc Intosh Surveyors (0815 – 1535). No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
-None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL Report (QCR)	Report Number _081111__ Page 1 of _1__
DAILY LOG OF CONSTRUCTION	Date 08/11/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly sunny, breezy 72° F. PM; Mostly sunny, breezy, 76° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-602 D, MW-702 DD, MW-708 DD, and MW-13D – documented separately. Collected duplicate sample at MW-708 DD. Samples handed off to TestAmerica Buffalo courier in PM for Friday delivery to TestAmerica St. Louis. Collected 3 remaining NYSDEC split samples at MW-602 D, MW-708 DD and MW-13D – handed seven 1-gallon plastic jugs to NYSDEC personnel (John Mitchell) – documented separately.

Were there any Delays in Work Progress today?
No.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today. NYSDEC personnel (John Mitchell) onsite today for sampling.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011. Well surveying completed 08/10/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
-None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
-None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
-None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _081211__ Page 1 of _1__ Date 08/12/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly sunny, calm, 72° F. PM; Mostly sunny becoming cloudy, breezy, humid, occasional showers, 76° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-25, MW-06, MW-07, and MW-10 – documented separately. Collected fourth duplicate sample at MW-25. Samples handed off to TestAmerica Buffalo courier in PM for Saturday delivery to TestAmerica St. Louis.

Were there any Delays in Work Progress today?
No.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE personnel (Shawn Andrews) onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
-None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
-None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
-None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _081511__ Page 1 of _1__ Date 08/15/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, breezy, 72° F. PM; Mostly cloudy becoming partly sunny, breezy, humid, 76° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-706 DD, MW-710 D, and MW-711 DD – documented separately. Could not fill full bottle set at MW-711 DD due to slow recharge at depth. Will continue to collect groundwater at that location tomorrow. Samples handed off to TestAmerica Buffalo courier in PM for Tuesday delivery to TestAmerica St. Louis.
- Set up Grunfos Redi-Flo 2 submersible pump at MW-710 DD but keep getting 'ground fault' message at controller unit. Consult with Pine Environmental – likely an electrical short in the pump cable. Replacement pump unit being delivered 08/16 am to the Lockport Comfort Inn.

Were there any Delays in Work Progress today?
-Yes, issues with the Grunfos submersible pump.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _081611__ Page 1 of _1__ Date 08/16/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Clear, slightly breezy, 68° F. PM; Sunny, slightly breezy, 83° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Continued groundwater sampling task. Collected samples at MW-606 D, MW-14, MW606 DR, MW-15 and MW-17 – documented separately. Completed sampling at MW-711 DD using disposable bailer to collect remaining unfiltered and filtered metal samples. Samples handed off to TestAmerica Buffalo courier in PM for Wednesday delivery to TestAmerica St. Louis.
- Packaged geotechnical soil samples collected in acetate tubes during earlier drilling operations. Samples handed off to TestAmerica Buffalo courier in PM for shipment to Shaw Knoxville, TN office – documented separately.

Were there any Delays in Work Progress today?
- None..

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _081711__ Page 1 of _1__ Date 08/17/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Clear, slightly breezy, 69° F. PM; Sunny, slightly breezy, 84° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Continued groundwater sampling task. Attempted to use replacement Grunfos pump but had problem with Hertz generator's GFCI tripping repeatedly. Called Pine Environmental (Mattydale, NY and New Jersey offices) to discuss problem. They suggest using a different generator as voltage range produced might be too much for controller. Drive to Hertz to try another generator with pump but it too trips GFCI. Consult with Karl V. Make arrangements with Pine to meet in Rochester, NY area to get Honda generator from them and to test pump(s). Drive to and from Victor, NY to get a new controller and Honda EU 2000i generator.
- Purged MW-707 DD using disposable bailer to collect ~ 6' of groundwater. Well dried out. Will check Thursday to see if any groundwater can be sampled. No samples collected today so noTestAmerica Buffalo courier needed.
- Cut/cleared vegetation to create a path to MW-600 cluster along northern site boundary.

Were there any Delays in Work Progress today?
- Grunfos pump/controller issues, replacement.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Groundwater sampling task began 08/04/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION		Report Number _082611__ Page 1 of _1__ Date 08/26/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site		Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly cloudy, calm, 67° F. PM; Partly sunny, breezy, 78° F.	

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Continued hydraulic conductivity testing at MW-710 D (Solid PVC slug; falling and rising head tests) along with MW-710 DD offset testing, and at MW-709 DD (Pneumatic slug assembly; rising test) along with MW-604 D offset testing, Set up to perform testing, at MW-706 DD (Pneumatic slug assembly) along with MW-19 offset testing, but found we could not build up pressure in MW-706 DD. Found sand from the annular space between 4" protective casing and 2" PVC riser pipe was being blown out the casing's weep hole, suggesting either a split in the riser pipe or a loose joint. Riser connections appear to be tight. A Solid PVC slug test will be run on this well next Monday.
- Received groundwater sampling filters from Pine Environmental for future sampling events.

Were there any Delays in Work Progress today?
- None.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance, no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Hydraulic Conductivity testing begun 08/24/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _082911__ Page 1 of _1__ Date 08/29/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly sunny, calm, 60° F. PM; Mostly sunny, breezy, 79° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Continued hydraulic conductivity testing at MW-706 DD (Solid PVC slug; falling and rising head tests) along with MW-19 offset testing, at MW-711 DD and MW-711D (Pneumatic slug assembly; rising head tests) along with offset testing, and at MW-705 D and MW-705 DD (Pneumatic slug assembly; rising head tests) along with offset testing. Testing at MW-701 DD, MW-702 DD, MW-703 DD and MW-704 DD remain to be performed.
- Took IDW drum inventory.

Were there any Delays in Work Progress today?
- None.

General Comments:
- No radiological readings taken; just source checks performed.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- No deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Hydraulic Conductivity testing begun 08/24/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _083011__ Page 1 of _1__ Date 08/30/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy, 66° F. PM; Mostly sunny, breezy, 78° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Continued hydraulic conductivity testing at MW-703 DD (Pneumatic slug assembly; rising head tests) along with MW-607 D offset testing, at MW-701 DD (Pneumatic slug assembly; rising head tests), at MW-702 DD along with MW-602 D offset testing, and at MW-704 DD (Pneumatic slug assembly; rising head tests) along with MW - 605 D offset testing. Hydraulic conductivity testing is completed.
- Ordered non-aqueous IDW bottle set from TestAmerica Buffalo, will pick up in late PM.

Were there any Delays in Work Progress today?
- None.

General Comments:
- No radiological readings taken; just source checks performed.

Verbal Instructions given by Government:
- None – USACE (Mark Legeza) personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- No deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Hydraulic Conductivity testing begun 08/24/2011, finished 08/30/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _083111__ Page 1 of _1__ Date 08/31/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, breezy, 65° F. PM; Mostly sunny, breezy, 82° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Collected aqueous and non-aqueous IDW samples from drummed waste for disposal analysis.
- Collected final groundwater samples (filtered Total Uranium, filtered and unfiltered TAL metals) from MW-707 DD. Samples handed off to TestAmerica Buffalo courier in late PM for Thursday delivery to TestAmerica St. Louis. Sent empty coolers and unused bottles back to TestAmerica.
- Performed out-of-scope hydraulic conductivity testing at MW-705 D and MW-705 DD (solid PVC slug testing), only performed falling head tests due to the extremely slow recharge rate observed at both wells. Test ended at MW-705 DD due to Troll running out of memory. Plan to perform falling head tests at MW-702 DD and MW -711 DD as time allows.

Were there any Delays in Work Progress today?
- None.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – USACE (Mark Legeza) personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance; no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Hydraulic Conductivity testing begun 08/24/2011, finished 08/30/2011. Out-of-scope K testing started 08/31/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Gorin	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _090111__ Page 1 of _1__ Date 09/01/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly cloudy becoming mostly sunny, breezy, 68° F. PM; Mostly sunny, breezy, humid, 82° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Performed out-of-scope hydraulic conductivity testing at MW-702 DD and MW-711 DD (solid PVC slug testing), only performed falling head tests due to the extremely slow recharge rate observed at both wells.
- Began emptying office trailer and moving remaining materials and supplies to adjacent old Guard House for future site activities. Drive material to Tonawanda office and return to site with remaining tyvek to store onsite.
- Performed radiological release surveys on peristaltic pump, PID, and hydraulic conductivity equipment for return to Electronics Shop. Filled out dispatch forms and returned equipment to Findlay, Ohio office via UPS.

Were there any Delays in Work Progress today?
- None.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately. Completed Project Safety Inspection Report, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance; no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Hydraulic Conductivity testing begun 08/24/2011, finished 08/30/2011. Out-of-scope K testing begun 08/31/2011, finished 09/01/11.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _090211__ Page 1 of _1__ Date 09/02/2011
PROJECT: Data Gap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly sunny, breezy, humid, 68° F. PM; Mostly sunny, breezy, humid, 82° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Cronin/Richards attend bi-weekly PDT telecon.
- Finished emptying office trailer and moving remaining materials and supplies to adjacent old Guard House for future site activities. Ferguson Electric onsite at 0830 to disconnect electrical service; ask him to wait ~1/2 hour so Trent Richards can finish counting release smears. Drive material to Tonawanda office and return to site after returning pickup truck to Hertz.
- Performed radiological release surveys on rental truck and office trailer (interior and exterior), and equipment for return to Electronics Shop. Filled out dispatch forms and returned equipment to Findlay, Ohio office via UPS.
- Site keys returned to USACE personnel (M. Legeza) at guard house.

Were there any Delays in Work Progress today?
- None.

General Comments:
- No elevated radiological readings detected.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- Radiological clearance; no deficiencies.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Completed demobe activities 08/31/2011, finished 09/02/2011.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
Equipment hours included in bid.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _013012__ Page 1 of _1__ Date 01/30/2012
PROJECT: Datagap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Mostly Cloudy, windy, light snow, 28° F. PM; Mostly sunny, windy, 29° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:
- Cronin/Smith onsite to download data from Level Trolls and Troll 9500 Water Quality Instruments installed in 10 wells November 2, 2011. Downloaded water quality parameters and level data using Win-Situ 4 & 5 programs respectively onto Cronin's laptop.
- Began 2012 quarterly groundwater sampling task; purged and sampled MW-708DD, MW-710D, MW-710DD, and MW-713D for Total U and Isotopic U (Total and Filtered).

Were there any Delays in Work Progress today?
- None.

General Comments:
- None.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- None.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Downloaded collected date from Level Trolls and Troll 9500s. Began 2012 1st Quarter Groundwater Sampling Task.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
- None.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION		Report Number _013112__ Page 1 of _1__ Date 01/31/2012
PROJECT: Datagap Investigation, Former Guterl Steel FUSRAP Site		Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Sunny, windy, 43° F. PM; Mostly sunny, windy, 47° F.	

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:
- Cronin/Smith calibrate Troll 9500 Water Quality Instruments (MW-708DD, MW-710D, MW-710DD, and MW-713D) and reinstall into monitoring wells.
- Cronin/Smith onsite to download data from remaining six Level Trolls and Troll 9500 Water Quality Instruments. Downloaded water quality parameters and level data using Win-Situ 4 & 5 programs respectively onto Cronin's laptop. Calibrate the Troll 9500s.

Were there any Delays in Work Progress today?
- None.

General Comments:
- None.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- None.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Downloaded collected date from Level Trolls and Troll 9500s. Continue calibration of Trolls 9500s.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
- None.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION		Report Number _020112__ Page 1 of _1__ Date 02/01/2012
PROJECT: Datagap Investigation, Former Guterl Steel FUSRAP Site		Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, windy, 40° F. PM; Cloudy, windy, 40° F.	
QC NARRATIVES **Did anything develop that may lead to a Change Order/Claim?** - No.		
Activities In Progress: • Continued 2012 1st Quarter Groundwater Sampling task; purged and sampled MW-26, MW-604D, MW-605D (Duplicate sample A04BMW9006 collected at this well), MW-704DD (MS/MSD collected at this well), MW-707DD, and MW-709DD for Total U and Isotopic U (Total and Filtered).		
Were there any Delays in Work Progress today? - None.		
General Comments: - None.		
Verbal Instructions given by Government: - None – No USACE personnel onsite today.		
Safety Inspection / Safety Meetings: - Tailgate meeting, documented separately.		
Safety: (Inspections Made, Deficiencies noted): - None.		
PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice) - None.		
ACTIVITY START/FINISH - Completed 2012 1st Quarter Groundwater Sampling Task.		
QC REQUIREMENTS - None.		
QA/QC PUNCH LIST - None.		
CONTRACTORS ON SITE (Report subcontractor's first and last day on site) - None.		
LABOR HOURS -No Shaw hourly.		
EQUIPMENT HOURS - None.		
ACCIDENT REPORTING - None.		
Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.		
QC Representative's Signature and Date 	Superintendent's Initials and Date	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION		Report Number _020212__ Page 1 of _1__ Date 02/02/2012
PROJECT: Datagap Investigation, Former Guterl Steel FUSRAP Site		Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	Weather: AM; Cloudy, light snow, 30° F.	
QC NARRATIVES **Did anything develop that may lead to a Change Order/Claim?** - No.		
Activities In Progress: • Reinstalled recalibrated Troll 9500s into MW-26, MW-604D, MW-605D, MW-704DD, MW-707DD, and MW-709DD. Return to office to decon and ship back equipment to Shaw Findlay office and Pine Environmental. Download photos.		
Were there any Delays in Work Progress today? - None.		
General Comments: - One drum of purged groundwater generated. Drum is staged outside old guard station building and has been labeled.		
Verbal Instructions given by Government: - None – No USACE personnel onsite today.		
Safety Inspection / Safety Meetings: - Tailgate meeting, documented separately.		
Safety: (Inspections Made, Deficiencies noted): - None.		
PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice) - None.		
ACTIVITY START/FINISH - Completed 2012 1st Quarter Groundwater Sampling Task.		
QC REQUIREMENTS - None.		
QA/QC PUNCH LIST - None.		
CONTRACTORS ON SITE (Report subcontractor's first and last day on site) - None.		
LABOR HOURS -No Shaw hourly.		
EQUIPMENT HOURS - None.		
ACCIDENT REPORTING - None.		
Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.		
QC Representative's Signature and Date 	Superintendent's Initials and Date	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _050312__ Page 1 of _1__ Date 05/03/2012
PROJECT: Datagap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	***Weather: AM; Mostly Clear, windy, 50° F. PM; Mostly sunny, windy, 75° F.***

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:
- Began 2012 second quarterly groundwater sampling task; purged and sampled MW-605D (duplicate sample DUP-01collected at this well), MW-704DD, MW-708DD, MW-710D, MW-710DD, and MW-713D for Total U and Isotopic U (Total and Filtered).

Were there any Delays in Work Progress today?
- None.

General Comments:
- None.

Verbal Instructions given by Government:
- None – USACE personnel (Sheila Hint & Mark Legeza) visit site today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- None.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Began 2012 - 2nd Quarter Groundwater Sampling Task.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
- None.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Crain	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _050412__ Page 1 of _1__ Date 05/04/2012
PROJECT: Datagap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	**Weather: AM; Cloudy, windy, 61° F. PM; partly sunny, windy, 72° F.**

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:
- Cronin/Smith continue 2012 - 2nd Quarter Groundwater Sampling task; purged and sampled MW-26, MW-604D (MS/MSD collected at this well), MW-707DD, and MW-709DD for Total U and Isotopic U (Total and Filtered).

Were there any Delays in Work Progress today?
- None.

General Comments:
- None.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- None.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Completed 2012 - 2nd Quarter Groundwater Sampling Task.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
- None.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _080312__ Page 1 of _1__ Date 08/03/2012
PROJECT: Datagap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	***Weather:*** *AM; Mostly Sunny, 75° F.* *PM; Mostly Sunny, humid, 95° F.*

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Began 2012 third quarterly groundwater sampling task; downloaded data from Troll 9500s and Level Trolls at MW-708DD, MW-710D, MW-710DD, and MW-713D and purged and sampled these wells for Total U and Isotopic U (Total and Filtered). Reinstalled refurbished Troll 9500 in MW-709 DD well. Set test to begin at 1800 this evening.

Were there any Delays in Work Progress today?
- None.

General Comments:
- None.

Verbal Instructions given by Government:
- USACE personnel (Sheila Hint & another) visit site today to test Whale Pump and peristaltic pump at MW-710 DD.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- None.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Began 2012 – 3rd Quarter Groundwater Sampling Task.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
- None.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION	Report Number _080612__ Page 1 of _1__ Date 08/06/2012
PROJECT: Datagap Investigation, Former Guterl Steel FUSRAP Site	Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	**Weather:** AM; Sunny, 75° F. PM; Sunny, windy, 82° F.

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Cronin/Smith continue 2012 – 3rd Quarter Groundwater Sampling task; purged and sampled MW-26, MW-604D (MS/MSD collected at this well), MW-605D (Duplicate 02 collected at this well), MW-704DD, MW-707DD, and MW-709DD for Total U and Isotopic U (Total and Filtered). At K. VanKueren's request resampled MW-710D and MW-710DD using small diameter Teflon tubing left by USACE at the site. Completed work too late for TestAmerica courier pickup; samples to be picked up on 08/07/12 am.

Were there any Delays in Work Progress today?
- None.

General Comments:
- None.

Verbal Instructions given by Government:
- None – No USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- None.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Completed 2012 – 3rd Quarter Groundwater Sampling Task.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
- None.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION		Report Number _102212__ Page 1 of _1__ Date 10/22/2012
PROJECT: Datagap Investigation, Former Guterl Steel FUSRAP Site		Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	**Weather:** AM; Sunny, breezy, 49° F. PM; Sunny, 60° F.	

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Began 2012 fourth quarterly groundwater sampling task; downloaded data from Troll 9500s and Level Trolls at MW-708DD, MW-710D, MW-710DD, and MW-704DD and purged and sampled these wells for Total U and Isotopic U (Total and Filtered). Collected VOC samples at MW-708DD and MW-710D for the USACE. At MW-708DD it was found that water had entered the Troll 9500 battery compartment again (unit was refurbished and reinstalled on 09/05/12; test suspended on 10/13/12). Dried out unit and replaced batteries for the first time since 09/05/12, downloaded data and reset test to begin at 1800. Reinstalled refurbished Troll 9500s in MW-710D and MW-704DD and set up tests to begin later in the day. At MW-710 DD location the Troll 9500 was accidently dropped down the 2" well after setting up the test. It was determined that the knurled locking sleeve was not locked down and when the Troll was picked up to be put in the well, it slipped from the joined electrical connectors. Cronin/Smith spent 2 hours attempting to fish the Troll out of the well, all efforts were unsuccessful. Called In-Situ but they had no further advice; left message at Nature's Way for advice.

Were there any Delays in Work Progress today?
- Two hours (1700 – 1900) spent trying to retrieve Troll 9500 from MW-710DD.

General Comments:
- None.

Verbal Instructions given by Government:
- USACE personnel (Peter Lorey & Mark Legeza) visit site today to observe sampling/Troll 9500 & Level Troll download procedures.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- None.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Began 2012 – 4th Quarter Groundwater Sampling Task.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
- None.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION		Report Number _102312__ Page 1 of _1__ Date 10/23/2012
PROJECT: Datagap Investigation, Former Guterl Steel FUSRAP Site		Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	**Weather:** AM; Rain, 54° F. PM; Rain showers, misty, 56° F.	

QC NARRATIVES

Did anything develop that may lead to a Change Order/Claim?
- No.

Activities In Progress:

- Cronin/Smith continue 2012 – 4th Quarter Groundwater Sampling task; purged and sampled MW-604D (MS/MSD and Duplicate 03 collected at this well), MW-707DD, MW-709DD, and MW-713D for Total U and Isotopic U (Total and Filtered). Collected VOCs at these wells for the USACE. Samples to be transported by TestAmerica courier tomorrow. Pulled remaining rental Troll 9500 and downloaded collected data except for unit in MW-605D which is stuck in well (probably due to wire hangers attached to the cable sections). Swapped out RDO caps from rental units to permanent units (several more will be required), some rental units required new batteries to be installed prior to download.
- Will attempt to free Troll 9500 from MW-710DD tomorrow.

Were there any Delays in Work Progress today?
- None.

General Comments:
- None.

Verbal Instructions given by Government:
- None – Six USACE personnel onsite today.

Safety Inspection / Safety Meetings:
- Tailgate meeting, documented separately.

Safety: (Inspections Made, Deficiencies noted):
- None.

PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice)
- None.

ACTIVITY START/FINISH
- Continued 2012 – 4th Quarter Groundwater Sampling Task. MW-26 and MW-605D need to be purged and sampled.

QC REQUIREMENTS
- None.

QA/QC PUNCH LIST
- None.

CONTRACTORS ON SITE (Report subcontractor's first and last day on site)
- None.

LABOR HOURS
-No Shaw hourly.

EQUIPMENT HOURS
- None.

ACCIDENT REPORTING
- None.

Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.

QC Representative's Signature and Date	Superintendent's Initials and Date
Kevin C. Cronin	

CONTRACTORS QUALITY CONTROL REPORT (CQCR) DAILY LOG OF CONSTRUCTION		Report Number _102412__ Page 1 of _1__ Date 10/24/2012
PROJECT: Datagap Investigation, Former Guterl Steel FUSRAP Site		Contract W912QR-08-D-0013 DO DN03
Contractor: Shaw Environmental & Infrastructure, Inc.	**Weather:** AM; Mist, 54° F. PM; Cloudy, 60° F.	
QC NARRATIVES **Did anything develop that may lead to a Change Order/Claim?** - No.		
Activities In Progress: • Cronin/Smith finish 2012 – 4th Quarter Groundwater Sampling task; purged and sampled MW-605D (after freeing rental Troll 9500 unit from well), and MW-26 for Total U and Isotopic U (Total and Filtered). Collected VOCs at these wells for the USACE. Samples transported by TestAmerica courier in early afternoon. • Successfully freed Troll 9500 from MW-710DD in late afternoon. Unit transported to Shaw office for evaluation.		
Were there any Delays in Work Progress today? - None.		
General Comments: - None.		
Verbal Instructions given by Government: - None – Six USACE personnel onsite today.		
Safety Inspection / Safety Meetings: - Tailgate meeting, documented separately.		
Safety: (Inspections Made, Deficiencies noted): - None.		
PREP/INITIAL DATES (Preparatory and initial meetings held or advance notice) - None.		
ACTIVITY START/FINISH - Completed 2012 – 4th Quarter Groundwater Sampling Task.		
QC REQUIREMENTS - Mark Hardner, PG, from Shaw Monroeville, PA office, onsite to conduct QC audit of sampling task.		
QA/QC PUNCH LIST - None.		
CONTRACTORS ON SITE (Report subcontractor's first and last day on site) - None.		
LABOR HOURS -No Shaw hourly.		
EQUIPMENT HOURS - None.		
ACCIDENT REPORTING - None.		
Contractor Certification: On behalf of the contractor, I certify that this Report is complete and correct and all equipment and material used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as noted above.		
QC Representative's Signature and Date 	Superintendent's Initials and Date	

6/15/11 @

0650 ONSITE
0700 MORNING MTG, FILL EYE WASH STATION @ PICKUP TRUCK (1)
GO TO 706 DD DRIVE 4' LINERS TO DETERMINE TOR (~6.5') TRY AND COLLECT 2' ACETATE GEOTECH SAMPLE - HAVE COARSE GRAVEL IN SHOE W/ ONLY ~6" OF SOIL MOVE RIG ~1.5' TRY AGAIN. RECOVER ONLY ~0.9' 3RD USACE PERSON MARK ONSITE. PERFORM NOISE SURVEY WHILE TURNING HSAs < 90dB. GARY G ONSITE. PLACE ~10.5' 4" STEEL CASING INSIDE HSAs. BEGIN CEMENTING CASING @ 1005, FINISH @ 1010. PACK UP AND DECON HSAs @ PAD. MOVE RIG TO 709DD (FRONT LAWN) LEVEL D.

DOWNGRADE TO B. BEGIN 4' MACROCORE @ 709DD @ 1110 - REFUSAL ON ROCK @ ~2.4' BGL, RUN 3" SSP FROM 0-2' REC ~0.7' DUE TO COARSE GRAVEL IN SHOE NOISE @ <93 dB ~6' FROM RIG WHILE GRINDING HSAs ON BEDROCK. KC OFFSITE FOR GENERATOR @ 1210 BACK ONSITE @ 1325. RIG FILLING UP H_2O @ HYDRANT, PREPARING TO MOVE TO 710DD TO BEGIN CORING. SET UP AND ROLLER BIT GROUT @ BOTTOM OF CASING (~6' BGL). START CORING ~1400 END CORING @ ~1620 @ ~30' BGL @ 701 DD.

6/16 BEGIN CORING @ 701 DD @ 0800 AFTER TAILGATE MTG / SET UP CLEAR UTILITIES @ 702 DD. UPON BEDROCK CORE INSPECTION GARY G SAYS TO RUN 10' SCREEN FROM ~30'-40' TO CAPTURE FRACTURES ABOVE MASSIVE BEDDING OBSERVED BELOW ~37'

AM SUNNY / PM CLOUDY / SHOWERS AFTER 1500

MARK (USACE) @ 701 DD @ 1115. SHOW KEN WHERE 711 D DD LOCATION IS TO BEGIN HAND CLEARING. FINISH CORING @ ~1400. GARY G. OFFSITE TO MONROEVILLE. CHECK SOP RE USING BENTONITE TO BACKFILL RAD SAMPLING BOREHOLE - GARY G SUGGESTS SURVEYING BENTONITE TO GET READINGS FOR INFORMATION. TD @ 79.8' BGL MEASURED ▽ @ 21.52' BGL - CAN HEAR WATER FALLING IN BOREHOLE. INTRODUCE BENTONITE MEDIUM CHIPS, PLUG BACK TO ~41' BGL, SET SCREEN @ ~30'-40', OON SAND FROM 28'-40', BENTONITE FROM ~26'-28'

(1111 EXITS)
(10 SLOT 2" PVC)

6/17 AM M. CLOUDY BREEZY

HOLD TAILGATE MTG @ 0700. WILL BEGIN BEDROCK CORING @ 709 DD. TOP OF CEMENT IS @ ~3' BGL BOTTOM OF CASING IS @ ~4' BGL WILL ROLLERBIT TO ~5' BGL AND START 5-FOOT CORING RUNS THERE START @ 0850. LABEL DRUM OF SOIL CUTTINGS @ 709 DD. END @ 0910 – WATER COMING UP OUTSIDE OF CASING DUE TO FRACTURED BEDROCK. GARY SAYS HE'LL GROUT COREHOLE TO ~10' AND LET SIT OVER WEEKEND. WILL RUN CASINGS @ OTHER LOCATIONS (704 DD, 707 DD, 702 DD). TAKE KEN TO 705 D, DD TO BEGIN UTILITY CLEARING. GROUT ANNULUS @ 709 DD BACK TO SURFACE, MOVE OFF LOCATION @ 1000. MOVE TO 707 DD TO SOIL SAMPLE + COLLECT GEOTECH SAMPLE. DRIVE MACRO CORE @ 1035. REFUSAL @ ~2.5' BGL. RUN 3" SSP W/ LINER FROM ~0.5'-2.5' GET ~0.8 FOOT RECOVERY IN ACETATE LINER. REG BURI WOULD LIKE 704 DD + 707 DD TO BE FLUSH MOUNTED PCS. FINISH GROUTING CASING (5'3") @ 1130. DECON

~3.2' MOVE TO 704 DD AND DRIVE MACROCORE TO ~3.2' BGL @ 1230 RECOVER ~1.1'. DRIVE 3" SSP FROM GL TO 2' (RECOVER ~0.8' OF FILL)

6/18 0.75 hr RUN 6¼" HSAs REFUSAL @ ~4' BGL. CASING LENGTH IS ~5.3' FINISH GROUTING @ 1310.

6/20 AM SUNNY, 70°

ONSITE @ 0645, TAILGATE SAFETY MTG @ 0700. MOVE BACK TO 709 DD AND DRILL OUT GROUT FROM 4" CASING BEGINNING 0800. TR SETS UP AIR SAMPLING PUMPS. BEGIN BEDROCK CORING @ 0822 KEN HAND CLEARING LOCATIONS @ 710 D, DD. @ 1125 TR NOTES THAT FLUSH MTD PROTECTIVE CASING @ MW-604 D APPEARS WET. RUN COVER WELL – GRIPPER CAP OFF 2" PVC W/ WATER INSIDE PC. ! @

710 711 705 708 DUE S OF ↑ CALLED IN FOR UFPO THURSDAY START

1145 @ WELL ~5.8' BTOC TD ~18.10' BTOC – ASSUME COMMUNICATION W/ CORING ACTIVITIES. CORE DOWN TO ~80'1" @ 1505. BEGIN FILLING W/ BENTONITE CHIPS; TAKE UP TO ~48' BGL AND LET HYDRATE OVER NIGHT. TR + KC GO OVER TO LOCATE 708 DD – ACROSS OHIO ST + TO SOUTH OF MAPPED LOCATION AS PER KVK. LOOKS AS IF 710 D, DD WHERE STAKED IS WHERE 708 DD WOULD FALL – CALL KVK – WILL NEED TO REVISIT. DRIVE TO OFFICE FOR RAD BAGS UPS @ AIRPORT TOM B'S BOX SENT.

6/4 (3)

AM P. Cloudy, 70

PM M Cloudy 80° ↑ Humidity

ONSITE @ 0645. PREP FOR TAILGATE, HAVE CREW SIGN FORKLIFT TRAFFIC AWARENESS, PREPARE HOT WORK PERMIT FOR 708 DD CASING CUTTING. KC GOES W/ ICEN TO LOCATE 703 DD. DRILLERS CUT 4" CASING AND INSTALL 2" PVC WELLS AS PER INSTRUCTIONS. TAKE WATER LEVELS @ 701 DD, ~ 5.45' BGL (~10.35' BTOC - UNCUT 2" PVC STICKUP). GET GAS FOR GENERATOR AND DO EQUIPMENT INVENTORY FOR PATRICK M. SET UP @ 707 DD AND DRILL OUT ~ 5' GROUT (3.5' CASING) START BEDROCK CORING @ 0950. HAVE WATER RETURN UP AROUND 4" CASING TO GROUND LEVEL. ROLLER BIT TO ~5' THEN CORE 5'-10' (RUN 1). STEVE WILL GROUT BACK TO SURFACE TO SEAL. LOST ~300 GAL OF WATER DURING 5' CORE RUN. MIX UP GROUT AND TREMMIE INTO BOREHOLE @ 1015, FINISH @ 1040. MOVE TO 704 DD. MOVE 701 DD CORE BOXES TO NEAR DECON PAD. ARRIVE @ 704 DD @ 1120. SET UP AIR SAMPLERS, NOTHNAGLE DRILLING OUT GROUT FROM 4" CASING. SET UP TO CORE, BEGIN CORING @ 1130. @ 1140 WATER COMES UP AROUND 4" CASING. FINISH RUN 1 @ 1145. LOSE ~50 GALS OF WATER. REGROUT FROM SURFACE TO ~10' MOVE RIG TO 706 DD (BOTTOM OF CASING @ ~8' BGL, GROUT TO 3' IN CASING) RUN 1 IS FROM ~8'-13'. TR + KC STAKE OUT 708 + 710 LOCATIONS (CAN'T HAND CLEAR UNTIL 6/23 AS PER KVK). CORE FROM ~ 8'-38' BGL. END CORING FOR DAY @ 1555. NOTHNAGLE OFFSITE @ 1600. DO DAILY REPORTS, DOWNLOAD + LABEL TODAY'S PIX TRY AND SCAN BORING LOGS TO VIKAS TANDON

GROUT @ 3' CASING @ 8' 8-13 @ 20 gals

6/22/11
AM-
CLOUDY
LT SHOWERS
65°
RAIN @ 0830
RAIN ENDS @ ~1100
PM-
HUM (S)
BREEZY
BECOMING M. CLOUDY
BREEZY (N)

ONSITE @ 0650. HOLD TAILGATE MTG @ 0700. START CORING @ 0730 @ 704DD. SKYSCAN STORM INDICATOR SOUNDS SEVERE THUNDERSTORM @ 0740; NO RANGE GIVEN, RADAR HAD SHOWN HEAVY RAIN OVER LAKE ERIE NEAR BUFFALO @ 0720, TRAVELING NW @ 0755 NOT FLASHING SEVERE. CALL KVK TO DISCUSS SCREEN DEPTH; @ 40' STILL MASSIVE MW-19 (ADJACENT) TD = ~23.25' BTOC ~20' BGL (? 10'-20' SCREENED INTERVAL). CALL KVK @ 0835 - WOULD LIKE TO ~50' TO SEE IF FRACTURES PRESENT. START RUN 9 @ 0840 - IF UNFRACTURED PLUG BACK TO ~40' AND SCREEN 30'-40'. CALL KVK @ 0905 ~ ROCK STILL MASSIVE - GO W/ PLAN TO SCREEN 30:40'. GET CALL FROM NORM (716-465-6266) (CITY OF LOCKPORT) RE 708 + 710 LOCATIONS - CLEAR W/ THEM. SAID TO WATCH SNAKE ALONG BYPASS. START 706 WELL INSTALL @ 0920. PLUG BACK FROM ~41'-50' W/ BENTONITE, SAND ~ 28'-41', BENTONITE ~26-28 GROUT ~26' - INTO 4" CASING. RIG OFF SITE TO DECON PAD @ 1020. MOVE BACK TO 704DD @ 1115. START DRILLING GROUT @ 1135, DRILL BACK TO ~10' START CORING @ 1200, END @ 1215. MARK 4 ANGLES @ 704DD @ 1415 W/ LOCATOR FROM PREMIER (UFPO) TO ✓ OFFSITE LOCATIONS - SHOW HIM FIG 3-1 W/ OFFSITE LOCS. HE WILL LOCATE. FINISH BEDROCK CORING @ 704DD @ 1425. FLUSH OUT CORE BARREL AND BREAK DOWN RODS/CORE BARREL. CALL KVK RE SCREEN INTERVAL - ? SCREEN OR SAND PACK OVER BUSTED UP ZONE @ ~28.8' BGL. TALK W/ KVK + VT + SEND PHOTOS OF BUSTED UP ZONE @ ~ 28. OFFSITE @ 1700.

6/23/11
AM
M. SUNNY 65°
(RAIN OVERNIGHT)

ONSITE @ 0645, HOLD TAILGATE MTG @ 0700. WILL SAMPLE SOIL + SET CASING @ 702 DD (BEHIND RAD ROPE) THIS AM, SET CASINGS/SAMPLE @ 711 D, DD ALSO. SET UP @ 702 DD, START SOIL SAMPLING @ 0855. DRIVE 3" SSP @ 0910 TO ~ 4' (2'-4') PID CALIBRATED (100 PPMV) @ TRAILER @ 0830. HSA REFUSAL @ ~4' BGL; ROLLER BIT TO ~10' BGL. DRIVE ~11' OF 4"

7/7 3AM DL PALUMBO

CASING BUT IT BEGINS TO GO IN CROOKED SO PULL OUT AND CUT ~ 6' LONG PIECE OF 8" STEEL CASING (TEMPORARY). PULL HSA SECTION AND DROP 8" CASING INTO BOREHOLE, DROP IN BENTONITE TO SEAL AND SAND TO LOCK IN CASING THEN DRIVE TO ~4.5' BGL. SWITCH TO 6" TRICONE BIT AND DRILL W/ ROLLER CONE TO ~10' BGL (1050-1100) MIX UP 2 BAGS OF GROUT AND PUMP DOWN RODS. DROP 4" CASING INTO 6" BOREHOLE AND PULL 8" CASING. BOTTOM OF 4" CASING SET @ ~ 10' BGL. MOVE OFF 702 DD @ 1140. MOVE TO 711 D, DD, SET UP AND SOIL SAMPLE @ 711 DD @ 1300. 3" SSP COLLECTED ~1'-3' BGL AFTER MACRO CORE. TRY DRIVING 8" CASING - BOUNCE OFF ROCK CUT DOWN 8" CASING TO PLACE AND ROLLERBIT THROUGH 8" CASING SET @ ~ 3" BGL, PLACE W/ BENTONITE SEAL; ROLLERBIT W/ 6" TRICONE BIT. MIX GROUT UP AND LOWER 4" CASING IN 8". BOTTOM OF 4" IS SET @ ~7' BGL. PULL 8" CASING OUT. FINISH 711 DD CASING @ 1410. MOVE RIG TO CASE 711D, DRIVE 8" CASING AND ROLLER BIT W/ 6" TRICONE @ 1430. PLACE 9' OF 4" CASING IN 8" CASING @ 1505, GROUT AND PULL CASING. BOTH 711 D+ DD HAVE ~2' STICK UPS.

PM. MOSTLY SUNNY BREEZY 80°

BECOMING MOSTLY CLOUDY AFTER 1430. HEAVY RAIN @ 1510

FRIDAY 6/24

AM CLOUDY OCC. LT SHOWERS FOG UNTIL 0845

ONSITE @ 0645 TAILGATE MTG @ 0700. NOTHNAGLE SETS UP TO DRILL OUT GROUT @ 702 DD, BEGIN @ 0825. SET UP TO CORE @ 0840 START @ ~10' BGL. HAVE T-STORM, RAIN DELAYS. DRILL/CORE TO ~40' BGL INSTALL GWMW @ 1145 SCREEN 30'-40', SAND FROM 28'-40' BENTONITE 26'-28' GROUT. DRLRS OFFSITE @ 1315

MON 6/27 AM- SUNNY 65°

PM SUNNY 75°

ONSITE @ 0650, HOLD TAILGATE MTG @ 0700, STEVE L HAS DR'S APPT THIS PM SO NEEDS TO BE OFFSITE BY 1530. MOVE TO 708DD LOCATION TO INSTALL 4" CASING. DRIVE MACRO CORE TO ~2.5' BGL, 3" SSP (8-32-44-10/3") REC ~1.4' IN ACETATE TUBE. SET UP TO DRILL W/ 6" TRI CONE BIT AFTER DRIVING 8" STEEL CASING, START DRILLING @ 0840. DRILL DOWN TO ~5' BGL STEVE SAYS ROCK IS HARD THERE SO CASING SHOULD SEAL WELL. GROUT 4" @ 0905. MOVE OFF TO 710D, DD @ 0925. MARK (USACE) ONSITE @ 0930 - GIVE HIM UPDATE ON PROGRESS SO FAR; EXPLAIN 8" CASING RATIONALE TO HIM, PLANNED ACTIVITIES. MOVE TO 710D, DD POUND MACROCORE @ 1000 - REC ~2.3' OF FILL + SOIL, HAD TO CUT SOM POPLAR BRANCHES + BRUSH FROM WELL LOCATIONS FOR ACCESS, FOOTING. ROLLERBIT DOWN TO ~7' BGL THROUGH 8" CASING. MOVE RIG TO ADVANCE 710DD CASING, DRIVE MACROCORE TO ~3' BGL - REFUSAL @ ~3' (RECOVER ~2.9'). NO 3" SSP COLLECTED @ 710 CLUSTER (GEOTECH FOR ONSITE LOCATIONS ONLY). START 6" ROLLER BIT @ 1115. WELL LOCKS ARE MASTER 2342, GIVE SET TO MARK - MARK (USACE) OFFSITE @ 1138. 7' CASING SET @ 710DD. MOVE BACK TO 707 DD. MARK BACK @ 1242 START DRILLING OUT GROUT @ 1240. DRILL OUT GROUT BUT WATER STILL COMING UP ANNULUS SO NOTHING WILL PULL OUT 4" CASING (~5.3') TO DRIVE 8" CASING/6" ROLLERBIT. START ROLLERBIT @ 1320. CUT ~11' OF 4" CASING. END 6" ROLLERBIT @ ~10' BGL @ 1345, PUMP THICK GROUT, END GROUTING @ 1400. CREW WILL FINISH 702DD SURFACE. BILL FREDRICK (USACE) ONSITE @ 1420, ASKS IF VIKAS T WAS TO BE ONSITE TODAY - GOES TO DECON PAD W/ MARK TO LOOK @ ROCK CORE. JEFF HALL ONSITE.

TUES 6/28/11 AM CLOUDY, BREEZY 65°

ONSITE @ 0650 HOLD TAILGATE MTG @ 0700 (T-STORMS PREDICTED). CALIBRATE PID (101 ppmv). PLAN ON ATV RIG BEING DELIVERED THIS AM. NOTHNAGLE SETS UP TO CORE @ 708DD. START DRILLING GROUT @ 0800. MARK LEGEZA (USACE) ONSITE @ 0810, GET ONLY PARTIAL ROCK SECTIONS (COBBLE SIZED) IN 1ST 2 RUNS, GO BACK IN AND COMPLETE CORING RUN TO ~10'. CONTINUE CORING. ATV RIG ONSITE @ 0940. (CME-55 LC), UNLOAD OFF TRAILER, MARK LOVANT "DRIVES" RIG OVER TO 705D, DD LOCATION. AL CAMPISANO - CITY OF LOCKPORT WATER DEPT STOPS BY - 2 LARGE WATER MAINS ALONG CSX RR ROW THAT RUN TOWARDS RT 93. WOULD LIKE TO STOP OUT WHEN 712 + 713 LOCATIONS ARE STAKED AND CALLED IN FOR UFPO. FINISH CORING @ 1130, KARL VAN KUREN REQUESTS FLUSH MOUNTED CASING FOR 708DD. INSTALL GWMW, MOVE RIG OFFSITE @ 1300. TO 707DD. START DRILLING GROUT @ 1340. START HX CORING @ ~10' BGL @ 1407. FINISH CORING FOR THE DAY @ 1340 - NOTHNAGLE OFFSITE @ 1345, MARK L (USACE) OFFSITE) TOO 716-690-5158

WED 6/29/11 AM CLOUDY WINDY 60°

ONSITE @ 0645, HOLD TAILGATE @ 0700. MARK LEGEZA (USACE) ONSITE @ 0705. START CORING @ 707D @ 0720, FINISH @ ~40' BGL @ 0800. INSTALL GWMW, FINISH @ 0900, MOVE OFF TO DECON, GO TO 705DD TO SET CASINGS. DRIVE 4' MACRO CORE @ 705DD @ 0955. HAVE TO REPOSITION RIG AS 8" CASING NOT DRIVING IN STRAIGHT. CUT ANOTHER LENGTH OF 8" AND DRIVE INTO TOP OF ROCK SET UP TO DRILL W/ 6" TRICONE. AT 1100 WHILE MIXING GROUT TO

SET 4" CASING IN BOREHOLE, TR + KC WERE RELOCATING AIR PUMP NEAR RIG DUE TO WATER ON GROUND APPROACHING PUMP KEN A. WAS MIXING GROUT IN 55-GAL DRUM THAT WAS BEING CIRCULATED THROUGH RIGS MOYNO PUMP AND 1" HI-PRESSURE HOSE. HOSE BECAME PLUGGED W/ SOLIDS AND THEN DISCHARGED SPRAY (MIXED GROUT + POTABLE WATER) IN TRENT RICHARD'S DIRECTION WHILE HE WAS REPOSITIONING AIR PUMP TRENT WAS SPRAYED W/ GROUT MIXTURE ON HIS FRONT SIDE WHICH COVERED HIS HARD HAT, SAFETY GLASSES, EXPOSED FACE/SKIN, COVERED ARMS, LEGS + SAFETY VEST. DRILLERS USED POTABLE WATER AND PAPER TOWELS TO CLEAN OFF MIXTURE. WET CLOTHING BEING WORN IN 60°F WINDY CONDITIONS. MOVE RIG OVER AND DRIVE 8" CASING, TRI CONE DRILL AND SET SECOND 4" CASING. FINISH GROUTING @ 1200. ONLY 1 MACROCORE SAMPLE COLLECTED @ THIS LOCATION. NOTHNAGLE SWITCHES OUT DRILLING SWIVEL OF 55 TO ALLOW CORING. DROP OFF 707 + 708 COREBOXES BY DECON. STEVE CHECKS OUT 703 DD LOCATION AND DECIDES TO MOVE CME 85 BACK TO 710 CLUSTER. CASINGS GROUTED @ 705 LOCATIONS EACH ~7' LONG SET @ ~5' BGL. START ROLLER BITING GROUT @ 710 DD @ 1335. START ROCK CORING @ ~7' BGL @ 1350. CORE TO ~32' BGL, NOTHNAGLE/USACE OFFSITE @ 1540

PM
P. SUNNY, 70° WINDY.

THURS 6/30
AM SUNNY, 60°

ONSITE @ 0655, HOLD TAILGATE MTG W/R/T GROUTING. MOVE BACK TO 710 DD START CORING 0725, AFTER COMPLETING 710 DD WELL INSTALL STEVE WILL WAIT @ LEAST 24 HOURS TO LET BENTONITE/GROUT SET UP BEFORE DRILLING 710 D DUE TO FRACTURE ZONE/POSSIBLE COMMUNICATION BTWN WELLS. PARTIALLY GROUT WELL AFTER PLACING SAND/BENTONITE, WILL ✓ DEPTH LATER IN DAY, MAY PLACE BENTONITE ACROSS ~13' FLOW ZONE TO SEAL RIG MOVES

UPPER

PM
SUNNY, 80°

0905, TEAR DOWN AIR PUMPS, LOAD CORE BOXES. MOVE TO 703 DD LOCATION TO SET CASING, DRIVE MACRO CORE TO ~2' BGL (REFUSAL). DRIVE 3" SSP, DRIVE 8" CASING ROLLER BIT W/ 6" @ 0955. CUT 7' SECTION OF 4" CASING, GROUT IN PLACE, MOVE OFF 703 DD @ 1035. HAVE TO FRISK ALL TIRES @ RAD ROPE. STEVE PLACES BENTONITE CHIPS FROM ~19' BGL IN 710 DD AND HYDRATES @ 1130. MOVE TO 705 DD. SET UP AND START DRILLING OUT GROUT @ 705 DD @ 1145. STARTING CORING @ 1200. CORE BARREL PLUGS UP @ ~5.5' @ 1205, BACK CORING @ 1220. @ 1230 STEVE SAYS CASING IS LEAKING SO HE'LL REGROUT THIS CASING AND START CORING ON OTHER CASING. GROUT UP WHAT IS NOW 705D AND REPOSITION CME 55 LC OVER OTHER 4" CASING. START DRILLING OUT GROUT IN THAT CASING W/ 3 5/8" TRICONE BIT. GIVE OK TO DRILL DOWN TO ~10' BGL @ 705 DD BEFORE CORING TO FIND MORE COMPETENT ROCK TO CORE THROUGH. STARTING TO CORE BELOW 10' @ 1335. FINISH CORING @ ~1540 @ ~40' BGL. INSTALL 705 DD WELL AFTERWARDS. DRLRS OFFSITE @ 1645.

545-06-7163

FRIDAY 7/1/11

ONSITE @ 0655, HOLD TAILGATE MTG. MOVE BACK TO 705 TO DRILL/CORE 705 D. START DRILLING @ 0820, TRENTON PULLS CORD TO START AND CORD BREAKS SO CAN'T USE GENERATOR. TRY PATRICK M— GET VM, OUT OF OFFICE, CALL HERTZ - WILL SEND SOMEONE OUT TO REPAIR. DRILL OUT GROUT @ 705 D, BEGIN CORING @ ~0835. GET CALL FROM JOHN MOYER RE MW-7 WELL @ CSK BENITT. END CORING @ ~20' BGL @ 0920. INSTALL 705 D WELL. MOVE CME 55 LC TO 703 DD LOCATION FOR WEEKEND @ 1010. MOVE CME 85 BACK ONTO 710 DD TO CORE, AND

INSTALL GWMW. DRILL OUT GROUT TO ~7' BGL, SET UP TO CORE. CALLED HERTZ RE NEW LOCATION. START CORING @ 1120. HERTZ ONSITE TO REPLACE PULL CORD ON GENERATOR @1130, OFFSITE @ 1140. DRILL TO 20' AND INSTALL GWMW 710D DRILLERS OFFSITE @ 1215. DO PAPERWORK, DOWNLOAD PITOTS

7/5/11 MONDAY AM M SUNNY 75° PM P SUNNY → CLOUDY 75-80° BECOMING HUMID

ONSITE @ 0650, HOLD TAILGATE MTG; DRILL 711 DD + 703 DD TODAY IF POSSIBLE. SET UP CME 85 @ 711 DD LOCATION. START DRILLING GROUT W/ 3" TRICONE TO ~7' BGL @ 0815. MARK L WORKING ON FLUSH MTD ROADBOX @ 707 DD. MARK LAGERA (USACE) ONSITE @ 1010, GENERATOR SHUTS DOWN @ RANDOM TIMES (? TOO HOT, OIL LEVEL + FUEL OK). MARK L OFFSITE @ 1100, BACK @1140, OFFSITE @ 1150. INSTALL GWMW, RUN GROUT TO BELOW 15' AND BENTONITE ACROSS ZONE @ ~ 10' BGL WHERE WATER WAS BEGUN TO BE LOST, WILL TOP OFF GROUT LATER IN PM. RIG OFFSITE @ 1200. MOVE EQUIPMENT TO 703 DD LOCATION THROUGH NW GATE. START DRILLING GROUT @ 1310. FINISH CORING @ -40' BGL @ 1515. INSTALL 703 DD. PACK UP AND MOVE OFFSITE @ 1600; SCAN TIRES OF VEHICLES @ RAD ROPE.

7/6/11 AM SUNNY 70° → CLOUDY PM SHOWERS ARRIVE 1200 HUMIDITY ↑ SUNNY → 80°

ONSITE 0655 HOLD TAILGATE MTG @ 0700, T-STORMS PREDICTED ASK KVK RE DEVELOPMENT H_2O. MOVE CME 85 TO 711D. START CORING @ 0815, FINISH @ 0900, INSTALL WELL, BEGIN DEMOBE OF DRILLING RIGS. TRENT GOES TO PICK UP YSI METER @ HOTEL. START DEVELOPMENT @ 709 DD AND 708 DD - BOTH STABILIZE. REMOVE ~125 GALLONS TOTAL (~60 GALS @ 709 DD, ~65 GALS @ 708DD) DRLRS OFFSITE @ 1545.

7/7/11 AM. SUNNY. 60°

ONSITE @ 0650, HOLD TAILGATE MTG, WILL DEMOBE DRILLING RIGS TODAY, CONTINUE WELL DEVELOPMENT (11) (710 D, DD, 707 DD, 706 DD - IF POSSIBLE [DR's APPT THIS PM]) CALIBRATE YSI 6820; DO, pH, OTHERS GOOD. PREP NOISE DOSIMETER FOR SHIPMENT BACK TO FINDLAY. DEVELOP 710 DD, (~52 GALS), 710 D (~60 GALS). MOVE TO 707 DD @ 1115. - DRYING OUT, V. TURBID. MOVE TO 706 DD ALSO TURBID / DRYING OUT, MOVE TO 704 DD FINISH 704 DD @ 1335 (~60 GALS) KC OFFSITE @ 1400 (DR's APPT) DROP OFF NOISE DOSIMETER @ UPS AND BUY 3 GALS DISTILLED WATER

→ CROSSON PM CLOUDY 75°

16 MILES TO UPS

7/8/11 AM M. SUNNY, 65°

ONSITE @ 0645. HOLD TAILGATE MTG @ 0700. CALIBRATE YSI METER (DO, pH (7,10), TURBIDITY). GO TO 707 DD - DRIES OUT W/IN ~30 SEC. GO TO 706 DD, THAT DRIES OUT AFTER ~6 GALS - LET RECOVER DRY OUT 3X, GO OVER TO 711 LOCATION. BOTH WELLS DRY OUT - LET RECOVER. CONF CALL (1030 - 1115), BURN CDs OF DRILL PIX BACK @ 711 @ 1130; DRYING OUT - MOVE TO 705 D, DD. BOTH DRY OUT SEVERAL TIMES. MOVE BACK TO 711 @ 1320. BOTH WELLS DRY OUT, MOVE TO 707 DD. DRIES OUT AFTER ~5 GALS, LET RECHARGE. DRIES OUT AGAIN - MARK L. TAKES ~75 GALS OF WATER BACK TO DRUM UP. CLEAN METERS.

CONF CALL @ 1030

MONDAY 7/11/11 AM M. SUNNY 75° BREEZY

ONSITE @ 0655, HOLD TAILGATE MTG W/ MARK LORANTY - HE WON'T BE ONSITE 7/12 DUE TO FUNERAL. START @ 711 LOCATION AFTER CALIBRATING YSI 6280 (DO, pH (7+a)). DRY OUT BOTH WELLS GO TO 702 DD (DRIES OUT), GO TO 701 DD, COMPLETE THIS WELL. GO TO 703 DD, COMPLETE THIS WELL, GO TO 706 DD (DRIES OUT)

PM

GO TO 707 DD, NOT ENOUGH WATER TO COVER PROBES, GO TO 705 D, DD. DRY OUT BOTH, LET RECHARGE, DRY OUT. GO TO 711; DRY OUT BOTH. GO BACK TO 706 DD (DRIES OUT), 705 D, DD

(BOTH DRY OUT), 711 D, D (BOTH DRY OUT). PACK UP FOR THE DAY. MARK LOKANTY TURNS OVER WITH LE PUMP, OTHER TOOLS FOR 7/12/11 WORK.

TUES 7/12 AM SUNNY, 75° PM SUNNY 88°

ONSITE @ 0630 HOLD TAILGATE MTG W/ KEN ALMETER CALIBRATE YSI (pH, DO, TURBIDITY). TRENT PERFORMS RELEASE SURVEY ON GENERATOR TO RETURN TO HERTZ. GO TO 707 DD - VERY LITTLE WATER RECHARGE, MOVE TO 702 DD - DRIES OUT. GO TO 706 DD (DRIES OUT), GOTO 705 LOCATIONS (BOTH DRY OUT). KC OFFSITE @ 0935 TO DROP OFF GENERATOR @ HERTZ DROP OFF PAPERWORK W/ P. MULREADY @ OFFICE. BACK ONSITE @ 1135. GOTO 702 DD (DRIES OUT), GO TO 706 DD (DRIES OUT), GOT TO 711 D, DD (BOTH DRIES OUT), GO TO 705 D, DD (BOTH DRY OUT). GO BACK TO 702 DD (DRIES OUT), GO TO 706 DD (DRIES OUT - COMPLETED), GOT TO 711 (BOTH DRY OUT)

WED 7/13/11 AM SUNNY 65° PM SUNNY 77°

ONSITE @ 0655, HOLD TAILGATE MTG, CALIBRATE YSI METER (pH, DO GOTO 707 DD - TOO LITTLE WATER TO RUN THROUGH YSI. GO TO 702 DD; DRIES OUT AFTER 3.5 GAL. GOT TO 711 LOCATIONS, BOTH DRY OUT, GO TO 705 LOCATIONS, BOTH DRY OUT. GO TO TRAILER TO DO SAFETY INSPECTION. GO BACK TO 702 LOCATION (DRIES OUT), 711 LOCATIONS (DRY OUT). GO BACK TO 702 DD AFTER 1300 (DRIES OUT), GO TO 711 LOCATIONS. (BOTH DRY OUT), GO TO 705 LOCATIONS (BOTH DRY OUT).

7/14/11 AM SUNNY 70°

ONSITE @ 0655, HOLD TAILGATE MTG. CALIBRATE YSI (pH, DO) GO TO 707 DD - TOO LITTLE WATER TO DEVELOP. GO TO 702 DD, DRIES OUT AFTER ~ 4 GAL. GO TO 711 LOCATIONS (BOTH DRY OUT), GO TO 705 LOCATION (BOTH DRY OUT). GO TO TRAILER TO GET MAP TO LOCATE 712 + 713 LOCATIONS. VERY OVERGROWN + THICK VEGETATION ENCOUNTERED.

GO BACK TO 702DD (DRIES OUT) GET CALL FROM (L) JMOYER RE. TYCO. WORK SAT 7/23 0700 IF POSSIBLE) GO TO 711 LOC (BOTH DRY OUT), GO TO 705 LOC (DRY OUT). GO BACK TO 702 (DRIES OUT, GO TO 711 LOCATIONS (DRY OUT), GOTO 705 LOCATION (DRIES OUT

7/15/11 FRIDAY AM SUNNY 55°

ONSITE @ 0630, HOLD TAILGATE MTG, CALIBRATE YSI (pH, DO, TURB GO TO 707DD - MEASURE, GO TO 702 DD (DRIES OUT), 711 D, DD (BOTH DRY OUT), 705 D, DD (BOTH DRY OUT) GO GAS UP HERTZ TRUCK TALK W/ TR, KVK RE SAMPLING PROGRAM, 712/713 LOCATIONS GO BACK TO 702 DD (DRIES OUT), 711 D, DD (DRY OUT) AND 705 L, DD (DRY OUT), 16 EMPTY BEING TAKEN OFF SITE. 58 DRUMS FILLED @ PAD, 8 EMPTY DRUMS LEFT BEHIND FOR WELL PURGING OR ADDL DRLG. MARK L OFFSITE @ 1405, MARK LORANTY (NOTHWATCH) OFFSITE @ 1415

250 GAL TANK SCANNED

MON 7/18

ONSITE @ 0655; ATI IS UNDERGOING SITE SHUTDOWN FOR SCHEDULED MAINTENANCE, MARK LEGEZA ATTENDING 40-HR OSHA TRAINING THIS WEEK. TRY AND LOCATE SEWER LOCATIONS FROM FIG 3-2 - CAN'T LOCATE ALONG OHIO ST. MOVE AND INSPECT IN EXCISED AREA ALONG INSIDE FENCED AREA - CAN'T FIND MANHOLES, TR CALLS AL CAMPISANO (LOCKPORT WATER DEPT) · LEAVES VM TO SET UP MTG. GO OUT AND STAKE KVK PROPOSED 712 + 713 LOCATIONS TR SENDS COORDINATES TO CINCY OFFICE FOR PLOTTING

WED 7/27/11 ONSITE @ 0605, HOLD TAILGATE MTG RE SEWER SAMPLING DO E-MAIL RE I VS. TOP OF SCREEN ELEVATION AS PER KLUK CALIBRATE PID (0.0 ppmv + 101 ppmv), 4 GAS METER CALIBRATED @ PINE. DRIVE TO OTHO ST @ 1315 TO WAIT ON CITY OF LOCKPORT PERSONNEL. ROLANDO M ONSITE @ 1335, ANOTHER WORKER JUST BEHIND, PID: 8.8 ppmv, O_2: 20.9, H_2S: 0.0, LEL: 0.0, CO: 0.0 OPEN MANHOLE; COLLECT LIQUIDS @ SEWER LOCATION #1 (CLARK RIGGING) @ 1345, COLLECT SOLIDS @ " " " " @ 1355. TR DOES SCANS @ MH/SURFACE (ASPHALT), MOVE TO GRASS FIELD @ NEWFANE LOC -BOR; @ SEWER LOCATION #2 (1420) PID 0.0 ppmv O_2: 21.7, H_2S 0.0, LEL: 0.0, CO: 0.0 COLLECT LIQUIDS @ SEWER LOCATION #2 @ 1425, COLLECT SOLIDS @ " " " @ 1435. NOTE RAINBOW SHEEN ON LIQUID FACTION OF SLUDGE (DECANTED OFF BACK INTO SEWER) BACK @ TRAILER @ 1505, LABEL & PACK SAMPLES.

WORKING

THURS 7/28/11 ONSITE @ 0650, HOLD TAILGATE MTG FOR NOTHNAGLE (ONSITE @ 0745) PRIOR TO REMOBE TR PERFORMS RAD SURVEY ON RIG. NOTHNAGLE. THEY SET UP @ 713 D LOCATION (CME 85) DRIVE 8" CASING TO ~ 4½' BGL, SET UP TO DRILL ROCK SOCKET w/ NEW VERSA 5 7/8" TRICONE BIT. START DRILLING @ 0930 DRILL TO ~ 7' BGL, PUT IN 4" CASING AND GROUT IN PLACE. MOVE TO 712 LOCATION @ 1005. INSPECT HAND CLEARING - ONLY HAVE ≤ 6" OF GRAY SILT, GRAVEL, ASPHALT (FILL) AT ALL LOCATIONS TR DOES AREA SURVEY. CAN'T DRIVE 8" CASING DUE TO SHALLOW BEDROCK SO RUN 5 7/8" BIT ON RODS AND USE SUMP 3 PUMP TO CAPTURE CIRCULATION WATER FROM BIT. BIT GETS PLUGGED UP, TRIP OUT TO CLEAR. DRILL SOCKET TO ~ 5' BGL, SET 4" CASING. MOVE TO SECOND 712 LOCATION @ 1115. SET 2ND 4"

CINDY BARTOLOMEI

CASING AND PACK UP FOR DAY. DRILLERS OFFSITE

FRIDAY 7/29/11

ONSITE @ 0645, HOLD TAILGATE @ 0700. MOVE BACK ONTO 713D AND BEDROCK CORE ~7' TO ~20' BGL. INSTALL 2" PVC WELL. MOVE TO 712DD @ 0910. CORE BEDROCK FROM ~5'-40', WORK STOPPAGE @ 0950 DUE TO THUNDER - TRENT RICHARDS OFFSITE TO AIRPORT @ 1000. BEGIN CORING AGAIN @ 1025 FINISH CORING @ 1140. INSTALL 2" PVC WELL TO ~40' BGL MOVE RIG BACK ONTO PLANT @ 1220. DRILLERS OFFSITE @ 1245.

MONDAY 8/1/11

PM 84° M. SUNNY

ONSITE @ 0700 HOLD TAIL GATE. SET UP @ 712D. TOP of CEMENT @ 712DD @ ~22' BGL. FIX HYDRAULIC FITTING @ HOSES ONTO TOP DRIVE. PLACE BENTONITE CHIPS TO ~6' (INTO 4" CASING) THEN TOP OFF W/ SAND. DRILL OUT CEMENT @ 712D SET UP TO BEDROCK CORE @ 0830. FINISH CORING @ 0925. INSTALL 2" PVC WELL SCREEN 60'-20', SAND TO ~8', BENTONITE TO ~5' (BTM OF CASING) TAKE COREBOXES BACK TO DECON PAD. KC OFFSITE @ 1040 TO GET TUBING @ COOPER. BACK ONSITE @ 1220. GET GEOPROBE SOIL SAMPLE @ 713D, CALL TA TO ARRANGE COOLER (SEWER SAMPLES) PICKUP. START DEVELOPMENT @ 713D, END @ 1400, MOVE TO 712DD WELL FOR DEVELOPMENT. FINISH UP @ 1500.

TUESDAY 8/2/11

AM SUNNY 75°

ONSITE @ 0655 HOLD TAILGATE MTG W/ NOTHNAGLE. CALIBRATE YSI; DO, pH (7,10), NTU (0.0, 126.0). GO TO 712D LOCATION MEASURE ▽ - DRY, TD @ ~22.02' BTOC, WATER IN 712DD (~30.16' BTOC) - CALL K. VANK. RIG GOES OVER FOR

EXIT SCAN BY TR. RE PHOTOGRAPH SOME CORE BOXES DUE TO WRONG WELL # ON THEM (71200 - NOT 71300 [NEVER DRILLED]. HAVE CONF CALL @ 1100.

WED — COMPLETED ROUND OF GW II LEVELS ACROSS SITE.

THURS — PID (0.0, 101 ppmv)
ONSITE @ 0655, CALIBRATE YSI; DO: 98.0%, pH: 7.00, 10.01, TURBIDITY: (0.0, 125.9) ASSEMBLE BOTTLES, FORMS, ETC. GO TO MW-24, SET UP AND BEGIN PURGE @ 0855 SAMPLE @ 0925 (A04DMW24 0001) GO TO MW-23 PURGE @ 1023 SAMPLE @ 1040 (A04AMW23 0001) MOVE TO 713D (A04DMW713D 0001) @ 1100. PURGE @ 1135 SAMPLE @ 1200 AFTER FITTING SMALLER Ø SILICONE TUBING TO LARGER TEFLON LINED TUBING. ORDERED 3/8" x 5/8" SILICONE TUBING (20') FROM PINE. GO TO MW-19 START PURGE @ 1312, SAMPLE @ 1330 (A04BMW19 0001). KARL V. ASKS FOR REVISED SAMPLING SCHEDULE GO BACK TO TRAILER, KC PLACES PURGE WATER INTO LABELED DRUM WHILE TR WORKS ON SCHEDULE. PREP SAMPLES FOR SHIPMENT. TA COURIER ONSITE @ 1610; KC TO TEXTRON @ 1715, TR TO COMPLETE PAPERWORK FOR SHIPMENT.

9/16 — 5/8" ODX 3/8"

FRI 8/5 — AM M SUNNY 68°
ONSITE @ 0700, CALIBRATE YSI (DO: 98.5% pH: 7.0 10.0, TURBIDITY; 0.0, 126.0), PID (0.0, 101 ppmv). 'LOAD UP' AND SAMPLE 603D + MW-22 PRIOR TO CONF CALL. COLLECT MS/MSD 1 @ MW-22. GO TO MW-18, PURGE + SAMPLE @ 1245 (SHAWN A + LINDSEY B ONSITE FROM USACE) — COME BACK TO PACK SAMPLES, COOLERS, ETC. PREP BOTTLES/LABELS WAIT ON TA COURIER

MONDAY 8/8/11 AM M. SUNNY 72° HUMID

ONSITE @ 0645. VIKAS TANDON ONSITE, HOLD TAILGATE MTG. CALIBRATE YSI (DO: 97.5%, pH: 6.90, 10.0, NTU; 0.0, 126.0 PID: 0.0, 101 ppmv) SHOW VIKAS SEEP LOC. @ LOCKPORT BYPASS BRIDGE. USACE ONSITE (J. HALL, LINDSEY B) - GO OFF W/ VT TO SAMPLE SEEPS. TR/KC SAMPLE GW @ MW-11 (A02MW110001) @ 0910, A02MW090001 @ 1040, A02MW080001 @ 1140. SEEP01 @ 1035, SEEP02 1130. UPDATE COC - SEND TO TR TO PRINT.

0835
0930

TUESDAY 8/9/11 AM CLOUDY 68° RAIN PM CLOUDY RAIN. 73° F

ONSITE @ 0645, HOLD TAILGATE MTG W/ TR, CALIBRATE YSI 6200 (DO: 97%, pH 6.99, 10.01, NTU; 0.0, 126.0, PID: 0.0, 101 ppmv) VIKAST. ONSITE @ 0730. SET UP TO PURGE/SAMPLE @ 705D, DD (A04DMW1D0001) SAMPLE @ MW705D0001 @ 0835 SAMPLE @ MW705DD0001 @ 0930. WAIT ON 705 DD TO RECHARGE TO GET FILTERED SAMPLES - GET CALL FROM REG BURRIS - ALLVAC RE 2 INCIDENTS 8/8 @ 1236 + 1841(?) WHERE THEIR RAD DETECTION SYSTEM @

735-9769

SCALE TRIPPED ALTHOUGH NO TRUCKS WERE @ THE SCALE @ THE TIME (TR SPEAKS W/ HIM RE SHAW PRACTICES) KC OFFSITE @ 1055 TO COOPER FOR SILICONE TUBING, RETURN PINE PERISTALTIC PUMP. BACK @ 1235. GO ~~BACK~~ TO 711 CLUSTER TO SAMPLE 711D, DD HAVE TUBING PROBLEMS, ORDER THINNER WALL TUBING FROM FINDLAY FOR TEFLON LINED TUBING, GET TUBING TO WORK W/ SMALL PIECE OF SILICONE TUBING AND PURGE 711 D SAMPLE A04DMW711D @ 1445

WED 8/10 AM M. CLOUDY → M. SUNNY 65, BREEZY PM M SUNNY → M. CLOUDY BREEZY, 75°

~~FRIDAY~~ ONSITE @ 0650, CALIBRATE METERS (PID: 0.0 & 100 ppmv, YSI: 97.0% D.O., TURBIDITY: 0.0, 125.9, pH: 7.00 + 10.00. MOVE TO 604/709. SURVEYORS ONSITE TO SURVEY WELLS (GARY TEMPLETON, STAN) TAKE ON TOUR. SAMPLE 604D (A04DMW604D0001) @ 0830 TAKE NYSDEC SPLIT #1. SET UP @ 709DD, PURGE + SAMPLE (A04DMW709DD0001) @ 0930 DRIVE OVER TO 605D/704DD TO PURGE AND SAMPLE @ 1015 (A04BMW605D 0001) ALONG W/ 1ST DUPLICATE (MW605D) - (A04BMW9000) AND NYSDEC SPLIT #2. MOVE TO MW 704DD @ 1040 TO PURGE AND SAMPLE @ 1115 (A04BMW704DD 0001) ALONG W/ 2ND DUPLICATE (MW 704DD) - (A04BMW9001) AND NYSDEC SPLIT # 3 DROP OFF COLLECTED SAMPLES @ TRAILER @ 1155 FOR TR TO BEGIN SHOARS. RC TO MW 26 TO PURGE + SAMPLE @ 1320 (A04BMW-26 0001) AND NYSDEC SPLIT #4. DROP SAMPLES OFF @ TRAILER @ 1350 THEN WORK W/ MCINTOSH SURVEYING TO GET TO WELLS BEHIND RAD ROPE (MW 701, 702 + 703), MCINTOSH OFFSITE @ 1535.

THURS 8/11 AM M SUNNY, 65, BREEZY PM M. CLOUDY BREEZY 75°

ONSITE @ 0700, CALIBRATE PID (0.0, 102 ppm) JOHN MITCHELL ONSITE 0710 YSI: DO: 99.2, pH; 7.00, 10.00, TURBIDITY: -0.6, 126.5. MOVE TO 602D/702DD, SET UP TO PURGE/SAMPLE - GW VERY CLAY, TURBID (GRAY FROM 702DD), SAMPLE @ 0915 (A04AMW602D 0001) NYSDEC SPLIT, PURGE + SAMPLE @ 702DD @ 0945, SAMPLE @ 1015 (A04AMW702DD0001) LET WELL RECOVER @ 1040 WHEN FILLING LAST FILTERED BOTTLE. LET WELL SIT TO RECHARGE PACK UP TO DROP OFF BOTTLES @ TRAILER MOVE TO MW-13D TO PURGE + SAMPLE, SAMPLE @ 1200 (NYSDEC SPLIT) GO BACK TO 702DD TO FINISH SAMPLING AFTER SCRAWLING TILES AND FEET @ RAD ROPE. WL @ 702DD @ ~14.90' BTOC @ 1250

BUT COULD NOT GET WATER THROUGH FILTER - LET SIT SOME MORE. GO TO 708 DD AND SET UP TO PURGE/FILTER START @ 1340. SAMPLE @ 1410 (NYSDEC SPLIT / DUP #3)

TRANSFER 7 1-GALLON PLASTIC JUGS OF GROUNDWATER TO JOHN MITCHELL (USE TA COC TO DOCUMENT TRANSFER). JM OFFSITE @ 1500. I @ 708 DD @ 13.05' BTOC @ 1510, TAKE REMAINING FILTERED SAMPLE. DROP OFF PURGE WATER - OPEN 2ND DRUM FOR WATER. TAKE SAMPLE BACK TO TR

FRI 8/12

ONSITE @ 0830 (BLOODWORK), TR @ MW-25 PURGING/SAMPLING WELL - SAMPLE @ 0845; A04BMW250001, AND COLLECT 4TH DUPLICATE - A04BMW9003. GO TO MW-06 PURGE + SAMPLE @ 1000 (A02MW060001), GO TO MW-10 PURGE + SAMPLE @ 1055 (A02MW100001), GO OVER TO MW-07 AND PURGE + SAMPLE @ 1135 (A02MW070001). PREP SAMPLES FOR SAT DELIVERY TO TA-ST LOUIS.

MONDAY 8/15 CLOUDY 70°

ONSITE @ 0650, DO TAILGATE MTG, CALIBRATE PID; 0.0 ppmv (100 ppmv), YSI: DO: 97.7%, pH: 7.00, 10.00, NTU: 0.0, 125.9 START @ 706 D @ 0810 SAMPLE @ 0840 (A04BMW706 DI) 0001) MOVE TO 710 CLUSTER, 710D 0.3 ppmv, 710DD: 0.7, CAN'T GET FLOW @ DD w/ PERISTALTIC PUMP SO SET UP @ 710D, PURGE + SAMPLE @ 0955 (A04DMW710D 0001). INSTALL GRUNFOS PUMP IN 710DD KEEP GETTING "GROUND FAULT" MESSAGE @ CONTROLLER BOX + HAVE REPEATED CIRCUIT BREAKER TRIPS - CALL PINE DI DIAGNOSTICS - MUST HAVE SHORT IN PUMP CABLE - PINE TO SHIP NEW PUMP FOR 8/16 AM DELIVERY @ COMFORT INN MOVE TO 711 DD TO PURGE (1138) AND SAMPLE @ 1200

(A04CMW 7HDD 0001). RUN OUT OF AVAILABLE GW @ ~ 1210 @ ~ 18.5' BTOC AFTER FILLING VOAS + GW CHEM BOTTLE PARTIALLY. LET WELL RECHARGE GO BACK TO TRAILER TO BEGIN SAMPLE COUNTING. COLLECT REMAINING GW CHEM SAMPLE @ 1415. PREP SAMPLES FOR SHIPMENT. PREP FOR 8/16.

TUES 8/16 AM - CLEAR, 65° PM - SUNNY, 80°

ONSITE @ 0650, CALIBRATE YSI: DO 98.1% pH 10.00 + 7.00, NTU: 0.0, 126.0, PID: 0.0, 102 ppmv. GO TO 7HDD. GW WON'T LIFT IN TUBING ☒ @ ~ 15.8' BTOC CALL KVK - OK TO BAIL REMAINDER. GO TO MW 606D, MW-14 START 606D @ 0830 SAMPLE @ 0845 (A03MW606D0001) " MW14 @ 0900 " " 0915 (A03MW14 0001). MOVE TO MW 606DR START @ 0940 " " 0955 (A03MW 606DR0001). MOVE OF MW-15 (-NONE- CALL KVK RE VOCs), " " 1035 (A03MW15 0001). KC GOES BACK 7HDD TO BAIL REST OF BOTTLES @ 1150. BACK TO TRAILER @ 1210 - GO TO MW-17 TO PURGE + SAMPLE, SAMPLE @ 1300 - (A03MW17 0001) GO BACK TO CONTAINERIZE PURGE WATER, PREP SAMPLES SMEAR CONTAINERS / ACETATE TUBES, GATHER BOTTLES + LABELS FOR 8/17. CALL CLIFF FOR PICK UP

WED 8/17

ONSITE @ 0700, ✓ ON GRUNFOS PUMP MAKE CALLS, CALIBRATE YSI; DO: 98.8%, pH: 7.00, 10.00 NTUs: 0.0, 126.0. CALIBRATE PID; 0.0, 100.0 ppmv. TK PICKS UP PUMP @ HOLIDAY INN. GO TO 7HDD SET-UP GRUNFOS; GET UNDERVOLTAGE FAULT MESSAGE AS GENERATOR GFCI TRIPS REPEATEDLY. TK THINKS PROBLEM IS IN CONTROLLER PLUG. CALL PINE; WAIT FOR PINE NJ TO CALL - CLAUDIO CALLS @ 0835. HE SAYS GENERATOR PUTS OUT TOO WIDE A RANGE OF VOLTAGE FOR PUMP - SUGGESTS ANOTHER GENERATOR - CALL HERTZ TO ✓

ON ANOTHER GENERATOR. DRIVE TO HERTZ TO GET REPLACEMENT - TRY OUT 2ND GENERATOR, IT TOO TRIPS (21) WHEN PUMP LOAD ADDED TO IT. TAKE HERTZ GENERATOR OFF RENT. DRIVE BACK TO SITE. PURGE 707DD TO DRYNESS (~1.25 GALS) TAKE PARAMETERS - NO RECHARGE - CLOSE UP WELL. WAIT ON CALL FOR PINE ENV. DRIVE TO EXIT 45 TO GET REPLACEMENT CONTROLLER AND SMALL HONDA GENERATOR. TEST SET UP - OK, AND DRIVE BACK TO LOCKPORT - ARRIVE @ 1545 @ PLANT - GET BARHILL KEY FOR LOCKED ER GATES TO MW-4. GO BACK BEYOND NW GATE AND BEGIN CLEARING VEGETATION BACK TO MW-600 LOCATION

1545

THURS AM CLEAR 70°

PM M CLOUDY OCC SHOWERS 70°F BREEZY

ONSITE @ 0650, CALIBRATE YSI DO: 98.2, pH: 7.00, 10.00, NTUs: -0.1, 125.9 PID; 0.0, 100, PACK + MOVE BACK TO 707DD SET UP PINE'S HONDA GENERATOR, GRUNDFOS PUMP START PURGE @ 0805 SAMPLE @ 0825 (A04DMW710DD0001). MOVE TO MW 712DD AFTER COLLECTING EQUIPMENT BLANK #1 @ 0850. START PURGE @ 712DD (712D - DRY) @ 0918. ~~PUR~~ SAMPLE @ 0935 (A04DMW712DD0001) GO TO MW 707D. HAVE ~1.3' OF GW CALL KVK - HE WOULD LIKE VOAS COLLECTED THEN KEEP COMING BACK TO COLLECT REMAINING ANALYTES. COLLECT 2 VOAS @ (A04AMW607D0001) 1030 (A04BMW707DD0001). MOVE TO MW 607D PURGE + SAMPLE @ 1110. MOVE TO MW-20 PURGE @ SAMPLE @ 1205 (A04AMW20 0001). MOVE TO MW-21 PURGE + SAMPLE @ (A04AMW21 0001) 1245

8/19
AM
SUNNY
68°

PM
SUNNY,
90's SLT
BREEZY

ONSITE @ 0655, CALIBRATE YSI (DO: 97.2%, pH: 7.0, 10.00, NTU: 0.7, 126). PID WON'T CALIBRATE - CLEAN + REPLACE SCREEN, GET FAILED MESSAGE CALL FINDLAY - CLEAN W/ METHANOL - LET SIT ~1 HR - GO TO WELLS W/O AIR OUT. WELLS. GOT TO 607D/703DD SET UP @ 607D TO PURGE, SAMPLE @ 0845 (A03MW607D0001). SET UP GRUNFOS @ 703DD TO PURGE + SAMPLE. SAMPLE @ 0915 (A03MW703DD0001) COLLECT MS/MSD @ 703DD AS WELL. GO TO MW-16 TO PURGE AND SAMPLE @ 1030 (A03MW160001 AND DUPLICATE # 5 - A03MW9004). DROP OFF BOTTLES @ TRAILER FOR TR TO BEGIN COUNTING, KC TO MW-4 TO PURGE + SAMPLE @ 1200 (A02MW40001) HAVE TO SEND PID BACK AS GET "FAILED" MESSAGE AFTER CLEANING. DUMP ACCUMULATED PURGE WATER AND CLOSE UP PURGE WATER DRUM #2, NEED LABEL FOR PURGE WATER DRUM #3. GO TO 701DD TO PURGE AND SAMPLE @ 1340 (A04AMW701DD0001). GO TO 707DD TO TRY AND COLLECT ANIONS + GEN. CHEM. @ 1405

MONDAY
8/22/11
AM
SUNNY,
60°

ONSITE @ 0650, CALIBRATE YSI (DO%: 97.9% pH: 7.00, 10.00, NTUs: 0.0, 126.0. PID TO BE DELIVERED IN LATE AM). GET BOTTLES READY. GO THROUGH NW GATE TO GET TO 600 CLUSTER, PURGE + SAMPLE MW600D @ 0900 (A05BMW600D0001) MW 600S IS DRY. TALK W/ KVK + ED SHOCK RE: HYD. TESTING. MAKE UP MS/MSD LABELS FOR MW-5. GO TO MW-5 TO PURGE + SAMPLE (A02MW50001, MS, MSD) SAMPLE @ 1105. GO BACK TO TRAILER FOR TR TO COUNT - KC PURGES + SAMPLES MW-12 (A02MW120001) @ 1230. GO TO MW-03 TO PURGE AND SAMPLE @ 1345 (A02MW030001)

- 712 DD ? 711 D - 8/23 FILTERS DELIVERED
- 710 D
- 713 D - SOLID SLUG

(23)

TUES 8/23 SUNNY, 66°

pH: 7.00, 10.00

ONSITE @ 0650, CALIBRATE YSI (DO: 99.2%, NTUs; 0.0, 125.9) PID ARRIVED FROM FINDLAY CALIBRATED. GET EQUIPMENT TOGETHER GO TO MW-1 TO PURGE AND SAMPLE, START @ 0835 SAMPLE @ (A02MW010001) 0850. MOVE TO MW-2 (LAST WELL!) TO PURGE + SAMPLE (A02MW02 0001 AND DUPLICATE A02MW9005) @ 0930. SMEAR SAMPLES. GAS UP PINE GENERATOR AND DRIVE IT W/ GRUNFOS. TO TYCO ROCHESTER FOR J. MOYER TO DRIVE BACK TO PINE ON WAY HOME. DRIVE BACK TO SITE (5.8 VA EARTHQUAKE @ 1351). COLLECT ~ 700 ml FROM 707 DD FOR UNFILTERED TOTAL U. SHIP SAMPLES.

MW-713D 8/25 0953 @ 12.28' 0.9 ppmv ▽ @ 12.28' 713 DD TEST 4 IS REALLY 708 DD TEST 4

WED 8/24 SET UP FOR K TESTING W/ PNEUMATIC SLUG (PS) @ MW-710 CLUSTER; COULD ONLY DO 710 DD AS ▽ BELOW TOS IN 710 D (NEED TO DO SOLID SLUG (SS) TEST) HAD TO CONFIGURE 2" PVC EXTENSION DUE TO TOO LITTLE ANNULAR SPACE BTWN 4" CASING + 2" PVC TO TIGHTEN CLAMP. WORK ON GETTING RUGGED READER RECORDING

THURS 8/25 CALIBRATE PID (0.0, 100 ppmv) DO K TESTING @ MW-708 DD (PS-K TESTING), MW-713 D (SS-K TESTING) AND MW-712 DD (PS-K TESTING), 712 D STILL DRY.

FRIDAY 8/26 CALIBRATE PID (0.0, 100 ppmv) DO K TESTING @ MW-710 D W/ SOLID PVC SLUG W/ TRANSDUCER IN 710 DD DURING TESTS

7.55'

0, 100 ppmv

MONDAY 8/29/11
AM CLEAR 60°
PM SUNNY/BREEZY 75

ONSITE @ 0650 CALIBRATE PID, DO TAILGATE MTG. GO OUT TO MW 706 DD (MW-15 OFFSET TEST RUN) TO PERFORM SOLID SLUG TEST. RUN 3+ SETS OF RISING/FALLING. GO TO MW-711 CLUSTER PERFORM 3 SETS OF " " TESTS (VERY QUICK RECOVERIES) @ MW-711 D w/ MW-711DD OFFSET TESTING GOING ON CONCURRENTLY. SET UP PS ASSEMBLY @ MW 711 DD - GO TO TRAILER TO CHARGE RUGGED READER. COME BACK TO MW 711DD, PERFORM 3 PS TESTS (VERY FAST RECOVERY). MOVE TO 705 CLUSTER @ 1445. SET UP MW 705 DD OFFSET TEST THEN PERFORM MW 705D PS TESTS(4). SET UP MW 705 D OFFSET TEST (START @ 1602) THEN PERFORM MW 705 DD PS TESTS(4), END TESTS @ 1630

TUESDAY 8/30/11
AM SUNNY, 68°, BREEZY
PM

ON SITE @ 0655, CALIBRATE PID (0.0, 100.0 ppmv) GOT TO MW 703/607 CLUSTER; SET UP 607 D OFFSET TEST, 703 DD PS TEST. OFF TO MW 701 DD @ 0905; START TESTING (PS) @ 0930. ORDER NON-AQ IDW SAMPLE BOTTLES FROM TA (C. FOX) END MW 701 DD TESTING @ 1005. MOVE TO MW 702 DD/602 D, PULL TUBING AFTER MEASURING V @ ~ 9.00' BTOC @ 702 DD, VERY SLOW RECHARGE. ATTEND TEAM CONF. CALL @ 1100, V @ 1125 @ 702 DD: -9.82' BTOC, INSERT TROLL FINISH UP TESTS, MOVE TO MW 704 DD AT 1525. FINISH

WED 8/31
AM

ONSITE @ 0700 CALIBRATE PID (0.0, 100.0 ppmv). HAVE CONF CALL @ 0730 w/ VIKAST RE SLUG TESTING. GO TO DRUM AREA AND SAMPLE 7 DRUMS OF DEVELOPMENT/PURGE WATER FOR IDW ANALYSIS; SAMPLE @ 0930, SAMPLE SOIL/ROCK CUTTINGS FROM 4 DRUMS FOR NON-AQUEOUS IDW ANALYSIS @ 1020 GO TO 705 CLUSTER TO DO SOLID SLUG TESTING AS PER VT. GO TO MW 707 DD TO SAMPLE (PID; 0.1, V @ 38.21')

BRING BATTERIES EACH TIME

THURSDAY 1/26/12 IN 86,755 24
1130 DRIVE TO TEXTRON OUT 86,791
FOR DRUM TO STORE PURGED GW IN
(NEED LABELS).

MONDAY JANUARY 30, 2012 IN 86,961 206
AM- M CLOUDY, 26°, 4" SNOW OUT 86,755
PM- M SUNNY, 29°, WINDY
0800 LOAD UP TRUCK DRIVE TO
ALLIED. GO TO MW-710 CLUSTER.
DOWNLOAD DATA @ MW-710 D+DD. SET
UP PERISTALTIC PUMP, YSI @ 710D- CAN'T
GET GW TO SURFACE, BEGIN BAILING @ 1045

COLLECT GW SAMPLE @ 1100 PURGE MW-710DD, GW SAMPLE @ 1140. BREAK FOR LUNCH - WARM UP. @ MW-713D @ 1240 - DOWNLOAD DATA. SET UP TO PURGE @ 1300. SAMPLE MW-713D @ 1325. MOVE OVER TO MW-708DD @ 1335. TAKE WATER OVER TO DRUM THAT IS STAGED OVER BY THE OLD GUARD HOUSE (LABELLED - NON-HAZ). BACK @ 1425. SAMPLE MW-708DD @ 1450 AFTER REMOVING ~17 GALS of WATER. DRIVE TO OFFICE TO UNLOAD, CHARGE UP BATTERIES, J. SMITH OFFSITE @ 1600. KC ARRANGES SAMPLE DROP OFF. 8 HRS

TUESDAY JANUARY 31, 2012
AM - SUNNY, WINDY, 43°
PM - M SUNNY → P SUNNY, WINDY, 47°
0655 ARRIVE @ OFFICE, JEFF SMITH THERE SETUP CALIBRATION SOLNS FOR TROLL 9500 CALIBRATE MW-713D, MW-708DD (0745-0815), MW-710D, MW-710DD (0850-0910) LOAD TRUCK TO GO TO GUTERL, ARRIVE @ 1005 PICK UP BUCKETS/FILTERS, GO TO DOWNLOAD AND PULL REMAINING TROLLS. SHOVEL SNOW BANK (PLOWED UP SNOW) FROM OVER MW-26 - PVC WELL CAP FROZEN ONTO

PVC RISER PIPE, DOWNLOADED. GO TO MW-707DD, DOWNLOAD LEVEL TROLL, BUT 9500 REPORTS "TEST IN ERROR!" SEEMS NO DATA TO RETRIEVE (?) - PULL TROLLS, MEASURE TD: (@ ~18.11 BTOC w/o TROLLS) TD ~ 39.62' BTOC. JEFF REMINDS ME WE HAD PROBLEM W/ THAT UNIT BEFORE - ✓ NOTES - HAD BATTERY + CONNECTION PROBLEMS. DOWNLOAD REMAINING TROLLS. OFFSITE FOR LUNCH @ 1215. ONSITE @ MW-710 CLUSTER TO REINSTALL TROLLS @ 1245. REINSTALL MW-710D @ 1310; START TEST (TEST #1), MOVE TO MW-710DD, MOVE TO MW-708DD OFFSITE TO OFFICE @ 1410, UBERTY TIRE IS ~0.3 MILES FROM SITE (TIRE FIRE THERE LAST FRIDAY, ~4 FRAC TANKS @ SITE TO COLLECT IMPACTED WATER). CALL KC ABOUT FROM OFFICE @ 1500, BACK ONSITE TO CALIBRATE 6 REMAINING TROLLS 9500, START w/ 709DD. MW-604D, MW-704DD, MW-26, MW-605D AND MW-707DD. CHECK BATTERY VOLTAGE - OK AND DISPLAY INDICATES TEST RUNNING - DOWNLOAD DATA AND CHANGE OUT BATTERIES THEN CALIBRATE. GET ERROR "WRITE ERROR"

ON RUGGED DO CAL REPORT. CALL IN-SITU - JOHN SUGGESTS REPEATING DO CAL. REPEAT DO CAL - GET NO MESSAGE SO END CALIBRATION @ 1715.

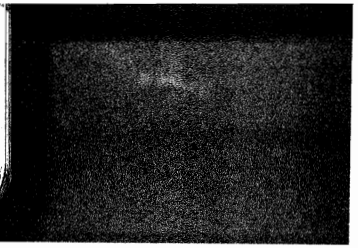
WEDNESDAY FEBRUARY 1, 2012
AM - CLOUDY, BREEZY, 40° (RAIN OVERNIGHT)
PM - " " "

0715 @ OFFICE, CALIBRATE YSI 6280 LOAD TRUCK AND DRIVE TO GUTERL, ON-SITE @ 0850 SET UP @ MW-26 AND MW-707DD. SET UP PERISTALTIC PUMP / YSI SAMPLE MW-26 @ 0945 FOR TOTAL/FILTERED U + 150 U. SETUP @ MW-707DD - CAN'T GET WATER FLOWING W/ PERI PUMP HAVE TO BAIL INTO BUCKET THEN USE PUMP FOR FILTERED SAMPLES, NO YSI PARAMETERS COLLECTED @ THIS WELL SAMPLE FOR TOTAL U TOTAL 150-U @ 1020. TAKE FILTERED SAMPLES FROM WATER BAILED INTO BUCKET VIA PERISTALTIC PUMP TAKE TOTAL SAMPLES DIRECTLY FROM BAILER. GO TO MW 605D START PERISTALTIC PUMP @ 1100. SAMPLE 605D / DUPLICATE (MW-9006) @ 1130. GO TO LUNCH @ 1150. CALL TA RE EXTRA BOTTLES / COURIER SERVICE. BACK @ 1240 AFTER GETTING GAS / SUPPLIES

PURGE MW-704DD @ 1245. PURGE AND SAMPLE @ 1330, COLLECT MS/MSD @ 704DD. DRIVE TO DUMP GW INTO DRUM. MOVE TO MW-604D + MW-709DD. SAMPLE 604D @ 1455. TA VAN ONSITE @ 1500 W/ ADDL BOTTLES FOR 709DD SAMPLE 709DD @ 1505. TEAR DOWN AND DUMP GW INTO DRUM (DRUM IS FULL). 9 FILTERS LEFT. OFFSITE @ 1530, @ OFFICE @ 1600 UNLOAD.

THURSDAY FEBRUARY 2, 2012
AM: CLOUDY, 30°, LT SNOW FLURRIES
PM -
0730 @ OFFICE, LOAD TRUCK, LEAVE @ 0830 TO GUTERL TO RE-INSTALL 9500 TROLLS / LEVEL TROLLS INTO 6 WELLS ONSITE @ 0900. REINSTALL @ 0912 MW-26, MW-707DD (0917), MW-704DD (0928), MW-605D (0935), MW-709DD (0956), MW-604D (0950). DRIVE BACK TO OFFICE TO DECON EQUIPMENT / SHIP BACK TO SHAW + PINE. OFFSITE @ 1005, @ OFFICE @ 1030, UNLOAD.

WEDNESDAY MAY 2, 2012 IN 92,555
0915 GO TO HARRISON BROS OUT 92,509
FOR 2 DRUMS. (JAZZY) @ 32
APPENHEIMER AVE. BFLO, NY 14214.



THURSDAY MAY 3, 2012 IN 92,674
AM - M. CLOAK, 50° OUT 92,579
PM - M SUNNY, 75° WINDY ~~92,674~~ ac
0730 LOAD TRUCK W/ SAMPLING EQUIPMENT. ARRIVE @ GUTERL @ 0825. GET DEDICATED TUBING FROM GUARD HOUSE AND GO TO MW 710 CLUSTER TO PURGE/SAMPLE. CAN'T GET GW TO RISE UP TUBING VIA PERISTALTIC PUMP, USE DISPOSABLE BAILERS TO PURGE WELLS, SAMPLE MW-710D @ 0935 FOR TOTAL + ISOTOPIC U (FILTERED + UNFILTERED), MW 710DD @ USACE STOPS BY WHILE @ MW 710DD 1035 (M. LEGEZA, S. HINT, CONTRACTS PERSON) - DISCUSS SEEP SAMPLING. DUMP 710DD GW AND GO TO MW-713D. PURGE W/ PERISTALTIC PUMP, SAMPLE @ 1145. DROP OFF PURGED GROUNDWATER, OFF FOR LUNCH. @ MW-708 @ 1245, SET UP TO PURGE, SAMPLE @ 1400. DROP OFF 1120. GO TO MW-605D/704DD CLUSTER. BEGIN PURGE OF 605D @ 1433. SAMPLE @ 1515, DUP-01 MOVE TO MW 704DD, SAMPLES @ 1605. STORE EQUIPMENT + OFFSITE TO TONAWANDA @ 1630. @ OFFICE @ 1700, UNLOAD TRUCK.

FRIDAY MAY 4, 2012
AM - CLOUDY, 61°, WINDY
PM - P SUNNY, 72°F
0700 @ OFFICE, LOAD TRUCK, OFF-SITE @ 0715, BIG BACKUP ON 290 E (C CAR ACCIDENT) ARRIVE @ GUTERL @ 0800. GO TO MW-26/MW-707DD. SAMPLE 707DD @ 0840, MW-26 PURGED AND SAMPLED @ 0935. GO TO MW 709DD 604D CLUSTER. PURGE + SAMPLE MW-604D (+ MS(MSD) @ 1040. PURGE MW-709DD W/ BAILER, SAMPLE @ 1130. TEAR DOWN EQUIPMENT, DECON. CLIFF (TA) ONSITE @ 1150, SIGN OFF COCS, HE LEAVES @ 1205. DRUM WATER AND SECURE LID. LEAVE BOTTLES/COOLER/LABELS + COCS IN OLD GUARD HOUSE FOR USACE SEEP SAMPLING. OFFSITE @ 1210. BACK @ OFFICE 1245, UNLOAD TRUCK, DECON EQUIPMENT.

USACE/GUTEKL FUSRAP 3Q 2012 GW 159

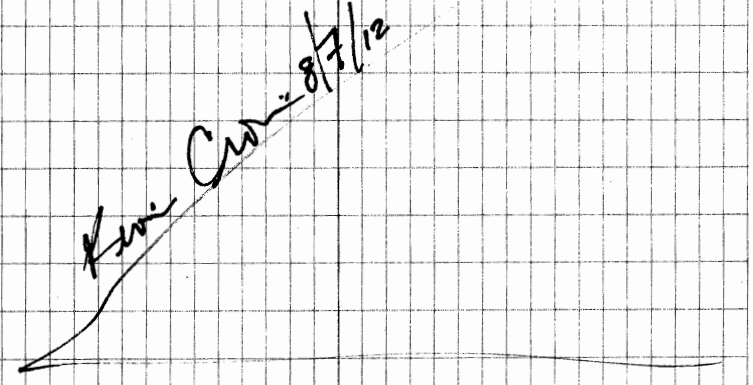
THURSDAY AUGUST 2, 2012 IN 98,917
DRIVE TO HARRISONS OUT 98,758
FOR DRUM TO CONTAINERIZE GROUND
WATER. PREPARE FORMS/LABELS, GATHER
SUPPLIES.
FRIDAY AUGUST 3, 2012
0745 @ OFFICE, LOAD TRUCK, CALL. HEAT
AM - M SUNNY, 80°
PM - SUNNY, 95°
OFF TO SITE. JEFF S. WILL BRING BOTTLES
WHEN DELIVERED. DROP OFF DRUM/PALLET @
OLD GUARD HOUSE, GET TUBING, ETC. GO TO
MW 710 CLUSTER TO DOWNLOAD DATA.
DOWNLOAD MW-710 DD & MW-710D. JEFF
ONSITE W/ BOTTLES @ 1025. PURGE &
SAMPLE MW-710D, MW-710DD. MOVE
TO MW-713D @ 1210. DOWNLOAD
MW-713D, LUNCH. GO TO MW-708D - JEFF
DISCOVERS WATER IN BATTERY COMPARTMENT
(LIKE 709 - COMPARTMENT WAS TIGHT -
"O" RINGS GOOD - CAN'T FIGURE HOW WATER
IS GETTING IN) CALL KARL. HE SAYS TO
SEND 9500 + CABLE BACK TO IN-SITU.
SHEILA H + ANOTHER GUY FROM USACE
ONSITE @ 1305 TO TRY OUT WITH 4"
PUMP @ MW-710DD. REINSTALL 9500

IN MW-709DD @ 1515 - SET TO TAKE READINGS BEGINNING @ 1800 AS OTHERS SAMPLE MW 708 DD @ 1520. PACK UP AND TAKE GW TO DRUMS. JS OFF SITE @ 1545. KC DUMPS WATER ON LOAD BOTTLES + EQUIPMENT. OFF FOR OFFICE @ 1600. @ OFFICE @ 1630 - UN LOAD.

MONDAY AUGUST 6, 2012
AM - SUNNY, 70°
PM - SUNNY, 83°
0700 @ OFFICE, LOAD TRUCK. DRIVE TO GUTERL - GET EQUIPMENT @ GUARD HOUSE GO TO MW-605D / MW 704DD DOWN LOAD DATA AND SET UP TO PURGE / SAMPLE. MW-605D WILL BE DUPLICATE OZ. GO TO MW-26 @ 1045. SAMPLE MW-26 + MW-707DD (1225) - USED NARROW DIAMETER TEFLON TUBING PROVIDED BY S. HINT / PETER LOREY (USACE) ON FRIDAY. KARL V. REQUESTS MW-710D + MW-710DD BE RE-SAMPLED USING THIS TUBING, SAMPLE MS/MSD @ MW-604D, SAMPLE MW-709DD. MW 710D & MW-710DD. 3 DRUMS FULL OF PURGED GW, NEW DRUM ~ 1/4 FULL 12 FILTERS REMAIN FROM NEW SHIPMENT.

OFFSITE TO OFFICE @ 1640. BACK @ OFFICE @ 1710, UNLOAD TRUCK. 10.5

TUESDAY AUGUST 7, 2012
AM - SUNNY 73°
0900 CALL CANDY FOX @ TA RE TIME OF SAMPLE PICKUP - SHE'S OUT OF OFFICE - CALL LISA SHAFER, SHE'LL W/ COURIER - HE'S ON HIS WAY TO SITE (DID NOT CALL ME AS C. FOX SAID HE WOULD 8/6) DRIVE TO GUTERL + MEET W/ JAY (716-807-8729), SIGN COCs OFF SITE @ 1000



MONDAY OCTOBER 22, 2012 IN 104,667 ✓
AM - SUNNY, BREEZY 49° OUT 105,833 ✓
PM - SUNNY, 60°
0645 @ OFFICE TO LOAD TRUCK, JEFF SMITH @ OFFICE ALREADY. GATHER AND LOAD EQUIPMENT. DRIVE TO GUTAKE @ 0740 ONSITE @ 0820, ✓ RETURNED TROLL 9500 S/Ns. LOAD EQUIPMENT FROM GUARD HOUSE + GO TO MW-704DD; DOWN LOAD LEVEL TROLL + TROLL 9500 (RENTAL SN 50112). GET MESSAGE ABOUT RUGGED DO ERROR, BATTERY 55% CALL EVK RE TEST STOP, BATTERY 0%. "UNKNOWN RUGGED DISSOLVED OXYGEN SENSOR CAP ERROR HAS OCCURRED." START MW-704DD PURGE @ 0915 DOWNLOAD MW-605D: ▼ @ ~2.45' BTOC DOWNLOAD LEVEL TROLL + TROLL 9500 (RENTAL S/N 48193) TEST RUNNING. TAKE PARAMETERS @ MW-704DD. INSTALL RDO SENSOR ON REFURBISHED 704DD TROLL 9500 (S/N 50689) @ 1000 FOR REDEPLOYMENT. SAMPLE MW-704DD @ 1030 FOR TOTAL U/ISOTOPIC U (FILTERED/UNFILTER) SETUP TROLL 9500 ORIGINAL S/N 50689 @ MW-704DD CALL IN-SITU RE SYNCING TROLL + COMPUTER.

GO TO S/N UNIT, CLICK EDIT, CHOOSE CLOCK + SYNC W/ COMPUTER.

REINSTALL LEVEL TROLL + 9500 @ 1105.
GO TO GUARD HOUSE TO DUMP 704DD H_2O
GET CALL FROM USACE TO MEET @ MW-710 CLUSTER. P. LOREY ONSITE - DOWNLOAD DATA @ MW-710D + WHILE HE OBSERVES. HE HANDS OVER VOCS JARS. SET UP TO PURGE MW-710D - CAN'T GET WATER UP THROUGH LARGER DIAMETER TEFLON-LINED TUBING / THICKER WALL SILICON. ASK PL IF THEY HAVE ANY. PL BRINGS NARROW TEFLON TUBING - ABLE TO GET WATER FLOWING W/ THIS TUBING. PURGE WELL TILL 1250 THEN COLLECT SAMPLES; 3 VOAS FOR 8260 FOR USACE (TURN OVER TO PLOREY) AND RAD SAMPLES. REINSTALL TROLL 9500 (S/N 50684) @ MW-710D - SHOW LOREY HOW TO SET UP TEST. MOVE TO MW-704DD @ 1335, DOWNLOAD TROLLS. GET ERROR MESSAGE FROM REFURBISHED TROLL 9500 (~~RENTAL~~ EC UNIT. TRY 3X TO CONNECT - PULL UNIT - WATER IN BATTERY COMPARTMENT (!) P. LOREY OBSERVES CALL EVK RE. DRY OUT AND REPLACE BATTERIES. THIS UNIT WAS PUT BACK IN SERVICE 9/5/2012. GET NOTICE THAT "RDO SENSOR CAP EXPIRES IN 10 DAYS" CALL IN-SITU

(ROB) AND ASK IF WE CAN SWITCH OUT CAP W/ ONE FROM RENTAL UNIT - HE SAYS IT WOULD BE OK. LET KVK KNOW THAT 708DD IS NOT A RENTAL UNIT - SO IT'S HAD WATER PROBLEM 2X. TEST STOPPED ON 10/14/12. (CALL KVK). SWITCH OUT CAP - JEFF GREASES RDO CAP O-RINGS + BATTERY COMPARTMENT O-RINGS. SET TEST TO START @ 1800, SYNC'D CLOCK W/ COMPUTER. PURGE 708DD @ 1435, SAMPLE @ 1515. MOVE TO MW-710DD @ 1540. TRY AND USE TRUCK BATTERY FOR PERI. PUMP - WON'T RUN - USE RECHARGEABLE BATTERY. CALL TIA FOR PM COURIER ON 10/23/12! REPLACE RDO CAP ON MW710DD TROLL 9500 W/ ONE FROM RENTAL UNIT; COMPUTER BATTERY RUNS OUT DURING TEST SET UP. HOOK UP COMPUTER TO AC/DC CONVERTER TO POWER UP W/ TRUCK. COMPLETE MW710 DD TEST SET UP. @ 1700 TROLL 9500 IS DROPPED DOWN WELL AS KNURLED CONNECTION NOT SECURE - TOP OF TROLL IS ~ 40' BGL - CALL KVK - NO IDEA HOW TO GET OUT SUGGESTS CALLING IN-SITU - TALK W/ JENNY MANN - CAN ONLY SUGGEST FISHING OUT. GO TO GUARD HOUSE TO GET BAILER LINE. TRY TO FISH W/ TREBLE HOOK

WORK ON FISHING FROM 1710 - 1855 UNSUCCESSFUL; NO WHERE TO GRAB ONTO TOP OF TROLL AND TROLL IS TOO WIDE TO FIT SOMETHING DOWN ALONG SIDE OF PVC SCREEN. NEED A CLAMP OR LASSO OF SOME SORT TO ATTACH ONTO TOP NUB. OFFSITE @ 1900, BACK @ OFFICE @ 1930

TUESDAY OCTOBER 23, 2012
AM - RAIN (HEAVY OVERNIGHT), 54°
PM - RAIN, MIST, 56°
0700 @ OFFICE. LOAD TRUCK, OFFSITE TO GUTEL @ 0935, ARRIVE ONSITE @ 0945. TALK W/ DALE GRAMZA (NATURE'S WAY) RE TROLL - SOLD HIM PVC OF RENTAL UNIT ON JEFF'S PHONE. PLAN TO PULL TROLLS @ MW-708 AND LOWER ONTO GUARD SHACK LINE TO RAIN. TOO WINDY FOR PVC USE. GET CALL FROM B SCOVILLE RE TUBING; SEND HIM PHOTOS TOO. JANICE 860-2414, NICKY 863-5044
TALK W/ GRAMZA - HE'D LIKE UNIT TO LOOK @ - DROP ONE OFF @ NEW WALMART SITE BTWN 10-11 AM. TALK W/ BILL S RE RENTAL TROLL UNIT BEING STUCK IN, ~~TAKE~~

@MW-605D (TOP OF TROLL ~ 13.15' BTOC)
CALL GRAMZA RE STUCK TROLL. ABLE TO PULL MW-26 RENTAL TROLL OUT. ABLE TO PULL MW-604D RENTAL OUT. MARK LEGEZA CALLS FOR WELL KEYS - DIRECT HIM TO OLD GUARD HOUSE FOR SAME. JEFF OFFSITE @ 0900 TO DELIVER RENTAL TROLL + CABLE TO NATURE'S WAY SURV. CRONIN LOWN COALS TROLLS. (604D: RENTAL S/N 48742) GET ERROR #6084 - "UNKNOWN FAILURE OCCURRED! CONNECTION WILL BE DROPPED." 4X CALL IN-SITU; TRY NEW BATTERIES SWITCH OUT CABLE - GET ERROR #6146 - PROBABLY BATTERY NEEDED - J. SMITH TO GET SUPPLIES HE'S OFFSITE @ 1035. DOWNLOAD MW-26 TROLL 9500 - GET ERROR #6084 MESSAGE AGAIN. RESTART COMPUTER. DOWNLOAD MW-26 LEVEL TROLL DATA, MW-709DD LEVEL TROLL DATA, MW-707DD TROLL 9500 DATA (BATTERY @ 80%), MW-713D LEVEL TROLL, GET ERROR #6084 ON RENTAL TROLL 9500 @ MW-713D (BATTERY @ 64%). JS BACK ONSITE @ 1100. CHANGE TO FRESH BATTERIES IN MW-604DR. LAST READING 10/23 @ 0600. DOWNLOAD MW-26R TROLL 9500; LAST READING ALSO 10/23 @ 0600. REPLACED BATTERIES + GREASED O-RINGS IN MW-709DD TROLL 9500. SET UP TEST

FOR MW-707DD TROLL 9500, MW-605D TROLL 9500, MW-26 (NEEDS NEW RDO CAP) MW-604D (ALSO NEEDS NEW RDO CAP) - BOTH EXPIRE IN 8 DAYS; TALK W/ BILLS RE CAPS - SOME BEING ORDERED. PUT MW-26 BACK IN WELL, PULL MW-707DD LEVEL TROLL TO DOWNLOAD. REINSTALL MW-604D + MW-709DD. BILL S SAYS MARK HARDNER WILL BE ONSITE 10/24 TO QC US. START PURGE @ MW-713D @ 1305 - NO PARAMETERS TAKEN DUE TO LNAPL FILM ON PROBE WHEN GAUGING. SAMPLE MW-713D @ 1330. GIVE 3 VOAS TO MARK LEGEZA. GO TO MW-604D (DO NOT MS/MSD + DUPLICATE [INSTEAD OF 605; WHERE TROLL IS HUNG UP IN] - AS PER BILL S APPROVAL START PURGE @ 1420. SAMPLE @ 1505. MOVE TO MW-709DD; PURGE + SAMPLE @ 1640. MOVE TO MW-707DD @ 1710. U DROPS QUICKLY IN WELL. SAMPLE @ 1750 COLLECTED ~ 1/8 OF FILTERED ISOTOPIC U BUT NO FILTERED TOTAL U - LAB WILL NEED TO SPLIT SAMPLE. M 707 DD DRIES OUT. OFFSITE @ 1830 @ OFFICE @ 1900

@ WEDNESDAY OCTOBER 24, 2012
AM - CLOUDY, MISTY, 52°, RAIN
PM - CLOUDY, 65°
0645 @ OFFICE, DECON WC METER, CALIBRATE YST 6920, DO TAILGATE MTG, GET SUPPLIES TO RETRIEVE TROLL. 0800 DRIVE TO GUTERL (MARK HARDNER @ SITE). ON SITE @ 0830. GET W/ MARK HARDNER. LOAD UP TRUCK. GO TO MW-605D USE 15' OF 1" PVC SCREEN TO PUSH DOWN ON TOP OF TROLL - FREES UP AND OUT OF HOLE @ 0905. CALL BS. PURGE + SAMPLE MW-605D @ 1015 - COLLECT 3 VOAS FOR USACE. GO BACK TO GUARD HOUSE FOR TROLL FOR 605D; FIND @ " " THINK MW-713D + 605D TROLL ARE SWITCHED SWITCH OV TROLL 9500S AND SET UP NEW TESTS TO START @ 1400. REINSTALL TROLLS @ MW-713D AND MW-605D MOVE TO MW-26 @ 1145. PURGE AND SAMPLE @ 1245. HAND VOAS OVER TO P. LOREY/USACE. CALL TA FOR COURIER - BE HERE ~ 1330. DROP EQUIPMENT OFF @ GUARD SHACK DUMP WATER, 4 FULL DRUMS AND 1 DRUM W/ <10 GALLONS IN. TA COURIER ONSITE @ 1340 - SIGN COCs AND TRANSFER SAMPLES. JEFF AND MARK FASHION GILL

NETTING TO 1" PVC SCREEN SECTIONS GO TO MW-710DD @ 1405. TRY DIFFERENT CONFIGURATIONS OF GILL NETTING ATTACHED TO 1" PVC. @ 1620 GET TROLL 9500 OUT OF HOLE W/ NETTING(!) BREAK DOWN PVC + EQUIPMENT. MARK HARDNER OFFSITE @ 1700. JEFF/KEVIN OFFSITE @ 1710 GAS UP TRUCK. BACK @ OFFICE @ 1740 - UNLOAD TRUCK DONE @ 1800 11.25

APPENDIX B

Sample Collection Logs
(Provided on same CD as Appendix A)

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW 1 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

PID readings 0.0 ppm

(A) Depth to Water: 7.09

(B) Total Depth: 16.89

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.5 **Equipment:** Peristaltic

Purge Start Date/Time: 8-23-11 / 0835 **Serial No:** LVE 002920

Sample Date/Time: 8-23-11 / 0850 **Equipment:** YSI 650

Weather: Clear, calm, 65°, 50% humid **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~, mtls, U, & gen chem

Comments: Water contains Red Flocculants (≈20% by volume) water is clear.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0836	7.88	.2	7.00	14.66	2.614	2.41	120.6	90.1
0840	8.04	.8	6.87	14.26	2.595	0.57	72.8	-5.7
0843	7.75	1.0	6.87	14.56	2.666	0.46	58.9	23.2
0845	7.72	1.2	6.87	14.56	2.756	0.53	56.7	-7.3
0846	7.73	1.3	6.86	14.54	2.769	0.58	55.3	-2.9
0847	7.72	1.4	6.86	14.53	2.770	0.58	55.4	-3.7
0848	7.76	1.5	6.86	14.54	2.771	0.59	55.3	-3.9
			8-23-11					
			TR					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW2 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 8.46

(B) Total Depth: 16.01

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.2 **Equipment:** Peristaltic

Purge Start Date/Time: 8-23-11/0915 **Serial No:** LVB 002920

Sample Date/Time: 8-23-11/0930 **Equipment:** YSI 650

Weather: Clear, calm, 70°, 50% humidity **Serial No:** 85281

Sampling Parameters: (circle) VOCs

Comments: Water is clear.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0916	8.58	1.2	7.57	15.63	0.668	2.04	-157.8	-8.9
0920	8.52	.5	7.37	15.17	0.608	0.51	-173.1	249.9
0924	8.55	.9	7.34	15.07	0.603	0.41	-172.5	79.8
0925	8.54	1.1	7.33	15.08	0.602	0.35	-172.9	200.1
0926	8.54	1.2	7.34	15.09	0.602	0.34	-170.8	199.7
0927	8.54	1.3	7.34/7.45	15.08	0.601	0.33	-180.3	-9.9
0928	8.54	1.4	7.35	15.07	0.601	0.35	-180.7	-10.0
			8-23-11					
			JL					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-03 **Personnel:** KEVIN CROWLEY

Casing Dia. (in): 2" PVC

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: ~5.52' BTOC

(B) Total Depth: _____

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other _____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = _____ **Equipment:** GEO PUMP

Purge Start Date/Time: 8/22/11 1330 **Serial No:** LVE 002920

Sample Date/Time: 8/22/ 1345 **Equipment:** YSI 6280

Weather: M. SUNNY, BREEZY, 72°F **Serial No:** 85281

Sampling Parameters: (circle) (VOCs, ANIONS, GEN CHEM, FILTERED/UNFILTERED TAL METALS, TOTAL & ISOTOPIC U.

Comments: REDDISH, SLT TURBID, CLEARING UP

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	mg/l DO	ORP (mV)	Turb. (NTU)
1332	~5.52'	0.1	6.92	14.77	0.764	1.05	-66.4	49.3
1335	5.57'	0.3	6.85	14.39	0.754	0.49	-62.5	44.1
1337	5.58'	0.7	6.84	14.49	0.749	0.43	-60.0	26.7
1340	5.59'	1.0	6.84	14.46	0.745	0.31	-58.0	13.4
1342	5.58'	1.5	6.84	14.37	0.744	0.31	-56.2	7.7

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-4 **Personnel:** Kevin Crowin

Casing Dia. (in): 2" PVC

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: ~6.19' BTOC

(B) Total Depth: ~16.40'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = ~1.7 **Equipment:** Peristaltic Pump

Purge Start Date/Time: 8/19/11 1145 **Serial No:** CVE 002920

Sample Date/Time: 8/19/11 1200 **Equipment:** YSI 6280

Weather: Sunny, 75 **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), Gen Chem/Anions, (TAL Metals Total + Isotopic U; Filtered + Unfiltered)

Comments: Clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO mg/L	ORP (mV)	Turb. (NTU)
1148	6.85	0.1	7.51	16.72	0.605	1.99	53.6	64.3
1150	6.83	0.3	7.36	16.02	0.648	1.79	71.8	193.7
1152	6.85	0.5	7.30	15.85	0.649	1.32	84.8	17.7
1154	6.84	0.7	7.30	15.66	0.647	0.67	90.3	-10.9
1156	6.83	1.0	7.30	15.69	0.642	0.73	93.6	86.6
1158	6.82	1.2	7.28	15.75	0.639	0.51	96.3	198.4

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-05 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 5.44'

(B) Total Depth: _____

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other _____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = _____ **Equipment:** Peristaltic

Purge Start Date/Time: 8-22-11 / 1047 **Serial No:** LVE-002920

Sample Date/Time: 8-22-11 / 1105 **Equipment:** YSI-650

Weather: Partly cloudy 65°, 5 mph, wind, 70% humidity **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), m+s, U, O gen chem

Comments: water is clear COLLECTED MS/MSD @ THIS LOCATION

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1048	5.50	0.2	7.24	14.14	0.701	3.80	-35.3	-0.6
1053	5.55	0.7	7.02	12.94	0.686	0.85	-82.8	22.1
1055	5.57	1.0	7.02	12.87	0.689	0.56	-84.7	-4.1
1057	5.58	1.2	7.02	12.88	0.693	0.51	-86.4	-2.7
1059	5.59	1.4	7.02	12.78	0.694	0.56	-85.5	-5.0
1100	5.60	1.5	7.03	12.72	0.694	0.44	-85.4	-4.8
1101	5.61	1.6	7.03	12.67	0.695	0.39	-87.8	-4.1
1102	5.62	1.7	7.03	12.66	0.695	0.37	-88.1	-4.7
			8-22-11					
			TR.					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-06 **Personnel:** TRENT RICHARDS

Casing Dia. (in): 2" KEVIN CROWLEY

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: ~7.67' PID: 0.2 ppmv

(B) Total Depth: ~19.0'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.8 **Equipment:** Peristaltic

Purge Start Date/Time: 8/12/11 0940 **Serial No:** LVE 002920

Sample Date/Time: 8/12/11 1000 **Equipment:** YSI-650

Weather: SUNNY, 70° **Serial No:** 85287

Sampling Parameters: (circle) ~~VOCs~~ TPH 8.12.11 Mtls, U, & gen chem

Comments: Water is clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0942	8.22	0.2	7.30	14.30	1.138	3.08	88.1	46.4
0946	8.22	0.5	7.01	13.66	1.067	0.87	86.9	150.5
0948	8.23	0.7	6.98	13.68	1.058	0.46	89.3	8.9
0950	8.25	1.0	6.97	13.64	1.035	0.36	90.2	73.9
0952	8.27	1.2	6.96	13.70	1.018	0.41	91.2	0.6
0954	8.28	1.5	6.96	13.78	1.017	0.39	91.4	21.0
0955	8.28	1.7	6.96	13.76	0.994	0.27	93.0	79.2
0956	8.27	1.8	6.96	13.78	0.993	0.27	93.3	80.9
			8-12-11					
			TR					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-07 **Personnel:** K. Cronin
T. Richards

Casing Dia. (in): 2"

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 7.90 PID reading 0.3 ppm

(B) Total Depth: 20.18

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.9 **Equipment:** Peristaltic

Purge Start Date/Time: 8-12-11 / 1115 **Serial No:** LVE 002920

Sample Date/Time: 8-12-11 / 1135 **Equipment:** YSI 650

Weather: Clear, calm, 80°, humidity 70% **Serial No:** 85287

Sampling Parameters: (circle) ~~VOCs~~ mtls, U, & gen chem

Comments: First 15 gallons very red, flocculant of Fe,

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1118	8.00	.52	7.67	24.68	0.005	7.03	43.0	49.5
								TR 8-12-11
~~1122~~	~~8.09~~	~~.8~~	~~7.86~~	~~25.67~~	~~0.005~~	TR 8-12-11		
1123	8.09	.8	7.20	16.00	0.895	1.07	-43.4	29.5
1127	8.12	1.2	7.03	15.43	0.887	0.28	-35.1	17.1
1129	8.15	1.4	7.02	15.37	0.886	0.25	-32.9	6.0
1130	8.17	1.6	7.01	15.35	0.883	0.23	-31.5	6.3
1131	8.13	1.8	7.01	15.38	0.882	0.22	-30.4	6.4
1132	8.14	2.0	7.01	15.37	0.881	0.20	-29.9	6.5
		8-12-11 TR						

Slightly cldy (Red)

Clear and Chamber

water clear

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-08 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 9.19' PID reading = 1.1 ppm

(B) Total Depth: 20.16'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic Pump

Purge Start Date/Time: 8-8 / 1116 **Serial No:** LVE 002920

Sample Date/Time: 8-8 / 1140 **Equipment:** YSI 650

Weather: Partly cldy, 80°, 5mph breeze-80° **Serial No:** 85281

Sampling Parameters: (circle) (VOCs) Monday Ke / mtls, U, + gen chem

Comments:

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO (mg/l)	ORP (mV)	Turb. (NTU)
1117	9.91	~0.1	6.91	14.64	1.996	2.30	-77.5	-1.8
1122	10.12	~0.3	6.81	14.25	1.975	1.38	-77.5	-1.5
1123	10.30	~0.6	6.80	14.24	1.950	0.73	-74.6	-0.6
1125	10.65	~1.0	6.80	14.24	1.947	0.63	-73.5	3.0
1128	10.55	~1.2	6.80	14.20	1.963	0.42	-73.7	-2.0
1130	10.50	~1.4	6.80	14.24	1.967	0.35	-76.3	-0.2
1133	10.49	~	6.80	14.37	1.971	0.24	-81.2	-0.8

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-09 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

PID reading = 0.2 ppm

(A) Depth to Water: 8.38'

(B) Total Depth: 19.13'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic Pump

Purge Start Date/Time: 8-8/1018 **Serial No:** LVE 002920

Sample Date/Time: 8-8/1040 **Equipment:** YSI 650

Weather: Cldy, 80°, calm, humid 80% **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, & gen chem.

Comments: Water is clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1018	8.77	.2	7.38	17.58	0.735	2.00	-146.3	28.4
1022	8.78	.5	7.06	15.68	0.692	0.36	-180	19.4
1026	8.80	1.0	7.06	15.69	0.681	0.32	-165.0 ~~-180~~	5.2
1027	8.79	1.1	7.06	15.66	0.680	0.27	-166.2	4.3
1028	8.79	1.2	7.07	15.66	0.679	0.27	-166.7	4.6
1029	8.80	1.3	7.07	15.63	0.678	0.22	-167.0	4.5

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW10 **Personnel:** KEVIN CRONIN

Casing Dia. (in): 2" TRENT RICHARDS

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: ~8.69' BTOC PID: 0.0 ppmv

(B) Total Depth: 20.18

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = **Equipment:** YSI 6820

Purge Start Date/Time: 8/12/11 / 1032 **Serial No:** 85289

Sample Date/Time: 8/12/11 / 1055 **Equipment:** GEOPUMP

Weather: SUNNY, 75° **Serial No:** LVE002920

Sampling Parameters: (circle) VOCs TAL METALS, TOTAL U, ISOTOPIC U (FILTERED & UNFILTERED)

Comments: Clear with high % of flocculated iron (red).

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1033	9.74	.2	7.18	14.01	0.867	2.40	-49.4	888.7
1037	10.02	.6	6.89	13.09	0.849	0.64	-40.6	1137.7
1042	9.87	1.2	6.93	13.48	0.834	1.11	-27.0	21.1
1044	10.00	1.4	6.88	13.33	0.816	0.51	-26.4	11.6
1046	10.05	1.6	6.87	13.35	0.818	0.51	-25.6	8.0
1047	10.00	1.7	6.87	13.55	0.819	0.51	-25.5	7.5
1048	10.00	1.8	6.86	13.58	0.819	0.49	-25.4	4.4
1049	9.98	1.9	6.87	13.59	0.820	0.49	-25.8	4.6
			8-12-11					
			JR					

Cleaned out chamber water slightly cloudy

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-11 **Personnel:** T. Richards

Casing Dia. (in): 2" K. CRONIN

Well Type: (circle) Flushmount (Stickup) PID reading 1.5 ppm

(A) Depth to Water: 9.58'

(B) Total Depth: 21.16'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.9 **Equipment:** Peristaltic Pump

Purge Start Date/Time: 8/8/0840 **Serial No:** LVE 002920

Sample Date/Time: 8/8/0910 **Equipment:** YSI 650

Weather: Cloudy, 75°, Calm, 90% Humidity **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, Ur, gen chem

Comments: Water is clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0842	10.30	0.2	6.79	16.15	1.203	1.98	25.2	9.9
0844	10.57	0.4	6.70	16.09	1.211	0.76	-39.8	758
0846	10.72	0.6	6.68	16.25	1.210	0.41	-85.8	1391
0848	10.78	0.8	6.64	16.42	1.207	0.34	-101.4	1430
0850	10.81	1.0	6.61	16.48	1.148	0.60	-109.5	1433.1
0852	10.81	1.2	6.61	16.44	1.052	0.52	-115.6	1451
0854	10.83	1.5	6.62	16.42	1.046	0.48	-115.7	2.8
0856	10.83	1.7	6.62	16.27	1.026	0.35	-120.2	2.7
0857	10.83	1.8	6.63	16.31	1.023	0.35	-121.8	2.9
0858	10.89	1.9	6.64	16.31	1.024	0.36	-122.7	9.3
0859	10.89	2.0	6.64	16.14	1.026	0.35	-123.8	TO.1

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-12 **Personnel:** Kevin Cronin

Casing Dia. (in): 2" PVC

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: ~ 6.24' BTOC

(B) Total Depth: _____

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = _____ **Equipment:** GeoPump

Purge Start Date/Time: 8/22/11 1215 **Serial No:** LVE

Sample Date/Time: 8/22/11 1230 **Equipment:** YSI 6280

Weather: SUNNY, BREEZY, 70° **Serial No:** 85281

Sampling Parameters: (circle) VOCs, ANIONS/GEN. CHEM, [TAL METALS, TOTAL & ISOTOPIC U – FILTERED & UNFILTERED]

Comments: CLEAR WATER

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	mg/l DO	ORP (mV)	Turb. (NTU)
1218	6.50'	0.2	7.24	14.77	0.439	1.63	-11.7	35.0
1220	6.49	0.3	7.18	14.88	0.433	0.90	-12.7	35.6
1222	6.52'	0.6	7.13	15.07	0.425	0.65	-11.0	12.2
1225	6.53'	1.0	7.12	15.08	0.427	0.42	-12.9	5.2
1227	6.53'	1.5	7.12	15.07	0.430	0.36	-16.2	-0.1
1228	6.53'	1.9	7.12	15.05	0.430	0.32	-17.8	0.6

Shaw
Shaw Environmental & Infrastructure, Inc.

NYSDEC SPLIT TAKEN

WELL SAMPLING FORM

Project Number: ~~MW-13~~ KC 140416

Well/Piez No.: MW-13D **Personnel:** KEVIN CRONIN

Casing Dia. (in): 2 JOHN MITCHELL (NYSDEC)

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: ~8.32' ~~BTOC~~ PID: 0.5 ppmv

(B) Total Depth: _____

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other _____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = _____ **Equipment:** _____

Purge Start Date/Time: 8/11/11 1143 **Serial No:** _____

Sample Date/Time: 8/11/11 1200 **Equipment:** _____

Weather: SUNNY, WINDY **Serial No:** _____

Sampling Parameters: (circle) VOCs, TAL METALS (FILTERED/UNFILTERED) TOTAL U + ISOTOPIC U (FILTERED/UNFILTERED), ANIONS, GEN CHEM.

Comments: _____

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1143	~8.37'	<0.1	7.74	17.40	1.263	1.75	52.2	7.1
1145	9.59'	0.2	7.32	~~17.42~~ KC 16.24	1.192	0.61	46.6	5.4
1147	9.58'	0.3	7.27	15.79	1.206	0.48	48.7	1.3
1149	9.58'	0.4	7.26	15.61	1.240	0.46	47.1	-2.7
1151	9.62'	0.6	7.26	15.57	1.271	0.33	45.2	-3.7
1153	9.64'	0.8	7.26	15.61	1.272	0.32	42.3	-3.8
1155	9.66	1.1	7.27	15.60	1.280	0.38	41.7	-4.3
1157	9.68'	1.3	7.26	15.58	1.288	0.36	40.2	-4.4

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-14 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 8.61 PID reading 0.3

(B) Total Depth: ~~22.57~~ 19.58

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** peristaltic

Purge Start Date/Time: 8-16 / 0902 **Serial No:** ~~YSI~~ LE 002920

Sample Date/Time: 8-16 / 0915 **Equipment:** YSI 650

Weather: Clear, 70°, 5mph **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~, mtls, U, + gen chem

Comments: Slightly cloudy water (gray)

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0904	9.30	.2	7.39	15.57	1.497	2.80	-57.9	52.1
0908	9.29	.8	7.26	15.69	1.487	1.12	-67.7	25.6
0910	9.28	1.0	7.24	15.77	1.491	0.70	-69.8	18.5
0912	9.28	1.2	7.21	15.74	1.511	0.58	-70.6	16.6
0913	9.28	1.3	7.21	15.79	15.16	0.46	-69.9	17.0
0914	9.28	1.4	7.20	15.73	1.518	0.48	-68.9	4.5
0915	9.28	1.5	7.21	15.72	1.519	0.47	-69.1	4.2
			8-16-11					
			TP					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-15 **Personnel:** K. Cronin
T. Richards

Casing Dia. (in): 2"

Well Type: (circle) Flushmount (Stickup)

PID reading 2.0 ppm

(A) Depth to Water: 12.11'

(B) Total Depth: ~~TMP~~ 23.08'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic

Purge Start Date/Time: 8-16/1018 **Serial No:** LVE 002820

Sample Date/Time: 8-16/1035 **Equipment:** YSI 650

Weather: Clear, 80°, ~~5~~ mph, 70% humidity **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~ mtls, U, + gen chem

Comments: Clear water to begin

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1019	12.35	.2	9.77	15.30	0.758	3.40	-93.2	38.6
1024	12.50	.8	10.01	15.04	0.703	1.16	-104.3	28.1
1026	12.50	1.0	9.90	15.09	0.722	1.55	-106.6	15.3
1028	12.51	1.2	9.82	15.12	0.738	1.64	-110.0	191.2
1029	12.55	1.3	9.78	15.06	0.744	1.58	-111.2	193.6
1030	12.55	1.5	9.74	15.08	0.748	1.51	-111.3	6.5
1031	12.56	1.6	9.74	15.06	0.749	1.50	-111.4	6.8
			8.15-1K					
			7K					

Shaw™
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-16 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount Stickup

(A) Depth to Water: 9.44'

(B) Total Depth: 20.08'

Purge Method: (circle) Bailer Grundfos Peristaltic Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic

Purge Start Date/Time: 8-19-11 / 1015 **Serial No:** LVE-002920

Sample Date/Time: 8-19-11 / 1030 **Equipment:** YSI-650

Weather: Clear, calm, 80°, 80% humid **Serial No:** 85821

Sampling Parameters: (circle) ~~VOCs~~ TR mtls, U, + gen chem plus a duplicate 900x

Comments: Water slightly cloudy

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1016	9.53	.2	7.46	16.52	1.410	2.20	-99.6	39.0
1020	9.52	.6	7.16	16.37	1.376	0.79	-94.6	18.1
1022	9.52	.8	7.14	16.51	1.367	0.67	-91.8	60.6
1024	9.53	1.0	7.14	16.65	1.368	0.54	-89.9	77.8
water clear 1026	9.52	1.2	7.14	16.70	1.366	0.47	-89.7	-5.5
1027	9.52	1.3	7.14	16.74	1.366	0.44	-89.2	6.0
1028	9.52	1.4	7.14	16.66	1.368	0.43	-89.0	6.2

8-19-11
TR

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-17 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

PID reading 0.0 ppm

(A) Depth to Water: 9.38'

(B) Total Depth: 20.09'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other _____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic

Purge Start Date/Time: 8-16 / 1240 **Serial No:** LVE 002920

Sample Date/Time: 8-16 / ~~1425~~ 1300 **Equipment:** YSI 650

Weather: Clear, 80°, 5mph, 70% humid. **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~ MNs, U, + gen chem Fe

Comments: Water very cldy, rust color, abundant flocculent

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1242	10.05	0.2	7.16	18.16	1.820	0.82	-41.4	833.7
1246	10.62	0.5	7.13	16.90	1.821	0.57	-28.2	150.7
1250	10.08	0.9	7.10	16.35	1.814	0.38	-17.0	161.0
1252	11.44	1.2	7.09	15.90	1.803	0.34	-9.6	43.7
1254	11.60	1.5	7.09	15.82	1.794	0.30	-5.1	33.3
1255	11.66	1.6	7.09	15.79	1.793	0.30	-3.0	73.6
1256	11.71	1.7	7.09	15.78	1.790	0.31	-2.9	73.2
			8-16-11					
			JR					

Water getting clear

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-18 **Personnel:** K. Cronin

T. Richards

Casing Dia. (in): 2"

Well Type: (circle) Flushmount (Stickup)

PID reading 0.0

(A) Depth to Water: 7.48'

(B) Total Depth: 18.06'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic

Purge Start Date/Time: 8-5-11 / 1232 **Serial No:** 002920

Sample Date/Time: 8-5-11 / 12 **Equipment:** YSI 6820

Weather: 85°, partly cloudy, calm, Humid **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~ TPH 8015 mtls, Hydrogen Chem

Comments: Water is clear.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1234	7.95	0.2	7.60	18.08	1.151	1.98	44.3	18.2
1236	8.05	0.4	7.18	16.85	1.140	0.87	37.1	49.7
1238	8.28	0.8	7.11	16.51	1.138	0.57	43.2	82.6
1239	8.30	1.0	7.09	16.49	1.132	0.50	43.7	51.6
1240	8.32	1.2	7.07	16.35	1.122	0.37	57.9	0.1
1241	8.32	1.4	7.07	16.36	1.120	0.33	62.1	0.2
1243	8.32	1.6	7.06	16.40	1.116	0.29	66.6	1.0
1244	8.40	1.8	7.05	16.36	1.117	0.26	66.9	0.9
1245	8.40	2.0	7.05	16.35	1.114	0.24	66.8	1.1

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-19 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 10.06' PID reading 0.0

(B) Total Depth: 19.63'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = ~~1.5~~ 1.53 **Equipment:** Peristaltic

Purge Start Date/Time: 8-4-11 / 1312 **Serial No:** LVE 002920

Sample Date/Time: 8-4-11 / 1330 **Equipment:** Peristaltic

Weather: 85°, Partly Cldy, 5 mph breeze 80% **Serial No:** LVE 002920

Sampling Parameters: (circle) ~~VOCs~~ Uranium, Gen Chem, TAL mtls. Lum

Comments:

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1312	11.05	0.25	9.45	19.02	0.709	1.50	-12.3	42.3
1314	12.4	0.5	9.44	18.17	0.695	1.00	+6.3	45.1
1316	12.8	0.7	9.35	18.15	0.689	1.00	13.0	45.0
1318	13.0	1.0	9.32	18.20	0.674	1.34	21.3	44.8
1319	13.7	1.1	9.30	18.39	0.668	1.33	26.9	50.3
1320	14.2	1.3	9.30	18.68	0.655	3.25	37.9	120.2
1321	14.5	1.4	9.24	18.65	0.665	3.35	40.1	418.5
1322	~~14.8~~	1.5	9.17	18.50	0.683	3.09	55.7	1383
1324	15.0	1.65	9.00	17.94	0.704	2.61	70.8	1390
1325	15.4	1.70	8.99	17.90	0.709	2.58	70.3	1397
1326	15.8	1.9	8.98	17.88	0.711	2.56	71.1	1398

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-20 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount Stickup

(A) Depth to Water: 9.66 PID reading 1.2 ppm

(B) Total Depth: 20.19

Purge Method: (circle) Bailer Grundfos Peristaltic Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.6 **Equipment:** Peristaltic

Purge Start Date/Time: 8-18 / 1148 **Serial No:** LVE-002920

Sample Date/Time: 8-18 / 1205 **Equipment:** YSI 650

Weather: Cldy, 85°, 5 mph, 80% humidity **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~ mtfs, U, oxygen chem

Comments: Clear water.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1149	10.28	.2	7.60	19.62	0.750	5.50	34.7	-3.1
1154	11.86	.7	7.21	19.12	0.838	5.90	60.6	36.9
1156	12.57	1.1	7.11	18.29	0.864	1.68	71.0	58.8
1158	12.88	1.4	7.09	18.25	0.874	1.49	75.4	126.9
1200	13.18	1.6	7.09	18.00	0.878	1.45	81.4	45.3
1201	13.28	1.7	7.09	17.79	0.874	1.44	83.8	57.1
1202	13.29	1.8	7.10	17.81	0.875	~~2.~~ 1.49	83.0	57.3

8-18-11
7h

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-21 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

PID reading 0.0 ppm

(A) Depth to Water: 13.47

(B) Total Depth: 24.20

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic

Purge Start Date/Time: ~~8-18-11~~ / 1232 **Serial No:** LVB 002

Sample Date/Time: 8-18-11 / 1245 **Equipment:** YSI 650

Weather: Cldy, light rain, 85°, calm, 90% humid **Serial No:** 85281

Sampling Parameters: (circle) VOCs

Comments: clear water

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1234	14.48	.2	7.50	16.10	1.336	2.50	-54.0	-2.9
1239	14.74	.8	7.16	14.77	1.358	0.76	-27.7	-6.9
1241	14.81	1.0	7.16	14.88	1.488	0.65	-29.8	-7.0
1243	14.92	1.2	7.16	14.98	1.491	0.63	-44.9	-7.0
1244	14.95	1.3	7.16	14.97	1.499	0.62	-45.4	-7.0
			8-18-11					
			7K					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-22 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 7.24' PID reading = 0.5

(B) Total Depth: 20.20'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.1 **Equipment:** PERISTALTIC Pump

Purge Start Date/Time: 0910 8/5/11 **Serial No:** 002920

Sample Date/Time: 0930 8/5/11 **Equipment:** YSI 6820

Weather: 70°, partly cldy, 5 mph breeze **Serial No:** 85281

Sampling Parameters: (circle) (VOCs) - mths, Uranium, Gen Chem

Comments: Water is initially very Brown MS/MSD #1 COLLECTED

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0912	7.75	0.2	8.00	17.20	0.705	3.01	-159.7	121.2
0914	7.80	0.4	7.46	15.58	0.705	0.91	-142.0	149
0916	7.87	0.6	7.33	15.79	0.702	0.46	-116.3	1423
0918	7.90	1.0	7.29	15.98	0.700	0.40	-96.0	1.8
0919	7.92	1.2	7.27	16.08	0.700	0.50	-87.4	2.8
0920	7.94	1.4	7.25	16.33	0.698	0.42	-76.4	9.7
0921	7.96	1.7	7.25	16.46	0.697	0.38	-73.6	8.9
0922	7.98	2.0	7.24	16.65	0.696	0.30	-74.8	8.7
0923	7.80	2.2	7.23	16.68	0.699	0.29	-73.8	8.6
0924	7.90	2.4	7.23	16.69	0.696	0.28	-74.7	8.4

water clear

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-23 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup) PID reading = 0.0

(A) Depth to Water: 6.01'

(B) Total Depth: 19.05

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.1 **Equipment:** Peristaltic

Purge Start Date/Time: 8-4-11 / **Serial No:** LVE 002920

Sample Date/Time: 8-4-11 / **Equipment:** Peristaltic

Weather: 75°, Partly Cloudy, Calm, Hum = 75% **Serial No:** LVE 002920

Sampling Parameters: (circle) (VOCs) Uranium, Gen chem, & TAL metals

Comments: _____

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1025	6.30	0.5	7.52	16.37	~~28.3~~ 0.798	1.30	-72.1	7.2
1028	6.30	1.0	7.13	16.60	0.785	0.44	-20.6	1.0
1030	6.31	1.5	7.12	16.64	0.773	0.40	-23.7	0.1
1032	6.31	2.0	7.11	16.64	0.760	0.34	-27.3	-1.8
1035	6.30	2.25	7.11	16.65	0.740	0.27	-28.2	-2.2
1037	6.30	2.50	7.11	16.65	0.738	0.26	-30.4	-2.1
1038	6.30	2.6	7.12	16.66	0.736	0.25	-30.3	-2.2
1039	6.30	2.75	7.12	16.66	0.734	0.25	-30.9	-2.3

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-24 **Personnel:** K. Cronin, T. Richards

Casing Dia. (in): 2"

Well Type: (circle) (Flushmount) Stickup

(A) Depth to Water: 3.99' PID reading 6.1

(B) Total Depth: 16.65'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.03 **Equipment:** MP Peristaltic

Purge Start Date/Time: 8/9/11 0855 **Serial No:** LVE 002920

Sample Date/Time: 8/4/11 0928 **Equipment:** Peristaltic

Weather: 70°, cloudy, calm, Humidity ~80% **Serial No:** LVE 002920

Sampling Parameters: (circle) (VOCs)

Comments: _____

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	~~Cond.~~ mS	DO	ORP (mV)	Turb. (NTU)
0855	3.99	0.5 .25 gal	7.9	15.27	1.072	1.00	-52.0	-0.7
0858	4.01	1.0	7.40	14.98	1.06	0.88	-53.0	0.6
0901	4.04	1.5	7.36	14.72	1.048	0.77	-53.7	2.3
0904	4.06	2.0	7.33	14.72	1.059	0.30	-54.0	0.3
0906	4.05	2.5	7.31	14.75	1.070	0.28	-54.3	0.2
0908	4.05	2.8	7.31	14.76	1.071	0.28	-54.4	0.3

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-25 **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) (Flushmount) Stickup

PID reading 16.5 ppm

(A) Depth to Water: ~3.11'

(B) Total Depth: ~15.99'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2 **Equipment:** Peristaltic

Purge Start Date/Time: 8-12 / 0822 **Serial No:** LVE 002920

Sample Date/Time: 8-12 / 0845 **Equipment:** YSI 650

Weather: clear, calm, 65°, humidity 70% **Serial No:** 85287

Sampling Parameters: (circle) (VOCs), meth, U, gen chem

Comments: water - clear DUPLICATE #003 COLLECTED AS WELL

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0823	3.3	0.2	7.09	18.55	5.556	2.22	58.2	-3.1
0827	3.3	0.5	7.02	18.54	5.838	0.44	46.9	-1.6
0830	3.3	0.75	7.02	18.50	5.875	0.35	45.3	-2.6
0831	3.3	1	7.03	18.48	5.864	0.31	42.7	-4.7
0832	3.32	1.2	7.03	18.46	5.847	0.30	42.1	-4.8
0833	3.33	1.3	7.04	18.47	5.834	0.63	41.4	-4.7
0834	3.35	1.5	7.04	18.49	5.834	0.67	39.9	-4.8
0835	3.4	1.7	7.04	18.50	5.760	0.58	38.1	-2.3
0836	3.4	1.9	7.04	18.51	5.760	0.58	37.9	-2.4
		8.12.11						

TR

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-26 **Personnel:** Kevin Cronin

Casing Dia. (in): 2"

Well Type: (circle) ~~Flushmount~~ Stickup

(A) Depth to Water: ~3.25' BTOC PID: 0.2 ppmv

(B) Total Depth:

Purge Method: (circle) Bailer Grundfos Peristaltic Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = **Equipment:** YSI 6280

Purge Start Date/Time: 8/10/11 1257 **Serial No:** 85281

Sample Date/Time: 8/10/11 1320 **Equipment:** GEOPUMP

Weather: MSUNNY, BREEZY **Serial No:** LVE002920

Sampling Parameters: (circle) VOCs TAL METALS, TOTAL + ISO V (FILTERED + UNFILTERED), ANIONS, GEN CHEMISTRY

Comments: COLLECTED BY MISTAKE

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO (mg/l)	ORP (mV)	Turb. (NTU)	
1258	3.55'	<0.1	7.52	19.49	2.366	3.06	9.6	4.0	
1300	3.57'	~0.3	7.29	17.91	2.334	2.14	0.5	-3.9	
1302	3.58'	~0.5	7.27	17.51	2.317	1.55	0.1	-7.3	
1304	3.58'	~0.7	7.29	17.24	2.297	0.46	1.1	-5.5	
1306	3.59'	~1.1	7.33	16.83	2.278	0.37	1.8	175.5	? AIR BUBBLE
1308	3.59'	~1.3	7.34	16.93	2.269	0.36	2.9	-27.9	
1310	3.59'	~1.6	7.36	16.88	2.269	0.26	4.6	23.2	
1312	3.58'	~1.8	7.37	16.91	2.266	0.28	5.5	-28.4	
1314	3.58'	~2.1	7.37	16.86	2.262	0.27	7.9	-28.1	
1316	3.60'	~2.5	7.37	16.81	2.259	0.29	9.4	138.0	? 4
1318	3.55'		7.37	16.88	2.258	0.26	11.9	-29.5	

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW 600 S **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: Dry - no water

(B) Total Depth: 10.43

Purge Method: (circle) Bailer Grundfos Peristaltic Other NA

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 0 **Equipment:**

Purge Start Date/Time: NA **Serial No:** TR

Sample Date/Time: NA **Equipment:**

Weather: Cloudy, 65°, calm 70% humidity **Serial No:**

Sampling Parameters: (circle) ~~VOCs~~

Comments:

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0835	well Dry							
		8-22-11 TR						

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW601D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 10.70

(B) Total Depth: 22.15 1K

Purge Method: (circle) Bailer (Grundfos) (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.8 **Equipment:** Peristaltic

Purge Start Date/Time: 1059 **Serial No:** LVE 002920

Sample Date/Time: 11 **Equipment:** YSI 650

Weather: Partly cloudy, 80°, 5 mph 70% humidity **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~ mtls, U, ↑gen chem

Comments: water is clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1056	11.52	.2	7.60	18.70	1.601	3.67	-179.6	4.0
1100	11.80	.6	7.13	16.18	1.565	0.74	-167.4	154.1
1102	11.68	1.0	7.13	15.98	1.563	0.59	-158.4	82.6
1103	11.65	1.1	7.13	15.88	1.464	0.53	-153.2	79.2
1104	11.65	1.3	7.13	15.93	1.420	0.52	-151.0	101.3
1105	11.65	1.5	7.13	15.89	1.390	0.43	-146.1	93.8
1106	11.65	1.7	7.13	15.83	1.387	0.41	-145.9	89.9
1107	11.65	1.9	7.13	15.82	13.86	0.40	-144.9	87.8
			8-18-11					
			TR					

water became cloudy (grey)

Shaw
Shaw Environmental & Infrastructure, Inc.

NYSDEC
SPLIT TALON

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW 602D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 9.70' PID reading 0.0

(B) Total Depth: 22.08'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.9 **Equipment:** Peristaltic

Purge Start Date/Time: 8-11 / 0842 **Serial No:** LVE002920

Sample Date/Time: 8-11 / 0915 **Equipment:** YSI 650

Weather: Clear, 70°, 5 mph, humidity 75% **Serial No:** 85287

Sampling Parameters: (circle) ~~VOCs~~ OE mth, U, 8

Comments: Begining primarily grout color, stopped @ 0850 - clear lines & YSI @ grout

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
Grout so far 0833	9.86	0.2	7.65	16.05	1.835	3.24	86.3	105.9
0902	9.97	0.5	7.48	15.28	1.104	0.96	48.6	177.9
very cloudy 0904	9.96	0.7	7.34	15.07	1.093	0.58	35.4	118.8
0908	9.97	1.2	7.29	15.13	1.099	0.36	23.4	78.6
0909	9.97	1.3	7.29	15.22	1.104	0.33	23.2	75.4
0911	9.97	1.4	7.30	15.56	1.105	0.32	22.9	78.3
0912	9.97	1.5	7.31	15.16	1.111	0.33	22.0	58.7
0913	9.97	1.6	7.31	15.19	1.107	0.32	21.8	56.9
			8-11-11 JK					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-603 D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 7.26' PID reading 1.7

(B) Total Depth: 22.61'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID) Peristaltic

Well Volume (gal) = 2.4 **Equipment:** LVE 0029207

Purge Start Date/Time: 8/5 / 0811 **Serial No:**

Sample Date/Time: 8/5 / 0840 **Equipment:** YSI 6820

Weather: 25°, partly cldy, **Serial No:** 85281

Sampling Parameters: (circle) VOCs

Comments: Water - very Red (Iron ftc). @ 1 gallon clean chamber

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0812	7.32	0.2	7.55	15.10	1.149	3.88	-29.3	1371
0814	7.90	0.4	7.15	14.41	1.152	1.02	-27.8	1407
0817	7.95	0.7	6.98	13.46	1.137	0.39	-28.8	245
0820	7.88	1	7.14	13.55	1.102	2.18	-14.3	625
0823	8.1	1.4	6.99	Flushed Chamber				
0826	7.85	2.0	7.21	13.56	1.080	2.60	-13.5	53.2
0828 (clearing)	7.80	~~2.2~~ 2.5	7.06	13.47	1.083	1.25	-18.5	41.4
0830	7.95	2.7	7.02	13.18	1.080	0.60	-22.7	36.6
0831	7.97	3.0	7.02	13.16	1.078	0.53	-23.8	42.8
0832	~~7.97~~ 7.97	3.2	7.01	13.14	1.071	0.51	-24.1	10.7
0833	7.98	3.5	7.02	13.15	1.069	0.52	-24.4	9.3

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW 604D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) (Flushmount) Stickup

(A) Depth to Water: 7.30' PID reading 0.6 ppm

(B) Total Depth: 18.09'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.7 **Equipment:** Peristaltic

Purge Start Date/Time: 8-10/0817 **Serial No:** LVE002920

Sample Date/Time: 8-10/0830 **Equipment:** VSE 650

Weather: Clear, 5-10mph, 70° **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), 4, mth, & gen chem.

Comments: Water Cloudy (gray), Cloudy to end. - never clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0815	7.6	.2	8.08	16.85	2.590	3.2	48.8	5.2
0818	7.75	.5	7.30	16.66	2.611	1.28	56.3	5.8
0820	7.72	.8	7.23	16.85	2.619	0.97	59.2	5.7
0822	7.65	1.0	7.23	16.99	2.564	0.77	59.6	7.2
0823	7.62	1.2	7.23	17.11	25.63	0.73	60.2	6.9
0824	7.62	1.4	7.23	17.09	2.493	0.63	61.9	22.9
0825	7.60	1.5	7.23	17.06	2.450	0.69	63.1	19.5
0826	7.60	1.6	7.23	17.05	2.451	0.70	63.7	18.8
0827	7.60	1.7	7.23	16.99	2.389 (2.4)	0.69	66.2	16.9
0828	7.60	1.8	7.23	16.89	2.379	0.68	66.8	16.2

8-10-11
JR

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW605D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) (Flushmount) Stickup

(A) Depth to Water: 3.37

(B) Total Depth: 17.40

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.2 **Equipment:** Peristaltic

Purge Start Date/Time: 8-10 / 0958 **Serial No:** LVE 002920

Sample Date/Time: 8-10 / **Equipment:** YSI 650

Weather: Partly Cldy, 10-20 mph wind, 75° **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, 4 gon clear

Comments: water slightly cloudy

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0958	3.60	0.2	7.83	16.40	0.925	2.01	38.3	5.1
1002	3.68	0.5	7.34	15.65	0.872	0.73	9.3	14.0
1004	3.68	0.7	7.30	15.83	0.867	0.41	3.1	55.0
1006	3.68	0.9	7.29	15.90	0.867	0.34	-1.6	94.4
1007	3.68	1.0	7.29	15.97	0.866	0.33	-2.9	99.9
1008	3.68	1.1	7.29	16.13	0.864	0.31	-3.0	106.9
1009	3.68	1.2	7.29	16.14	0.863	0.31	-3.1	106.2
1010	3.68	1.3	7.29	16.18	0.861	0.30	-3.4	106.7
			8-10-11					

water clear

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-606D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 8.13 PID reading 0.7

(B) Total Depth: ~~8/16 11~~ ~~19.58~~ 22.57

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.3 **Equipment:** Peristaltic

Purge Start Date/Time: 8-16 / 0827 **Serial No:** LVE 002920

Sample Date/Time: 8-16 / 0845 **Equipment:** YSI 650

Weather: Clear, 70°, 5 mph breeze 70% Humidity **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtb, U, oxygen chem.

Comments: Clear water.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0828	8.65	.2	7.27	14.05	1.584	3.56	-7.8	22.4
0832	8.79	.5	7.15	14.16	1.550	0.71	-37.5	22.5
0834	8.74	.8	7.16	14.62	1.549	0.60	-46.4	20.8
0836	8.76	1.1	7.18	14.69	1.554	0.46	-52.5	16.0
0838	8.80	1.4	7.22	14.68	1.555	0.39	-58.9	9.8
0840	8.80	1.6	7.25	14.79	1.539	0.61	-60.4	4.8
0842	8.82	1.8	7.24	14.81	1.536	0.60	-60.9	4.3
0843	8.82	~~1.9~~ 2.0	7.23	14.80	1.537	0.60	-61.1	4.3
0844	8.83	2.1	7.23	14.81	1.538	0.61	-61.0	4.0
			8-16-11					

7h

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-606DR **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

PID reading 0.1 ppm

(A) Depth to Water: 8.23'

(B) Total Depth: 22.47

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.2 **Equipment:** Peristaltic

Purge Start Date/Time: 8-16 / 0940 **Serial No:** LVE-002920

Sample Date/Time: 8-16 / 0955 **Equipment:** YSI 650

Weather: clear, 75°, 5 mph, 70% humidity **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~ mth, Al, & gen chem

Comments: Very clear water.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0941	8.89	0.2	7.51	15.16	1.566	2.50	-74.9	9.2
0945	9.04	0.6	7.10	13.43	1.769	0.71	-96.9	197.5
0948	9.06	0.8	7.06	13.25	2.099	0.39	-114.4	8.5
0950	9.07	1.2	7.07	13.25	2.131	0.33	-116.3	54.6
0951	9.07	1.4	7.07	13.24	2.134	0.32	-117.0	53.0
0952	9.09	1.6	7.07	13.23	2.140	0.33	-118.0	10.4
0953	9.09	1.8	7.07	13.21	2.141	0.31	-119.0	10.3
		8-16-11						
		TR						

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-607D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 8.86' PID reading 1.3 ppm

(B) Total Depth: 19.79'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.8 **Equipment:** peristaltic

Purge Start Date/Time: 8-19 / 0829 **Serial No:** LVE 002920

Sample Date/Time: 8-19 / 0845 **Equipment:** YSI 650

Weather: Clear, 70°, Calm, humidity 80% **Serial No:** 85281

Sampling Parameters: (circle) ~~VOCs~~ mtb, Cl, Nitrogen Chem

Comments: Water very cloudy (grey) at start. Water never cleared up.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0830	9.1	0.2	7.09	15.50	1.316	3.47	-124	200.1
0835	9.32	0.7	7.07	15.16	1.336	0.77	-149.7	150.2
0837	9.35	0.9	7.10	15.33	1.318	0.56	-151.1	219.0
0839	9.34	1.1	7.13	15.35	1.279	0.44	-149.8	575.5
0841	9.30	1.3	7.15	15.39	1.270	0.46	149.5	~~188~~ 570.1
0842	9.28	1.4	7.15	15.42	1.269	0.45	150.3	572.3

Very gray (grout in flask)

W

8-29-11 JK

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-701DD **Personnel:** K. Cronin, T. Richards

Casing Dia. (in): 2"

Well Type: (circle) Flushmount Stickup

(A) Depth to Water: 11.95

(B) Total Depth: 42.8

Purge Method: (circle) Bailer Grundfos Peristaltic Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.9 **Equipment:** Peristaltic

Purge Start Date/Time: 8-19-11 / 1329 **Serial No:** LVE-002920

Sample Date/Time: **Equipment:** YSI-650

Weather: Partly Cldy, 85°, Calm, 80% humidity **Serial No:** 85281

Sampling Parameters: (circle) VOCs, mtls, U, & gen chem

Comments: water Slightly Cldy

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1330	12.41	.3	7.35	18.40	2.004	3.31	-62.0	83.6
1332	12.44	.5	7.32	15.70	2.360	1.28	-54.9	40.7
1334	12.45	.7	7.19	14.38	2.619	1.03	-76.9	42.6
1335	12.45	.8	7.18	14.39	2.620	0.99	-74.8	37.1
1336	12.45	1.0	7.18	14.40	2.565	0.87	-89.6	42.3
1337	12.45	1.1	7.19	14.42	2.568	0.86	90.2	42.1
1338	12.45	1.2	7.20	14.44	2.564	0.85	89.8	41.8
			8-19-11					
			TK					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW702DP **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 9.44 PID reading 0.2 ppm

(B) Total Depth: 41.46

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 5.1 **Equipment:** Peristaltic

Purge Start Date/Time: 8-11 / 0958 **Serial No:** LVE002920

Sample Date/Time: 8-11 / 1015 **Equipment:** YSI 650

Weather: Partly Cldy, 5-10 mph, 75° **Serial No:** 85287

Sampling Parameters: (circle) (VOCs), mtls, U, & gen chem

Comments: Water is clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0959	10.11	.2	7.91	25.30	0.007	5.80	210.7	90.8
1004	12.02	.7	7.14	14.78	4.153	4.83	158.2	2.8
1005	12.75	.8	7.11	14.78	4.188	3.84	149.9	1.9
1006	13.15	.9	7.11	14.80	4.184	3.78	148.5	1.1
1007	13.48	1.0	7.10	14.87	4.174	3.37	146.3	-.4
1008	13.88	1.2	7.10	14.78	4.090	3.14	145.9	-1.3
1009	14.23	1.3	7.11	14.79	4.097	3.17	141.9	-1.2
			8-11-11					
			7R					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-703 DD **Personnel:** K. Cronin

Casing Dia. (in): _____ T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 25.40' PID reading: 0.9 ppm

(B) Total Depth: 41.78' 7R 8/19/11

Purge Method: (circle) Bailer (Grundfos) ~~Peristaltic~~ Other _____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.6 **Equipment:** Grundfos

Purge Start Date/Time: 8-19 / 0900 **Serial No:** 11511

Sample Date/Time: 8-19 / 0915 **Equipment:** YSI 650

Weather: clear, calm, 70°, 80% humidity **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, & gen chem

Comments: water very cloudy (grey)

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0901	25.67	.2	6.93	12.03	2.655	2.30	-62.7	1828.4
0906	25.55	.7	6.77	12.56	2.657	0.50	-69.8	1602.5
0910	25.55	1.1	6.77	12.88	2.644	0.36	-65.8	200.2
0911	25.55	1.2	6.77	12.89	2.643	0.34	-66.1	180.1
0912	1/ 25.55	1.3	6.77	13.05	2.640	0.33	-67.2	148.2
0913	1/ 25.55	1.4	6.77	13.11	2.634	0.33	-70.1	157.6
0914	1/ 25.55	1.5	6.77	13.12	2.637	0.33	-70.8	158.1

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-704DD **Personnel:** K. Conin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) (Flushmount) Stickup

(A) Depth to Water: 3.30'

(B) Total Depth: 38.79'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 5.7 **Equipment:** Peristaltic Pump

Purge Start Date/Time: 8-10 / 1051 **Serial No:** LVE002920

Sample Date/Time: 8-10 / **Equipment:** YSI 650

Weather: Partly cldy, 10-20 mph wind 75° **Serial No:** 85287

Sampling Parameters: (circle) (VOCs), mths, U, & gen chem

Comments: Water is Clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1052	4.2	.2	8.71	17.07	3,882	3.32	62.4	24.1
1058	4.45	.5	8.38	13.78	4,444	0.59	69.6	69.9
1059	4.68	.8	8.21	13.38	3,160	0.32	68.3	109.5
1101	4.68	1.0	7.88	13.36	2.739	0.27	70.2	178.9
1103	4.70	1.2	7.89	13.32	2,640	0.23	69.9	30.7
1105	4.72	1.5	7.87	13.22	2.599	0.21	71.0	73.1
1106	4.74	1.6	7.85	13.19	2.562	0.20	71.4	100.4
1107	4.65	1.7	7.82	13.20	2.558	0.19	72.1	-4.4
1108	4.68	1.8	7.80	13.19	2.552	0.18	72.8	-4.1
			8-10-11 JK					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-705D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup) PID reading = 0.4

(A) Depth to Water: 7.63

(B) Total Depth: 21.43

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 2.2 **Equipment:** Peristaltic

Purge Start Date/Time: 8-9/0812 **Serial No:** LVE0029920

Sample Date/Time: 8-9/0835 **Equipment:** YSI 650

Weather: 70°, light rain, calm **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, & gen chem.

Comments: Clear water - Raining

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0814	10.31	.4	7.28	13.05	2.663	2.18	-207.3	2.7
0816	10.55	.6	7.26	13.26	2.657	1.30	-215.9	1.5
0818	10.87	.8	7.27	13.72	2.639	0.84	-222.6	3.0
0820	11.78	1	7.27	14.43	2.675	0.62	-223.8	5.5
8822	12.37	1.3	7.30	14.29	2.671	0.39	-229.8	5.6
8823	12.73	1.4	7.31	14.30	2.669	0.36	-230.2	5.4
8824	12.89	1.5	7.32	14.42	2.662	0.32	-233.3	5.8
8825	12.90	1.6	7.35	14.48	2.660	0.77	-233.4	3.7
8826	12.80	1.7	7.36	14.49	2.660	0.74	-234.1	3.9
8827	13.15	1.9	7.37	14.45	2.659	0.71	-237.5	3.6
8828	13.330	2.0	7.38	14.48	2.657	0.72	-234.6	3.4

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-705DD **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Rickard

Well Type: (circle) Flushmount (Stickup)

PID reading 0.5 ppm

(A) Depth to Water: 7.60

(B) Total Depth: 41.54

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 5.4 **Equipment:** Peristaltic

Purge Start Date/Time: 8-9/0859 **Serial No:** LVE 002920

Sample Date/Time: 8-9/0930 **Equipment:** YSI 650

Weather: RAIN **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, gen chem

Comments: Clear water

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0900	9.56	.7	9.58	12.16	8.150	3.90	-161.1	56.3
0904	15.32	.7	8.85	11.97	6.728	3.82	-139.0	93.9
0906	13.94	1	8.92	12.70	5.996	4.31	-126.2	173.3
0908	14.99	1.2	9.03	13.20	6.926	4.21	-120.1	145.2.0
0910	15.15	1.4	9.16	13.72	5.942	4.46	-114.6	39.8
0912	15.60	1.6	8.29	14.12	6.075	3.92	-112.2	152.6
0914	15.97	1.9	9.27	14.19	6.208	3.67	-112.7	138.6
0916	16.43	2.1	9.30	14.16	6.203	3.69	113.1	98.1
0918	16.64	2.3	9.36	14.19	6.242	3.64	113.9	112.1

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-706DD **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 10.26' PID reading 0.6 ppm

(B) Total Depth: 42.30'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 5.1 **Equipment:** Peristaltic

Purge Start Date/Time: 8-15 / 0812 **Serial No:** LVE 002920

Sample Date/Time: 8-15 / 0840 **Equipment:** YSI 650

Weather: Cloudy, 68°; 5 mph, humidity 60% **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, gen chem.

Comments: Very cloudy water (grey)

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0813	11.9	.2	7.32	16.01	3.860	3.60	130.2	1568
0816	12.62	.5	7.42	14.52	7.605	2.13	3.8	1559
0819	13.00	.8	7.43	14.73	7.341	0.70	-41.5	1090
0822	13.23	1.2	7.25	14.75	6.401	0.69	-39.6	445.7
0825	13.39	1.5	7.16	14.84	5.587	0.58	-32.8	178.1
0828	13.49	1.8	7.11	14.80	5.054	0.51	-25.3	110.1
0831	13.53	2.1	7.16	14.89	4.349	0.54	-18.7	89.9
0833	13.65	2.4	7.15	14.90	3,710	0.51	-14.8	124.8
0837	13.59	2.7	7.15	14.89	3.542	0.50	-12.1	44.1
0838	13.59	2.8	7.16	14.90	3,507	0.49	-12.0	44.6

8:11 very cldy H2O

8-15-11

12

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-707 DD

Personnel: K. Cronin
T. Richards

Casing Dia. (in): 2"

Well Type: (circle) Flushmount Stickup

(A) Depth to Water: 33.62

PID reading 7.6 ppm

(B) Total Depth: 39.58

Purge Method: (circle) Bailer Grundfos Peristaltic Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = .9

Equipment: YSI 650

Purge Start Date/Time: 8-17 / 1125

Serial No: 85281

Sample Date/Time: 8-1

Equipment:

Weather: Partly Cldy, 80°, 5 mph 50% humid

Serial No:

Sampling Parameters: (circle) VOCs, mtls, U, & gen chem

Comments: Very cloudy (gray) & strong sulfur smell.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1127	35'	.2	8.45	13.85	18.46	4.95	135.8	1616
1128	37'	.4	8.67	13.91	18.49	5.25	124.9	1677
1129	38'	.6	8.69	13.58	18.56	5.74	125.4	1676
1130	39'	.7	8.72	13.61	18.54	6.27	119.9	1677
1132	39.4'	.9	8.72	13.87	18.51	6.28	117.1	1682
	Bailed		Dry					

Shaw
Shaw Environmental & Infrastructure, Inc.

NYSDEC SPLIT + 3RD DUPLICATE TAKEN

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW 708D1 **Personnel:** KEVIN CRONIN

Casing Dia. (in): 2" JOHN MITCHELL (NYSDEC)

Well Type: (circle) (Flushmount) Stickup

(A) Depth to Water: -8.24' BTOC PID: 2.7 ppmv

(B) Total Depth: _____

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other _____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = _____ **Equipment:** GEOPUMP

Purge Start Date/Time: 8/11/11 1339 **Serial No:** LVE 002920

Sample Date/Time: 8/11/11 1410 **Equipment:** YSI 9260

Weather: P. SUNNY, BREEZY, 75° **Serial No:** _____

Sampling Parameters: (circle) (VOCs) TAL METALS + TOTAL + ISOTOPIC ✓ (FILTERED / UNFILTERED)

Comments: NYSDEC SPLIT + DUPLICATE COLLECTED ANIONS GONE VERY TURBID, GRAY @ START CLEARING UP

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1339	8.68'	<0.1	8.93	18.27	2.306	5.81	18.3	1592
1341	8.88'	0.3	8.11	14.41	3.256	3.20	10.1	1549
1343	8.92'	0.4	8.02	14.37	3.232	2.30	4.4	1547
1345	8.96'	0.7	7.91	14.14	3.153	1.14	1.2	1061
1347	8.98'	1.0	7.70	14.00	2.852	0.75	-1.6	626.9
1350	9.02'	1.2	7.54	13.87	2.229	0.52	0.7	265.8
1352	9.01'	1.5	7.49	13.88	2.101	0.42	1.2	173.8
1354	9.03'	1.7	7.46	13.62	1.974	0.35	0.0	210.7
1356	9.04'	1.9	7.44	13.44	1.929	0.32	-0.4	571.3
1359	9.05'	2.2	7.44	13.34	1.895	0.31	-0.2	122.5
1401	9.05'	2.5	7.43	13.32	1.881	0.26	-1.1	141.1
1403	9.05'	2.7	7.43	13.44	1.873	0.24	-1.7	128.8
1405	9.06'	3.0	7.43	13.51	1.860	0.23	-2.6	19.4

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-709 DD **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) (Flushmount) Stickup

(A) Depth to Water: 8.07' PID reading 1.5 ppm

(B) Total Depth: 40.25'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 5.1 **Equipment:** Peristaltic

Purge Start Date/Time: 8-10 / 0908 **Serial No:** LVE 002920

Sample Date/Time: 8-10 / 0930 **Equipment:** YSI 650

Weather: Clear, calm, 75° **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, & gen chem

Comments: Cloudy (gray)

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0909	~~8.20~~ 8.75 R	.2	7.24	16.20	3.889	5.40	75.2	156
0912	8.85	.4	7.45	14.20	4.401	2.98	23.8	88.9
0914	~~8~~ 9.10 R	.6	7.37	14.10	3.940	2.14	16.0	350.5
0916	9.15	.8	7.28	13.36	3.101	1.84	21.9	139.9
0918	9.15	1.0	7.24	13.08	2.820	1.14	34.7	25.9
0920	9.15	1.2	7.24	12.96	2,742	0.70	40.8	12.0
0922	9.15	1.4	7.33	13.07	2,145	0.43	46.9	103.2
0923	9.15	1.5	7.34	13.03	2,072	0.40	48.6	71.1
0924	9.15	1.6	7.35	13.01	2,070	0.39	47.5	71.3
0925	9.15	1.7	7.35	13.00	2,071	0.38	47.8	71.7

Clear water

8-10-11
7/2

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-710 D **Personnel:** K. Cronin / T. Richard

Casing Dia. (in): 2"

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 12.20 PID reading 0.3

(B) Total Depth: 21.37

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.5 **Equipment:** Peristaltic

Purge Start Date/Time: 8-15 / 0938 **Serial No:** LVE 002920

Sample Date/Time: 8-15 / ~~0950~~ 0955 **Equipment:** YSI 650

Weather: Cldy, 70°, 5mph, Humid: 60% **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mtls, U, 8 ion chem.

Comments: Clear water

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0939	12.39	.2	7.65	14.53	1.880	5.37	48.1	19.8
0941	12.44	.5	7.28	13.42	1,868	3.53	-29.1	69.9
0945	12.44	.8	7.22	12.96	1,843	2.76	18.1	80.8
0948	12.44	1.0	7.21	12.89	1.827	0.68	11.4	-2.5
0952	12.44	1.2	7.21	12.87	1,827	0.68	10.9	-2.9
0953	12.44	1.3	7.21	12.87	1,828	0.66	10.7	-2.1
		8.15.11						
			TR					

slightly cldy H2O

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-710 DD **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: ~~23.11~~ 20.78 PID reading ~~0.7~~ 0.9

(B) Total Depth: 41.57

Purge Method: (circle) Bailer (Grundfos) ~~(Peristaltic)~~ Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 3.4 **Equipment:** ~~Peristaltic Pump~~ (PINE)

Purge Start Date/Time: 8-18 / 0805 **Serial No:** ~~LVE 002920~~ ~~05209~~

Sample Date/Time: 8-18 / 0825 **Equipment:** YSI 650

Weather: cldy, 20°, 5 mph, Humidity 60% **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), mrb, U, 8 gen chem

Comments: Water is clear

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0805	21.37	.2	7.56	13.20	2.202	4.51	137.5	7.6
0810	21.22	.6	7.18	12.44	2.239	2.92	75.6	29.8
0812	21.22	.8	7.16	12.45	2.254	2.81	64.3	40.0
0815	21.22	1.1	7.14	12.46	2.282	2.19	57.5	17.4
0816	21.23	1.2	7.14	12.49	2.308	2.07	55.0	12.1
0817	21.23	1.3	7.14	12.48	2.306	2.03	54.6	7.9
0818	21.23	1.5	7.14	12.50	2.309	1.93	52.3	6.5
0819	21.	1.6	7.14	12.52	2.303	1.90	52.6	6.0

→ water become cldy (gray)

8-18-11 JR

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-711 D **Personnel:** KEVIN CRONIN

Casing Dia. (in): 2"

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 12.54' PID Reading 0.2 ppm

(B) Total Depth: 21.95'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.5 **Equipment:** Peristaltic

Purge Start Date/Time: 8-9/14 **Serial No:** LVE 002920

Sample Date/Time: 8-9/ **Equipment:** YSI 650

Weather: RAIN, 75° **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), MTL, U, & gen chem

Comments:

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1425	12.50	.2	7.72	18.29	2.092	3.46	-4.2	9.5
1427	12.58	.4	7.62	14.54	2.103	1.86	-12.9	80
1429	12.70	.7	7.55	14.52	~~2.0~~ 1.990	0.82	-13.9	5.9
1431	12.80	1.0	7.43	15.07	1.919	0.90	-8.4	4.6
1433	12.91	1.2	7.36	15.24	1.884	1.13	-4.3	4.1
1435	13.08	1.4	7.28	15.28	1.816	4.38	5.6	2.5
1437	13.78	1.7	7.26	15.79	1.720	1.08	8.2	1.4
1438	14.05	1.9	7.28	15.81	1.716	1.07	8.8	1.5

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-711DD **Personnel:** K. Cronin

T. Richards

Casing Dia. (in): 2"

Well Type: (circle) Flushmount (Stickup)

PID Reading NR 8-15-11 / 0.2 ppm / 13.8

(A) Depth to Water: 11.41'

(B) Total Depth: 42.21

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 4.9 **Equipment:** Peristaltic

Purge Start Date/Time: NR 8-15 / ~~8-14~~ 13 1138 **Serial No:** LVE 002920

Sample Date/Time: NR 8-15 / 1200 **Equipment:** YSI 650

Weather: RAIN, 75° **Serial No:** 85281

Sampling Parameters: (circle) (VOCs), MTL, U, & Gen Chem

Comments: Water is clear "DRIES" OUT (CAN'T LIFT WATER W/ GEOPUMP) FINISH COLLECTING GEN CHEM DUPLICATE @ 1145 W/ DISPOSABLE BAILER; COLLECT REMAINING UNFILTERED SAMPLES (TAL METALS, TOTAL U + ISOTOPIC U) AND FILTERED TAL METALS, TOTAL U + ISOTOPIC U)

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1141	12.50	0.2	8.8	17.75	6104	5.01	66.7	22.8
1145	15.18	0.5	9.08	14.32	6.255	2.60	74.8	26.3
1147	16.1	0.8	9.07	14.71	6.202	2.33	77.8	26.9
1148	16.75	1.0	9.06	14.73	6.159	2.28	79.6	24.4
1149	16.90	1.2	9.04	14.72	6.158	2.26	80.3	24.7
1150	17.52	1.4	9.02	14.71	6.157	2.28	81.2	25.2
			8-15-11					
			TR					

VOCs AND ANIONS/ GEN. CHEM COLLECTED 8/15/11 VIA GEOPUMP PRIOR TO BEING UNABLE TO LIFT WATER W/ GEOPUMP

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-712D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 22.02 (DRY)

(B) Total Depth: 22.02

Purge Method: (circle) Bailer Grundfos Peristaltic Other None - Dry Hole

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = NA **Equipment:**

Purge Start Date/Time: NA **Serial No:** 8-15-4 TR

Sample Date/Time: NA **Equipment:**

Weather: Cldy, 65°, 5 mph **Serial No:**

Sampling Parameters: (circle) ~~VOCs~~

Comments: Dry well.

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
				8-15-4				
					TR			

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-712 DD **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 30.26' PID reading 0.4 ppm

(B) Total Depth: 41.76'

Purge Method: (circle) Bailer (Grundfos) Peristaltic Other_____

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.8 **Equipment:** YSI 650

Purge Start Date/Time: 8-18 / 0917 **Serial No:** 85281

Sample Date/Time: 8-18 / 0935 **Equipment:** Grundfos (Pink Eq)

Weather: Clear, 70°, 5mph, 60% Hum **Serial No:** 11511

Sampling Parameters: (circle) (VOCs), mtb, U, + gen chem

Comments: Water very cloudy (gray)

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
0919	31.4	.2	~~13.32~~ 7.19	13.32	2.612	6.53	23.9	329.6
0923	31.05 ~~31.57~~	.6	7.16	12.40	2.520	1.72	63.3	305.9
0925	30.28	.8	7.15	12.82	2.518	1.60	66.0	330.1
0928	30.32	1.1	7.12	~~14.48~~	2.520	1.23	65.0	252.8
0930	30.32	1.3	7.12	14.02	~~2.584~~	1.20	64.0	104.4
0931	30.33	1.4	7.11	13.93	2.540	1.12	64.8	83.0
0932	30.32	1.5	7.11	13.99	2.539	1.11	65.1	82.1
			8-18-11					
			7h					

Shaw
Shaw Environmental & Infrastructure, Inc.

WELL SAMPLING FORM

Project Number: 140416

Well/Piez No.: MW-713 D **Personnel:** K. Cronin

Casing Dia. (in): 2" T. Richards

Well Type: (circle) Flushmount (Stickup)

(A) Depth to Water: 12.23' PID reading = 2.4

(B) Total Depth: 21.99'

Purge Method: (circle) Bailer Grundfos (Peristaltic) Other

Well Volume = (B-A)*conversion factor (see below)

(0.04 gal/ft for 1" ID, 0.16 gal/ft for 2" ID, 0.65 gal/ft for 4" ID)

Well Volume (gal) = 1.56 **Equipment:** Peristaltic

Purge Start Date/Time: 8/4/11 **Serial No:** LVE 002920

Sample Date/Time: 8-4-11 **Equipment:** Peristaltic

Weather: 80°, Partly Cldy, Calm, 80% hum **Serial No:** LVE 002920

Sampling Parameters: (circle) (VOCs), Uranium, Gen Chem, & TAL mtls

Comments:

Time	Water Level (ft toc)	Well Volume / Gallons Removed	pH	Temp. (°C)	Cond.	DO	ORP (mV)	Turb. (NTU)
1135	12.71	0.2	7.37	14.88	~~1.595~~ 1.548	3.02	-149.2	1356.9
1137	12.70	0.4	7.27	13.52	1.554	2.04	-158.7	14.2
1140	12.70	0.75	7.24	13.58	1.549	0.94	-164.9	5.1
1142	12.71	1.0	7.23	13.42	1.546	0.78	-168.9	16.9
1144	12.70	1.2	7.23	13.50	1.536	0.72	-172.9	16.8
1146	12.71	1.5	7.24	13.47	1.534	0.71	-175.6	16.7
1147	12.70	1.7	7.24	13.46	1.533	0.72	-175.7	16.9
1149	12.71	1.9	7.24	13.47	1.534	0.72	-175.6	16.8

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: SUNNY, WINDY, 45'
PID upon opening: 0.0 ppmv

Water Level Data

Date: 01/ 31 /2011 Start Time: 1035 **Well ID:** MW-26

Initial Total Casing Length ~16.96' (feet)

Depth to Water (from top of casing) ~1.62 (feet)

a) Height of Water Column 15.34 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = _____ (feet) x 0.163 gallons/foot = 2.5 gallons

Purge Data

Date: ~~01~~ 02 / 1 /2011 Time: 0910 (start) 0943 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	~~0912~~	0917	0921	0925	0935	0940	0943
Volume	gals	0.1	0.7	1.2	2.0	2.5	3.0	3.5
Specific Conductivity	mS/cmc	2.031	1.947	1.882	1.854	1.793	1.784	1.790
pH	S.U.	7.22	7.24	7.34	7.42	7.49	7.50	7.50
Turbidity	NTU	14.2	11.5	10.4	8.3	7.4	7.1	7.4
Temperature	°C	9.10	9.15	9.30	9.41	9.62	9.81	9.73
ORP	mV	183.2	168.6	156.5	145.9	131.0	124.1	120.2
DO	mg/L	2.90	0.98	0.41	6.31	0.25	0.24	0.31

Did well dry out? (If yes, how many times) ND Actual Volume Removed ~3.5 (gallons)

Sampling Data

Sample Date: ~~01~~ 02 01 /2011 Sample Time: 0945
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6280-0; SN 04D1234AZ, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: ~ SUNNY, WINDY 40°
PID upon opening: 0.0 ppmv

Water Level Data

Date: 01/31 /2011 Start Time: 1150
Well ID: MW-6040

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Initial Total Casing Length ~17.07 (feet)
Depth to Water (from top of casing) ~4.28' (feet)
a) Height of Water Column 12.79 (feet)
Well Volume ([a] x volume factor *) = ____ (feet) x 0.163 gallons/foot = 2.1 gallons

Purge Data

Date: ~~01~~ 2 / /2011 Time: ~~X~~ 1405 (start) 1455 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	1406	1414	1420	1432	1450	1455
Volume	gals	0.1	1.0	2.1	3.0	4.0	4.5
Specific Conductivity	mS/cmc	1.763	1.407	1.345	1.364	1.407	1.378
pH	S.U.	7.45	7.28	7.30	7.41	7.27	7.29
Turbidity	NTU	379.4	159.6	58.2	63.8	24.3	22.7
Temperature	°C	8.55	8.38	8.34	8.35	8.32	8.35
ORP	mV	154.7	147.6	145.1	65.7	95.9	100.0
DO	mg/L	4.70	3.64	3.62	4.47	2.95	2.96

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~4.5 (gallons)

Sampling Data

Sample Date: ~~01~~ 02 /01 /2011 Sample Time: 1455
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6280-0; SN 04D1234AZ, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP Project Number: 140416.09040100
Weather: PSUNNY PID upon opening: 0.0 ppmv

Water Level Data

Date: 01/ 31 /2011 Start Time: 1115 **Well ID:** MW-605D

Initial Total Casing Length ~17.45 (feet)

Depth to Water (from top of casing) ~0.80' (feet)

a) Height of Water Column 16.65 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = _____ (feet) x 0.163 gallons/foot = 2.7 gallons

Purge Data

Date: 02/01 /2011 Time: 1100 (start) 1130 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	1101	1108	1116	1130		
Volume	gals	0.1	1.0	2.5	4.0		
Specific Conductivity	mS/cmc	0.956	0.931	0.932	0.934		
pH	S.U.	7.45	7.21	7.21	7.21		
Turbidity	NTU	12.3	17.9	24.2	30.8		
Temperature	°C	9.95	10.17	10.14	10.04		
ORP	mV	150.8	141.7	132.6	121.0		
DO	mg/L	2.04	0.45	0.50	0.32		

Did well dry out? (If yes, how many times)_____ Actual Volume Removed ~4 (gallons)

Sampling Data

Sample Date: 02/01 /2011 Sample Time: 1130
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: DUPLICATE (MW-9006) COLLECTED @ THIS WELL.

Equipment: YSI 6280-0; SN 04D1234AZ, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP Project Number: 140416.09040100
Weather: _____ PID upon opening: 0.0 ppmv

Water Level Data

Date: 01/ 31 /2011 Start Time: 1115 **Well ID:** MW-70420

Initial Total Casing Length ~38.87' (feet)

Depth to Water (from top of casing) ~0.64 (feet)

a) Height of Water Column 38.23 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = _____ (feet) x 0.163 gallons/foot = 6.2 gallons

Purge Data

Date: 01/ /2011 Time: 1245 (start) 1330 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	1245	1305	1320	1330		
Volume	gals	0.1	6.0	10.0	13.0	~~13.0~~	
Specific Conductivity	mS/cmc	1044	2.854	2.879	2.880		
pH	S.U.	9.86	7.60	7.28	7.24		
Turbidity	NTU	20.2	162.3	149.0	~~147.8~~	23.7	
Temperature	°C	7.79	9.90	10.64	10.09		
ORP	mV	84.2	147.6	149.0	147.8		
DO	mg/L	10.66	8.57	8.18	5.16		

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~13 (gallons)

Sampling Data

Sample Date: 01/ /2011 Sample Time: 1330
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: MS/MSD COLLECTED

Equipment: YSI 6280-0; SN 04D1234AZ, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: SUNNY, WINDY, 45°
PID upon opening: 0.0 ppmv

Water Level Data

Date: 01/ 31 /2011 Start Time: _____ **Well ID:** MW-70700

Initial Total Casing Length 39.50 (feet)

Depth to Water (from top of casing) ~ 16.25' (feet)

a) Height of Water Column 23.25 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = _____ (feet) x 0.163 gallons/foot = 3.8 gallons

Purge Data

Date: ~~01~~ 2 / 1 /2011 Time: 0950 (start) 1020 (finish)

Method: ~~Geopump peristaltic pump~~ BAILER COULD NOT GET WATER TO MOVE THROUGH PERISTALTIC PUMP
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	NM					
Volume	gals						
Specific Conductivity	mS/cmc						
pH	S.U.						
Turbidity	NTU						
Temperature	°C						
ORP	mV						
DO	mg/L	↓					

Did well dry out? (If yes, how many times) BEGINNING TO Actual Volume Removed ~4 (gallons)

Sampling Data

Sample Date: ~~01~~ 02/ 01 /2011 Sample Time: 1020
Appearance (visual) V. SLIGHT TURBID @ Color Cloudy Odor NONE
Sampling Method: Low Flow Sampling ~4 GAL USED PERISTALTIC PUMP FOR FILTERED SAMPLE COLLECTED TOTAL SAMPLE W/ BAILER.

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6280-0; SN 04D1234AZ, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: CLOUDY, 33° WINDY
PID upon opening: 0.0 ppmv

Water Level Data

Date: 01/30/2011 Start Time: 1345 **Well ID:** MW-708 DD

Initial Total Casing Length ~39.72' (feet)

Depth to Water (from top of casing) ~6.51' (feet)

a) Height of Water Column 33.21' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 33.21 (feet) x 0.163 gallons/foot = 5.4 gallons

SOFT ON BOTTOM.

Purge Data

Date: 01/30/2011 Time: 1400 (start) _____ (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	1400	1402	1405	1415	1420	1440	1445
Volume	gals	0.1	1.5	3.0	7.0	10.0	15.0	16.0
Specific Conductivity	mS/cmc	1.224	1215	1.372	1.479	1.482	1.661	1.666
pH	S.U.	8.10	7.73	7.50	7.36	7.36	7.31	7.28
Turbidity	NTU	707.8	537.2	273.7	651.2	297.6	226.5	411.9
Temperature	°C	9.60	9.57	9.95	10.13	9.99	10.24	11.37
ORP	mV	-115.6	-101.5	-79.8	-72.6	-75.5	-42.1	-52.5
DO	mg/L	9.01	10.36	8.71	9.82	9.83	8.80	6.82

Did well dry out? (If yes, how many times) 0 Actual Volume Removed ~17 (gallons)

LT GRAYISH, TURBID

Sampling Data

Sample Date: 01/30/2011 Sample Time: 1450
Appearance (visual) V.S. TURBID Color LT GRAY Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6280-0; SN 04D1234AZ, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: MSUNNY, WINDY, 40°
PID upon opening: 0.0 ppmv

Water Level Data

Date: 01/ 31 /2011 Start Time: 1150
Well ID: MW-709D0

Initial Total Casing Length ~40.28' (feet)

Depth to Water (from top of casing) ~5.76' (feet)

a) Height of Water Column 34.52 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = _____ (feet) x 0.163 gallons/foot = 5.6 gallons

Purge Data

Date: ~~01~~ 02 /1 /2011 Time: 1420 (start) 1505 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	1425	1435	1505			
Volume	gals	~5.0	~10.0	~15.0			
Specific Conductivity	mS/cmc	1.691	1.673	1.698			
pH	S.U.	7.47	7.44	7.49			
Turbidity	NTU	18.3	32.8	17.2			
Temperature	°C	9.52	11.03	10.49			
ORP	mV	114.1	16.8	17.4			
DO	mg/L	4.00	4.31	3.86			

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~15.5 (gallons)

Sampling Data

Sample Date: 01/ /2011 Sample Time: 1505
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6280-0; SN 04D1234AZ, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP Project Number: 140416.09040100
Weather: Pcloudy, 24° PID upon opening: 0.0 ppmv

Water Level Data

Date: 01/30/2011 Start Time: 0945 **Well ID:** MW-710D

Initial Total Casing Length ~14.38' (feet)

Depth to Water (from top of casing) ~11.48' (feet)

a) Height of Water Column 4.90' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 4.90 (feet) x 0.163 gallons/foot = 0.78 gallons

Purge Data

Date: 01/ /2011 Time: 1027 (start) _____ (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	1046	1048	1050	1053	1055	1057
Volume	gals	0.1	0.5	1.0	1.5	2.0	2.5
Specific Conductivity	mS/cmc	1.569	1.569	1.569	1.556	1.556	1.562
pH	S.U.	7.04	7.11	7.16	7.17	7.17	7.18
Turbidity	NTU	102.5	74.5	69.0	52.5	83.8	30.5
Temperature	°C	9.81	10.17	10.48	10.51	10.52	10.34
ORP	mV	101.5	85.5	80.9	78.8	81.6	87.2
DO	mg/L	8.95	8.91	8.27	8.11	9.06	7.51

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~3.5 (gallons)

Sampling Data

Sample Date: 01/30/2011 Sample Time: _____
Appearance (visual) _____ Color _____ Odor _____
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6280-0; SN 04D1234AZ, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP Project Number: 140416.09040100
Weather: M. SUNNY, 24° WINDY (W/C ~15°) PID upon opening: 0.0 ppmv

Water Level Data

Date: 01/30/2011 Start Time: 1012 **Well ID:** MW-710D2

Initial Total Casing Length ~37.23' (feet)

Depth to Water (from top of casing) ~30.58' (feet)

a) Height of Water Column ~6.67 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 6.67 (feet) x 0.163 gallons/foot = 1.1 gallons

Purge Data

Date: 01/30/2011 Time: 1125 (start) 1138 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	1126	1128	1131	1133	1135	1138
Volume	gals	0.1	0.5	1.5	2.0	3.0	4.0
Specific Conductivity	mS/cmc	1.720	1.718	1.719	1.714	1.718	1.721
pH	S.U.	7.66	7.32	7.27	7.28	7.29	7.29
Turbidity	NTU	27.4	41.7	1320	27.2	27.5	31.4
Temperature	°C	10.26	10.94	11.04	11.04	11.01	11.01
ORP	mV	137.7	125.2	118.0	114.8	114.3	112.4
DO	mg/L	7.32	7.06	7.12	6.74	6.26	6.76

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~40 (gallons)

Sampling Data

Sample Date: 01/30/2011 Sample Time: 1140
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6280-0; SN 04D1234AZ, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: M. SUNNY 29° WINDY
PID upon opening: 0.0 ppmv

Water Level Data

Date: 01/30/2011 Start Time: 1252 **Well ID:** MW-713D

Initial Total Casing Length ~16.95' (feet)

Depth to Water (from top of casing) ~11.10' (feet)

a) Height of Water Column ~5.85' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 5.85 (feet) x 0.163 gallons/foot = 0.95 gallons

Purge Data

Date: 01/30/2011 Time: 1300 (start) _____ (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	1305	1310	1315	1317	1320	
Volume	gals	0.1	0.75	2.50	3.0	4.5	
Specific Conductivity	mS/cmc	1.441	1.411	1.418	1.407	1.389	
pH	S.U.	7.07	7.03	6.99	7.00	7.03	
Turbidity	NTU	29.3	60.0	44.6	81.6	30.9	
Temperature	°C	9.73	9.78	9.79	9.67	9.57	
ORP	mV	-255.9	-237.4	-229.9	-218.7	-222.1	
DO	mg/L	10.17	8.56	5.18	9.09	8.15	

Did well dry out? (If yes, how many times) No Actual Volume Removed ~4.5 (gallons)

Sampling Data

Sample Date: 01/30/2011 Sample Time: 1325
Appearance (visual) V.S. TURBID Color GRAYISH Odor SLIGHT H2S ODOR
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6280-0; SN 04D1234AZ, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: Am: Cloudy, 60°, Humid
PID upon opening: NM ppmv - Humidity too high to get accurate reading (background >60 ppmv)

Water Level Data

Date: 05/ 4 /2012 Start Time: 0815 **Well ID:** MW- 26

Initial Total Casing Length ~16.95' (feet)

Depth to Water (from top of casing) ~1.94' (feet)

a) Height of Water Column 15.01 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 15.01 (feet) x 0.163 gallons/foot = 2.4 gallons

Purge Data

Date: 05/ 4 /2012 Time: 0900 (start) _____ (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	0900	0909	0920	0930	0935	
Volume	gals	0.2	~1.5	~2.5	~3.0	~3.5	
Specific Conductivity	mS/cmc	3.683	1.617	1.573	1.550	1.570	
pH	S.U.	7.58	7.61	7.60	7.59	7.55	
Turbidity	NTU	206.7	28.6	8.9	3.0	1.9	
Temperature	°C	12.41	11.43	11.62	11.78	11.89	
ORP	mV	-27.3	34.1	73.5	98.2	113.2	
DO	mg/L	4.64	2.19	2.26	2.76	2.16	

Σ ~5.05' ~5.08' ~5.09' ~5.09' ~5.09'

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~4 (gallons)

Sampling Data

Sample Date: 05/ 4 /2012 Sample Time: 0935
Appearance (visual) _____ Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6920 V2; SN 07fl00012, Minirae 2000 PID, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: Cloudy, Windy, 60°
PID upon opening: 3.0 ppmv
BACKGROUND ~2.3 ppmv

Water Level Data

Date: 05/ 4 /2012 Start Time: 1000 **Well ID:** MW- 604D

Initial Total Casing Length ~17.05' SOFT (feet)

Depth to Water (from top of casing) ~7.90' (feet)

a) Height of Water Column ~9.15 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 9.15 (feet) x 0.163 gallons/foot = 1.50 gallons

Purge Data

Date: 05/ 4 /2012 Time: 1015 (start) 1040 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

		~8.25'	~8.35'	~8.36'	~8.37'		
Time	0000	1015	1025	1030	1038		
Volume	gals	<0.1	~1.0	~2.0	~3.0		
Specific Conductivity	mS/cmc	0.026	1.794	1.754	1.740		
pH	S.U.	9.33	7.07	7.05	6.98		
Turbidity	NTU	~8.4	113.2	25.7	24.2		
Temperature	°C	23.04	10.22	10.23	10.22		
ORP	mV	91.5	165.5	181.5	200.6		
DO	mg/L	7.91	2.74	1.73	1.43		

Did well dry out? (If yes, how many times) NO Actual Volume Removed 3.0 (gallons)

Sampling Data

Sample Date: 05/ 4 /2012 Sample Time: 1040
Appearance (visual) Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: MS/MSD COLLECTED @ THIS WELL

Equipment: YSI 6920 V2; SN 07fl00012, Minirae 2000 PID, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP Project Number: 140416.09040100
Weather: _____ PID upon opening: 0.1 ppmv

Water Level Data

Date: 05/3 /2012 Start Time: 1425 **Well ID:** MW-605D

Initial Total Casing Length ~17.46' (feet)

Depth to Water (from top of casing) ~1.21' (feet)

a) Height of Water Column ~16.25 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 16.25 (feet) x 0.163 gallons/foot = 2.6 gallons

Purge Data

Date: 05/3 /2012 Time: 1433 (start) 1510 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Cloudy,

Time	0000	1434 ~1.21'	1442 ~1.35'	1450 ~1.36'	1456 ~1.35'	1505 ~1.37'	1510 ~1.36'
Volume	gals	<0.1	1.0	2.5	3.0	5.0	5.5
Specific Conductivity	mS/cmc	0.615	0.597	0.593	0.596	0.593	0.600
pH	S.U.	7.29	7.01	6.95	6.90	6.85	6.83
Turbidity	NTU	122.4	151.1	60.8	11.1	7.4	9.1
Temperature	°C	11.65	10.79	10.76	10.86	10.83	10.85
ORP	mV	52.7	126.3	159.3	187.2	216.1	225.0
DO	mg/L	4.76	0.55	0.45	0.40	0.36	0.35

Did well dry out? (If yes, how many times) NO Actual Volume Removed 5.5 (gallons)

Sampling Data

Sample Date: 05/3 /2012 Sample Time: 1515
Appearance (visual) _____ Color CLEAR Odor NO
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: DUP-01 COLLECTED @ THIS WELL @ 1515.

Equipment: YSI 6920 V2; SN 07fl00012, Minirae 2000 PID, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: _____
PID upon opening: 0.1 ppmv

Water Level Data

Date: 05/3 /2012 Start Time: 1530 **Well ID:** MW- 7040D

Initial Total Casing Length ~ 38.85' (feet)

Depth to Water (from top of casing) ~ 0.90' (feet)

a) Height of Water Column ~ 37.95' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 37.95 (feet) x 0.163 gallons/foot = 6.2 gallons

Purge Data

Date: 05/3 /2012 Time: 1532 (start) 1603 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

▽ ~1.75' ~2.08' ~2.10' ~2.10' ~2.07'

Time	0000	1533	1540	1545	1555	1603	
Volume	gals	<0.1	2.0	3.5	4.5.0	6.5	
Specific Conductivity	mS/cmc	7.420	7.718	2.176	2.374	2.349	
pH	S.U.	8.38	6.95	6.65	6.52	6.48	
Turbidity	NTU	50.2	586.3	240.9	610.0	208.0	
Temperature	°C	12.77	12.24	11.89	12.18	12.12	
ORP	mV	174.6	251.5	280.3	311.6	326.7	
DO	mg/L	5.19	4.60	7.14	5.38	7.03	

Did well dry out? (If yes, how many times)_____ Actual Volume Removed_____ (gallons)

Sampling Data

Sample Date: 05/ 3 /2012 Sample Time: 1605
Appearance (visual) _____ Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6920 V2; SN 07fl00012, Minirae 2000 PID, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP Project Number: 140416.09040100
Weather: _____ PID upon opening: NM ppmv HUMIDITY TOO HIGH TO GET ACCURATE READING

Water Level Data

Date: 05/ 4 /2012 Start Time: 0825 **Well ID:** MW- 707 DD

Initial Total Casing Length ~ 39.59' (feet)

Depth to Water (from top of casing) ~ 21.34' (feet)

a) Height of Water Column 18.25' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 18.25 (feet) x 0.163 gallons/foot = ~3.0 gallons

Purge Data

Date: 05/ 4 /2012 Time: 0830 (start) 0840 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

▼ 38.36'

Time	0000	0835					
Volume	gals	~3.5					
Specific Conductivity	mS/cmc	19.04					
pH	S.U.	7.32					
Turbidity	NTU	428					
Temperature	°C	11.64					
ORP	mV	-67.7					
DO	mg/L	5.05					

Did well dry out? (If yes, how many times) CLOSE TO DRYING OUT; FINAL ▼ LEVEL ~38.36' BTOC Actual Volume Removed ~3.5 (gallons)

Sampling Data

Sample Date: 05/ 4 /2012 Sample Time: 0840
Appearance (visual) _____ Color CLOUDY Odor STALE, "CHEMICAL?" ODOR - NOT H_2S
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: CAN'T GET WATER UP TUBING, BAIL WELL, SAMPLE W/ PERISTALTIC PUMP FROM CLEAN BUCKET

Equipment: YSI 6920 V2; SN 07f100012, Minirae 2000 PID, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP Project Number: 140416.09040100
Weather: CLEAR 73°; WINDS PICK UP @ 1305 PID upon opening: 0.7 ppmv
Water Level Data

Date: 05/ 3 /2012 Start Time: 1250 **Well ID:** MW- 7088

Initial Total Casing Length ~39.72' SOFT (feet)

Depth to Water (from top of casing) ~6.83' (feet)

a) Height of Water Column ~32.89 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 32.89 (feet) x 0.163 gallons/foot = 5.4 gallons

Purge Data

Date: 05/ 3 /2012 Time: 1305 (start) 1359 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

SOMEWHAT CLOUDY

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	1305 ~6.83'	1311 ~7.60'	1315 ~7.85'	1322 ~7.81'	1331 ~7.75'	1342 ~7.70'	1351 ~7.89'
Volume	gals	<0.1	~1.0	~1.5	~2.0	~3.0	~4.0	~4.5
Specific Conductivity	mS/cmc	0.351	0.353	0.487	1.166	1.239	1.237	1.264
pH	S.U.	8.94	24.0 ↑ 8.46	7.83	6.82	6.91	7.01	7.05
Turbidity	NTU	0.6		44.3	55.0	32.6	14.7	29.8
Temperature	°C	14.91	12.91	13.13	13.46	13.40	13.84	13.24
ORP	mV	-3.1	155.6	177.6	68.1	53.4	44.0	37.7
DO	mg/L	8.77	5.73	5.31	2.11	0.80	0.67	0.54

~8.15' 1358 ~5.0 1.191 7.03 16.9 12.31 36.3 0.60

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~5.0 (gallons)

Sampling Data

Sample Date: 05/ 3 /2012 Sample Time: 1400
Appearance (visual) Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6920 V2; SN 07fl00012, Minirae 2000 PID, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: Cloudy, windy, 60°
PID upon opening: 2.7 ppmv
BACKGROUND ~2.3 ppmv

Water Level Data

Date: 05/ 4 /2012 Start Time: 1005 **Well ID:** MW- 709 DD

Initial Total Casing Length ~40.32' (feet)

Depth to Water (from top of casing) ~9.42' (feet)

a) Height of Water Column ~30.90' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 30.9 (feet) x 0.163 gallons/foot = 5.0 gallons

Purge Data

Date: 05/ 4 /2012 Time: 1105 (start) 1125 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

▼ ~15.04' NM ~14.26' ~14.39'

Time	0000	1110	1115	1120	1025		
Volume	gals	~2.0	~5.0	~8.0	~12.0		
Specific Conductivity	mS/cmc	1.258	1.278	1.336	1.343		
pH	S.U.	7.58	7.40	7.36	7.40		
Turbidity	NTU	21.2	31.3	31.2	25.5		
Temperature	°C	10.40	10.75	11.33	11.31		
ORP	mV	127.5	86.9	31.8	25.8		
DO	mg/L	6.07	4.49	4.14	3.79		

Did well dry out? (If yes, how many times) NO Actual Volume Removed 12 (gallons)

Sampling Data

Sample Date: 05/ 4 /2012 Sample Time: _____
Appearance (visual) _____ Color _____ Odor _____
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: WATER NOT COMING UP TUBING, BAIL INTO CLEAN BUCKET;

Equipment: YSI 6920 V2; SN 07fl00012, Minirae 2000 PID, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: _____
PID upon opening: ~0.4 ppmv
BACKGROUND ~ 0.5 ppmv

Water Level Data

Date: 05/3/2012 Start Time: 0845 **Well ID:** MW- 710D

Initial Total Casing Length ~21.42' (feet) (TMP)

Depth to Water (from top of casing) ~11.49' (feet)

a) Height of Water Column ~9.71 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 9.71 (feet) x 0.163 gallons/foot = 1.6 gallons

Purge Data

Date: 05/3/2012 Time: 0900 (start) 0930 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	0915	0923	0929			
Volume	gals	~4.0	~7.0	~10.0			
Specific Conductivity	mS/cmc	1.244	1.237	1.243			
pH	S.U.	7.20	7.17	7.22			
Turbidity	NTU	13.9	5.2	1.2			
Temperature	°C	10.52	10.29	10.43			
ORP	mV	73.1	74.6	65.0			
DO	mg/L	3.52	3.70	3.71			

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~10 (gallons)

Sampling Data

Sample Date: 05/3/2012 Sample Time: 0935
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: GROUNDWATER WOULD NOT COME UP TUBING, BAIL WELL + COLLECT READINGS FROM BUCKET. REJ (Fe) SPECKS IN 1ST BUCKET. SAMPLES COLLECTED VIA PERISTALTIC PUMP

Equipment: YSI 6920 V2; SN 07fl00012, Minirae 2000 PID, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: CLEAR, 55°
PID upon opening: ~1.0 ppmv
BACKGROUND ~ 0.5 ppmv

Water Level Data

Date: 05/3/2012 Start Time: 0845 **Well ID:** MW- 7102B

Initial Total Casing Length ~42.03' (feet) SOFT

Depth to Water (from top of casing) ~23.41' (feet)

a) Height of Water Column ~18.62' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 18.62 (feet) x 0.163 gallons/foot = 3.0 gallons

Purge Data

Date: 05/3/2012 Time: 1000 (start) 1030 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

~23.50' ~ 26.54' ~ 26.58'

Time	0000	1005	1010	1015			
Volume	gals	~3.0	~6.0	~9.0			
Specific Conductivity	mS/cmc	1.387	1.424	1.425			
pH	S.U.	7.27	7.12	7.12			
Turbidity	NTU	17.1	23.8	17.6			
Temperature	°C	11.48	11.47	11.44			
ORP	mV	117.2	116.5	117.8			
DO	mg/L	5.94	3.81	3.70			

Did well dry out? (If yes, how many times) No Actual Volume Removed ~9.5 (gallons)

Sampling Data

Sample Date: 05/3/2012 Sample Time: 1035
Appearance (visual) Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: UNABLE TO LIFT GW W/ PERISTALTIC PUMP/TUBING, BAIL WELL INTO CLEANED BUCKETS FOR PARAMETERS

Equipment: YSI 6920 V2; SN 07fl00012, Minirae 2000 PID, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: CLEAR, 68°
PID upon opening: ~0.9 ppmv
BACKGROUND: ~0.1 ppmv

Water Level Data

Date: 05/ 3 /2012 Start Time: 1110 **Well ID:** MW- 713D

Initial Total Casing Length ~ 21.99' (feet)

Depth to Water (from top of casing) ~ 11.52 (feet)

a) Height of Water Column ~10.47 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 10.47 (feet) x 0.163 gallons/foot = 1.70 gallons

Purge Data

Date: 05/ 3 /2012 Time: 1110 (start) 1149 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	1111 ▼ 11.95'	1116 ~12.17'	1123 ~12.35'	1130 ~12.45'	1136 ~12.53'	1143 ~12.59'
Volume	gals	<0.1	~1.0	~2.0	~3.0	~3.5	~4.0
Specific Conductivity	mS/cmc	1.151	0.964	0.917	0.898	0.910	0.885
pH	S.U.	7.20	6.89	6.80	6.72	6.62	6.55
Turbidity	NTU	466	49.9	26.3	15.9	10.6	6.5
Temperature	°C	16.01	11.53	11.32	11.19	11.26	11.56
ORP	mV	-238.1	-304.1	-313.0	-261.2	-266.3	-254.2
DO	mg/L	7.56	1.46	1.54	1.60	1.02	1.32

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~4 (gallons)

Sampling Data

Sample Date: 05/ 3 /2012 Sample Time: 1145
Appearance (visual) Color CLEAR Odor H_2S
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: H_2S ODOR NOTED WHILE PULLING TROLLS, WATER IS INITIALLY BLACK - CLEARS UP SLIGHT SHEEN SEEN ON WATER.

Equipment: YSI 6920 V2; SN 07fl00012, Minirae 2000 PID, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: MOSTLY SUNNY, 75
PID upon opening: 0.0 ppmv

Water Level Data

Date: 08/ 6 /2012 Start Time: 1100
Well ID: MW-26

Initial Total Casing Length ~16.95 (feet)

Depth to Water (from top of casing) ~4.22 (feet)

a) Height of Water Column ~12.73 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 12.73 (feet) x 0.163 gallons/foot = 2.1 gallons

Purge Data

Date: 08/ 6 /2012 Time: 1100 (start) 1145 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

		▼ ~4.40'	~4.42'	~4.43'	~4.43		
Time	0000	1120	1125	1140	1145		
Volume	gals	~0.5	~2.0	~3.0	~		
Specific Conductivity	mS/cmc	1.500	1.628	1.626	1.622		
pH	S.U.	7.77	7.54	7.57	7.56		
Turbidity	NTU	62.6	~0.1	9.7	27.7		
Temperature	°C	16.91	17.00	16.85	16.64		
ORP	mV	15.0	-4.5	-5.6	-4.6		
DO	mg/L	3.07	1.06	0.75	0.64		

Did well dry out? (If yes, how many times)_____ Actual Volume Removed_____ (gallons)

Sampling Data

Sample Date: 08/ 6 /2012 Sample Time: 1145
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6920 V2; SN 15951, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP Project Number: 140416.09040100
Weather: SUNNY 75° PID upon opening: 0.0 ppmv

Water Level Data

Date: 08/ 6 /2012 Start Time: 1350 **Well ID:** MW 6040

Initial Total Casing Length ~ 17.05 (feet)

Depth to Water (from top of casing) ~ 8.15' (feet)

a) Height of Water Column 8.90' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 8.9 (feet) x 0.163 gallons/foot = 1.5 gallons

Purge Data

Date: 08/ 6 /2012 Time: 1350 (start) 1425 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

I ~ 8.80' ~ 8.82' ~ 8.83' ~ 8.81' ~ 8.82

Time	0000	1400	1407	1415	1420	1425	
Volume	gals	~1.0	~2.0	~3.0	~4.0	~4.5	
Specific Conductivity	mS/cmc	1.945	1.893	1.895	1.895	1.865	
pH	S.U.	7.73	7.56	7.48	7.43	7.42	
Turbidity	NTU	319.2	64.5	15.8	2.7	~1.7	
Temperature	°C	18.46	18.03	17.98	17.81	17.50	
ORP	mV	68.6	80.4	85.9	90.8	94.1	
DO	mg/L	2.78	2.93	2.80	2.80	2.79	

Did well dry out? (If yes, how many times) No Actual Volume Removed ~4.5 (gallons)

Sampling Data

Sample Date: 08/ 6 /2012 Sample Time: 1430
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: COLLECT MS/MSD @ THIS WELL.

Equipment: YSI 6920 V2; SN 15951, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: M SUNNY, 75°
PID upon opening: 0.0 ppmv

Water Level Data

Date: 08/ 6 /2012 Start Time: 0825 **Well ID:** MW 605D

Initial Total Casing Length ~ 17.39' (feet)

Depth to Water (from top of casing) ~ 4.42' (feet)

a) Height of Water Column ~ 12.97 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 12.97 (feet) x 0.163 gallons/foot = ~ 2.1 gallons

Purge Data

Date: 08/ 6 /2012 Time: 0933 (start) 1005 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): ~4.41' Low Flow Sampling
~~0935~~ ~4.44' ~4.45' ~4.43' ~4.43

Time	0000	0935	0940	0945	0955	1005	
Volume	gals	~0.2	~0.5	~1.0	~2.5	~3.0	
Specific Conductivity	mS/cmc	0.714	0.751	0.629	0.628	0.632	
pH	S.U.	7.95	7.64	7.56	7.52	7.49	
Turbidity	NTU	300.0	233.7	110.1	47.4	29.0	
Temperature	°C	17.27	16.77	16.97	17.15	17.15	
ORP	mV	75.2	75.7	70.4	64.7	63.1	
DO	mg/L	4.38	1.15	0.66	0.50	0.43	

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~3 (gallons)

Sampling Data

Sample Date: 08/ 6 /2012 Sample Time: 1005
Appearance (visual) CLEAR Color CLEAR Odor NO ODOR
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: DUPLICATE 02 COLLECTED @ THIS WELL

Equipment: YSI 6920 V2; SN 15951, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP Project Number: 140416.09040100
Weather: _____ PID upon opening: 0.0 ppmv

Water Level Data

Date: 08/ 6 /2012 Start Time: 0830 **Well ID:** MW-704D

Initial Total Casing Length ~ 38.86' (feet)

Depth to Water (from top of casing) ~ 4.60' (feet)

a) Height of Water Column 34.26 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 34.26 (feet) x 0.163 gallons/foot = ~5.6 gallons

Purge Data

Date: 08/ 6 /2012 Time: 0835 (start) 0915 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	0838	0845	0850	0855	0900	0905	0915
		~5.17'	~5.19'	~5.20'	~5.20'	~5.19'	~5.18'	~5.19'
Volume	gals	~0.3	~2.5	~3.5	~4.5	~5.0	~6.0	~7.5
Specific Conductivity	mS/cmc	11.88	2.105	2.000	1.932	1.905	1.892	1.857
pH	S.U.	9.47	8.50	7.99	7.76	7.62	7.56	7.47
Turbidity	NTU	641.9	663.4	130.0	42.0	27.0	23.3	18.5
Temperature	°C	13.91	13.31	13.18	13.17	13.19	13.16	13.09
ORP	mV	67.2	50.4	65.8	73.1	75.6	80.1	83.9
DO	mg/L	3.90	2.60	1.40	0.85	0.78	0.90	1.02

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~8.0 (gallons)

Sampling Data

Sample Date: 08/ 6 /2012 Sample Time: 0920
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: WATER GETS TURBID WHILE COLLECTING TOTAL SAMPLES (?)

Equipment: YSI 6920 V2; SN 15951, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP Project Number: 140416.09040100
Weather: SUNNY, 80° PID upon opening: 0.0 ppmv

Water Level Data

Date: 08/ 6 /2012 Start Time: 1200 **Well ID:** MW-707JD

Initial Total Casing Length ~39.56' (feet)

Depth to Water (from top of casing) ~21.93 (feet)

a) Height of Water Column 17.63 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 17.63 (feet) x 0.163 gallons/foot = 2.9 gallons

Purge Data

Date: 08/ 6 /2012 Time: 1203 (start) 1225 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling
I ~24.74' ~26.11' ~26.65' ~27.40' ~28.19'

Time	0000	1205	1207	1210	1215	1220	
Volume	gals	<0.1	0.3	0.4	0.5	0.8	
Specific Conductivity	mS/cmc	9.072	9.241	9.350	9.684	10.45	
pH	S.U.	7.33	7.37	7.34	7.36	7.40	
Turbidity	NTU	3.0	-1.7	-2.3	-4.6	-4.8	
Temperature	°C	17.65	17.42	17.31	18.56	20.15	
ORP	mV	156.3	132.2	125.5	117.5	114.9	
DO	mg/L	2.61	4.05	4.42	4.52	4.56	

DRAWING DOWN

Did well dry out? (If yes, how many times) NO Actual Volume Removed 0.9 (gallons)

Sampling Data

Sample Date: 08/ 6 /2012 Sample Time: 1225 – 1320
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: INSTALLED NARROW ϕ TEFLON TUBING (USACE) TO PURGE + SAMPLE END SAMPLING @ 1320 AFTER FILLING 2 - 1L AND 1 - 250 ml BOTTLE PUMP COULD NOT PULL ANY MORE FROM FINAL I @ ~ 30.8' BTOC
Equipment: YSI 6920 V2; SN 15951, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP Project Number: 140416.09040100
Weather: SUNNY 94° PID upon opening: 0.0 ppmv

Water Level Data

Date: 08/ 4 /2012 Start Time: 1430 **Well ID:** MW-708DD

Initial Total Casing Length ~39.72 (feet) BTOC

Depth to Water (from top of casing) ~8.59 (feet)

a) Height of Water Column 31.13 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 31.13 (feet) x 0.163 gallons/foot = ~5.0 gallons

Purge Data

Date: 08/ 4/2012 Time: 1430 (start) _____ (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

		▼ ~9.55'	~9.77'	~9.80'	9.83'	~9.89'	~9.90'
Time	0000	1440	1445	1455	1501	1510	1515
Volume	gals	~1.0	~3.0	~3.5	4	5	~5.5
Specific Conductivity	mS/cmc	0.961	1.192	1.224	1.208	1.183	1.175
pH	S.U.	9.16	7.88	7.49	7.33	7.14	7.10
Turbidity	NTU	415.5	57.4	13.8	2.9	3.1	3.4
Temperature	°C	13.74	13.77	13.43	13.45	13.34	13.37
ORP	mV	5.3	-3.6	-4.6	13.8	25.5	31.8
DO	mg/L	1.35	0.64	0.45	0.38	0.33	0.32

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~6 (gallons)

Sampling Data

Sample Date: 08/ 4 /2012 Sample Time: 1520
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: NOTE WATER IN BATTERY COMPARTMENT OF 9500 TROLL

Equipment: YSI 6920 V2; SN 15951, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: SUNNY, 80°
PID upon opening: 0.0 ppmv

Water Level Data

Date: 08/ 6 /2012 Start Time: 1450 **Well ID:** MW 709DD

Initial Total Casing Length ~ 40.29' (feet)

Depth to Water (from top of casing) ~ 8.79' (feet)

a) Height of Water Column 31.50 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 31.5 (feet) x 0.163 gallons/foot = ~5.1 gallons

Purge Data

Date: 08/ 6 /2012 Time: 1450 (start) 1520 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

		~9.59'	~9.75'	~9.78'	~9.76'	~9.77'	~9.77'
Time	0000	~~0.2~~ 1450	1455	1500	1505	1510	1520
Volume	gals	0.2	~1.0	~1.5	~2.5	~3.0	~4.0
Specific Conductivity	mS/cmc	1.460	1.444	1.560	1.478	1.453	1.453
pH	S.U.	8.17	7.82	7.62	7.52	7.47	7.44
Turbidity	NTU	~1.8	~3.4	2.3	~3.9	~5.0	~5.4
Temperature	°C	14.78	13.53	13.12	13.15	13.05	12.98
ORP	mV	50.1	~9.0	~33.4	~34.4	~27.3	~22.9
DO	mg/L	3.57	1.17	0.66	0.52	0.43	0.37

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~4 (gallons)

Sampling Data

Sample Date: 08/ 6 /2012 Sample Time: 1520
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6920 V2; SN 15951, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: P. SUNNY 76° F
PID upon opening: 0.0 ppmv

Water Level Data

Date: 08/ 4 /2012 Start Time: 1005 **Well ID:** MW-710

Initial Total Casing Length ~21.43 (feet)

Depth to Water (from top of casing) ~12.49 (feet) BTOC

a) Height of Water Column 8.94 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 8.94 (feet) x 0.163 gallons/foot = ~1.5 gallons

Purge Data

Date: 08/ 4 /2012 Time: 1030 (start) 1045 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

		IV	~13.10'	~12.96'	~12.91'	~12.86'		
Time	0000	1034	1036	1040	1045			
Volume	gals	~3.0	~4.5	~5.5	~6.0			
Specific Conductivity	mS/cmc	1.226	1.204	1.203	1.200			
pH	S.U.	8.29	8.02	7.72	7.58			
Turbidity	NTU	10.4	7.9	5.0	1.2			
Temperature	°C	14.67	14.30	14.92	14.71			
ORP	mV	54.2	55.1	54.0	51.5			
DO	mg/L	4.90	4.28	3.80	3.65			

Did well dry out? (If yes, how many times) No Actual Volume Removed ~6.0 (gallons)

Sampling Data

Sample Date: 08/ 4 /2012 Sample Time: 1050
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6920 V2; SN 15951, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP Project Number: 140416.09040100
Weather: P. SUNNY, 78°F PID upon opening: 0.0 ppmv

Water Level Data

Date: 08/ 4 /2012 Start Time: 1000 **Well ID:** MW 710 D1

Initial Total Casing Length ~42.00 (feet)

Depth to Water (from top of casing) ~25.26 (feet) BTOC

a) Height of Water Column 16.74 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 16.74 (feet) x 0.163 gallons/foot = ~2.7 gallons

Purge Data

Date: 08/ 4 /2012 Time: 1100 (start) _____ (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

		~27.37'	~27.00'	~27.41'	~27.66'	~25.77'	~27.97'	NM
Time	0000	1105	1110	1115	1120	1130	1140	1145
Volume	gals	~2.0	~4.0	~6.0	~7.5	~8.5	~10.0	~11.0
Specific Conductivity	mS/cm	1.372	1.325	1.400	1.435	1.504	1.492	1.506
pH	S.U.	7.75	7.46	7.34	7.30	7.39	7.33	7.34
Turbidity	NTU	56.9	39.4	40.9	36.6	54.6	37.0	42.0
Temperature	°C	16.88	13.74	13.28	13.21	14.08	14.12	15.06
ORP	mV	75.7	85.0	86.2	87.1	85.0	87.5	85.8
DO	mg/L	5.74	4.39	3.93	3.82	5.62	3.83	4.21

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~11.0 (gallons)

Sampling Data

Sample Date: 08/ 4 /2012 Sample Time: 1145
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6920 V2; SN 15951, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP Project Number: 140416.09040100
Weather: M.SUNNY 80° PID upon opening: 0.0 ppmv

Water Level Data

Date: 08/4/2012 Start Time: 1235 **Well ID:** MW-713D

Initial Total Casing Length ~21.99 (feet) BTOC

Depth to Water (from top of casing) ~13.09 (feet)

a) Height of Water Column ~8.90' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 8.90 (feet) x 0.163 gallons/foot = ~1.5 gallons

Purge Data

Date: 08/4/2012 Time: 1240 (start) _____ (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

~~~
~~~

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: SUNNY, 45'
PID upon opening: 0.0 ppmv

Water Level Data

Date: 10/ 22 /2012 Start Time: 0850 **Well ID:** MW-7040D0

Initial Total Casing Length ~ 38.82' BTOC (feet)

Depth to Water (from top of casing) ~ 2.39' (feet) BTOC

a) Height of Water Column ~ 36.43 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 36.43 (feet) x 0.163 gallons/foot = 5.9 gallons

Purge Data

Date: 10/ 22/2012 Time: 0915 (start) 1027 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	0918	0926	0934	0940	0947	1007
Volume	gals	<0.1	~0.8	~1.2	~2.0	~2.5	~4.0
Specific Conductivity	mS/cmc	0.988	0.977	0.981	1.064	1.931	2.204
pH	S.U.	11.44	11.53	11.44	11.60	8.33	7.24
Turbidity	NTU	8.2	7.1	11.4	30.5	63.6	348.2
Temperature	°C	15.25	15.43	15.22	14.99	14.78	14.60
ORP	mV	-33.0	-32.4	-37.1	-30.6	30.3	21.6
DO	mg/L	8.36	6.28	5.32	4.73	3.82	3.60

~2.71' ~2.75' ~2.76' ~2.76' ~2.74' ~2.72'

~2.72' 1027 ~5.0 2.172 7.17 53.1 14.61 -7.3 3.56

~2.72' 1020 ~4.5 2.185 7.20 154.0 14.60 2.8 3.57

Did well dry out? (If yes, how many times) NO Actual Volume Removed 5 (gallons)

Sampling Data

Sample Date: 10/ 22 /2012 Sample Time: 1030
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6920 V2; SN 12014, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: SUNNY, 50°
PID upon opening: 0.0 ppmv

Water Level Data

Date: 10/22/2012 Start Time: 1145 **Well ID:** MW-710D

Initial Total Casing Length ~21.37' (feet)

Depth to Water (from top of casing) ~11.79' (feet)

a) Height of Water Column ~9.58' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 9.58 (feet) x 0.163 gallons/foot = 1.6 gallons

Purge Data

Date: 10/22/2012 Time: 1220 (start) 1250 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling, ~11.64' ~11.95' ~11.95' ~11.95

Time	0000	1223	1232	1240	1248		
Volume	gals	<0.1	~1.0	~2.0	~2.5		
Specific Conductivity	mS/cmc	1.720	1.673	1.683	1.675		
pH	S.U.	7.54	7.12	7.12	7.12		
Turbidity	NTU	-4.2	-6.0	-6.9	-4.2		
Temperature	°C	15.26	14.46	14.67	14.53		
ORP	mV	19.8	-6.2	-20.1	-29.5		
DO	mg/L	7.52	4.12	3.71	3.70		

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~2.5 (gallons)

Sampling Data

Sample Date: 10/22/2012 Sample Time: 1250
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: COLLECTED 3 VOAS FOR 8260 FOR USACE

Equipment: YSI 6920 V2; SN 12014, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: SUNNY, 62°
PID upon opening: 6.0 ppmv

Water Level Data

Date: 10/ 22 /2012 Start Time: 1545 **Well ID:** MW-7100

Initial Total Casing Length ~42.00' (feet)

Depth to Water (from top of casing) ~23.43' (feet)

a) Height of Water Column ~18.57' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 18.57 (feet) x 0.163 gallons/foot = ~3.0 gallons

Purge Data

Date: 10/ 22/2012 Time: 1600 (start) 1635 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000	1600	1614	1622	1628	1635	
		~23.26'	~23.28'	~23.32'	~23.32'	~23.34'	
Volume	gals	<0.1	~1.0	~1.5	~2.0	~2.5	
Specific Conductivity	mS/cmc	1.333	1.265	1.259	1.259	1.256	
pH	S.U.	7.25	7.06	7.04	7.07	7.06	
Turbidity	NTU	28.1	3.2	3.3	1.1	0.7	
Temperature	°C	14.36	13.62	13.54	13.55	13.54	
ORP	mV	1.9	-19.3	-28.0	-34.6	-36.7	
DO	mg/L	5.04	4.18	4.02	4.01	4.03	

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~2.5 (gallons)

Sampling Data

Sample Date: 10/ 22 /2012 Sample Time: 1640
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6920 V2; SN 12014, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: SUNNY, 60°F
PID upon opening: 0.0 ppmv

Water Level Data

Date: 10/ 22 /2012 Start Time: 1425 **Well ID:** MW-708 DD

Initial Total Casing Length ~ 39.69' (feet)

Depth to Water (from top of casing) ~ 7.80 (feet)

a) Height of Water Column ~ 31.89 (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 31.89 (feet) x 0.163 gallons/foot = 5.2 gallons

Purge Data

Date: 10/ 22 /2012 Time: 1433 (start) 1515 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

		~ 8.14'	~ 8.61'	~ 8.68'	~ 8.70'	~ 8.75'	~ 8.75'
Time	0000	1435	1442	1455	1503	1508	1515
Volume	gals	< 0.1	~ 1.0	~ 2.0	~ 2.5	~ 3.0	~ 3.5
Specific Conductivity	mS/cmc	0.662	1.235	1.329	1.371	1.373	1.383
pH	S.U.	10.64	7.45	7.21	7.20	7.20	7.19
Turbidity	NTU	12.7	12.3	4.9	0.5	-2.8	-3.6
Temperature	°C	16.73	15.73	15.47	15.49	15.40	15.40
ORP	mV	-35.6	-39.2	-41.2	-44.1	-45.8	-47.3
DO	mg/L	5.61	4.61	4.14	4.04	3.65	3.59

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~35 (gallons)

Sampling Data

Sample Date: 10/ 22 /2012 Sample Time: 1515
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: COLLECTED 3 VOAs FOR 8260 FOR USACE

Equipment: YSI 6920 V2; SN 12014, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: RAIN, 54°
PID upon opening: NM ppmv – RAIN

Water Level Data

Date: 10/23/2012 Start Time: 0850 **Well ID:** MW-7130

Initial Total Casing Length ~21.99' (feet)

Depth to Water (from top of casing) ~12.62' (feet) FILM + ODOR NOTED

a) Height of Water Column ~9.37' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 9.37 (feet) x 0.163 gallons/foot = 1.5 gallons

Purge Data

Date: 10/23/2012 Time: 1305 (start) _____ (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

PARAMETERS NOT MEASURED DUE TO PRODUCT FILM ? SOLVENT? ODOR/SULFUR ODOR NOTED

Purge Volume (3 to 5 well volumes): Low Flow Sampling

Time	0000						
Volume	gals						
Specific Conductivity	mS/cmc						
pH	S.U.						
Turbidity	NTU						
Temperature	°C						
ORP	mV						
DO	mg/L						

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~4.5 (gallons)

Sampling Data

Sample Date: 10/23/2012 Sample Time: 1330
Appearance (visual) CLEAR Color CLEAR Odor SULPHER/?COAL TAR, SOLVENT
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: COLLECTED 3 VOAs FOR 8260 FOR USACE ALSO.

Equipment: YSI 6920 V2; SN 12014, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: SHOWERS, MIST
PID upon opening: NM ppmv RA

Water Level Data

Date: 10/ 23 /2012 Start Time: 0905 **Well ID:** MW-605D

RENTAL TROLL STUCK IN WELL

Initial Total Casing Length ~17.32' (feet) 10/24

Depth to Water (from top of casing) (~2.33') (feet) ~1.81'

a) Height of Water Column ~15.51' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 15.51 (feet) x 0.163 gallons/foot = 2.5 gallons

Purge Data

Date: 10/ 24/2012 Time: 0920 (start) 1015 (finish)

FISHED TROLL OUT @ 0905

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

TURBID

Time	0000	0921 ~1.89'	0934 ~1.89'	0943 ~1.89'	0951 ~1.88'	1005 ~1.88'	1013 ~1.88'
Volume	gals	<0.1	~1.5	~2.0	~3.0	~3.5	~4.0
Specific Conductivity	mS/cmc	0.694	0.689	0.691	0.692	0.692	0.691
pH	S.U.	7.17	7.19	7.21	7.22	7.22	7.23
Turbidity	NTU	1330	1021	761	540	178.8	133.5
Temperature	°C	15.69	15.82	15.78	15.79	15.86	15.85
ORP	mV	64.6	35.8	20.2	7.5	-5.0	-13.9
DO	mg/L	4.21	3.69	3.62	3.59	3.60	3.56

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~4.0 (gallons)

Sampling Data

Sample Date: 10/ 24 /2012 Sample Time: 1015
Appearance (visual) SLT TURBID Color SLT. GRAYISH Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: COLLECTED 3 VOAS FOR 8260 FOR USACE.

Equipment: YSI 6920 V2; SN 12014, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: RAIN
PID upon opening: NM ppmv
RAIN

Water Level Data

Date: 10/24/2012 Start Time: 0920 **Well ID:** MW-26

Initial Total Casing Length ~16.95' (feet)

Depth to Water (from top of casing) ~2.0' (feet)

a) Height of Water Column ~14.95' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 14.95 (feet) x 0.163 gallons/foot = 2.4 gallons

Purge Data

Date: 10/24/2012 Time: 1155 (start) 1245 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

		▼	~4.98'	~2.02'	~2.05'	~2.04'	~2.04'	
Time	0000	1150	1210	1219	1230	1242		
Volume	gals	<0.1	~1.0	~1.5	~2.0	~3.0		
Specific Conductivity	mS/cmc	1.124	1.127	1.130	1.131	1.129		
pH	S.U.	7.44	7.38	7.43	7.45	7.46		
Turbidity	NTU	86.3	86.7	41.6	16.0	8.7		
Temperature	°C	16.55	16.63	16.72	16.51	16.46		
ORP	mV	21.5	-26.8	-38.1	-52.3	-62.1		
DO	mg/L	5.21	3.62	3.58	3.56	3.55		

Did well dry out? (If yes, how many times) NO Actual Volume Removed ~3.0 (gallons)

Sampling Data

Sample Date: 10/24/2012 Sample Time: 1245
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: COLLECT 3 VOAS FOR 8260 FOR USACE

Equipment: YSI 6920 V2; SN 12014, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: RAIN 52° RAIN
PID upon opening: NM ppmv

Water Level Data

Date: 10/23/2012 Start Time: 0930 **Well ID:** MW-707DD

Initial Total Casing Length ~39.64' (feet)

Depth to Water (from top of casing) ~18.25 (feet)

a) Height of Water Column ~21.39' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 21.39 (feet) x 0.163 gallons/foot = ~3.5 gallons

Purge Data

Date: 10/23/2012 Time: 1715 (start) _____ (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling, WELL DRAWING DOWN QUICKLY
~18.64' ~22.46' ~25.15' ~26.89

Time	0000	1715	1730	1735	1745		
Volume	gals	<0.1	~0.5	~0.9	~1.1		
Specific Conductivity	mS/cmc	10.44	10.22	10.17	10.18		
pH	S.U.	6.99	7.01	7.12	7.15		
Turbidity	NTU	7.0	4.1	11.6	9.0		
Temperature	°C	13.32	13.42	13.44	13.21		
ORP	mV	6.6	-8.5	-4.5	-6.0		
DO	mg/L	5.73	5.14	5.86	6.13		

Did well dry out? (If yes, how many times) DRAWDOWN Actual Volume Removed ~1.1 (gallons)

Sampling Data

Sample Date: 10/23/2012 Sample Time: 1750
Appearance (visual) CLEAR Color CLEAR Odor NO
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: COLLECTED 3 VOAS FOR 8260 FOR USACE

Equipment: YSI 6920 V2; SN 12014, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: RAIN 55°F
PID upon opening: NM ppmv
RAIN

Water Level Data

Date: 10/ 23 /2012 Start Time: 0935
Well ID: MW-604D

Initial Total Casing Length ~16.92' (feet)
Depth to Water (from top of casing) ~6.28' (feet)
a) Height of Water Column ~10.64' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 10.64 (feet) x 0.163 gallons/foot = 1.7 gallons

Purge Data

Date: 10/ 23 /2012 Time: 1420 (start) 1505 (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

~6.0 ~~1423~~ ~5.97' ~5.92' ~5.92

Time	0000	1423	1450	1500	1505		
Volume	gals	~0.1	~2.5	~3.0	~3.5		
Specific Conductivity	mS/cmc	1.874	1.655	1.643	1.647		
pH	S.U.	7.25	7.14	7.15	7.15		
Turbidity	NTU	111.8	86.6	47.6	40.7		
Temperature	°C	15.21	15.36	15.38	15.42		
ORP	mV	+10.8	-59.0	-68.4	-69.6		
DO	mg/L	5.73	3.78	3.70	3.70		

Did well dry out? (If yes, how many times) NO Actual Volume Removed 3.5 (gallons)

Sampling Data

Sample Date: 10/23 /2012 Sample Time: 1505
Appearance (visual) CLEAR Color CLEAR Odor NONE
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS: COLLECT 3 VOAs FOR 8260 FOR USACE

Equipment: YSI 6920 V2; SN 12014, Geopump with dedicated Teflon-lined tubing.

Groundwater Sample Event Field Data Sheet

Project Name: Former Guterl Specialty Steel FUSRAP
Project Number: 140416.09040100
Weather: _____
PID upon opening: NM ppmv RAIN

Water Level Data

Date: 10/ 23 /2012 Start Time: 0940 **Well ID:** MW-709DD

Initial Total Casing Length ~ 40.29' (feet)

Depth to Water (from top of casing) ~ 7.44' (feet)

a) Height of Water Column ~ 32.85' (feet)

*Volume Factors:
1-inch well = 0.041 gal/ft
1.5-inch well = 0.092 gal/ft
2-inch well = 0.163 gal/ft
3-inch well = 0.367 gal/ft
4-inch well = 0.653 gal/ft
6-inch well = 1.468 gal/ft

Well Volume ([a] x volume factor *) = 32.85 (feet) x 0.163 gallons/foot = 5.4 gallons

Purge Data

Date: 10/ 23/2012 Time: 1600 (start) _____ (finish)

Method: Geopump peristaltic pump
(Waterra, bailer, submersible pump, peristaltic pump, etc.)

Purge Volume (3 to 5 well volumes): Low Flow Sampling

		▼ ~7.31	~7.31'	~7.27'	~7.28		
Time	0000	1605	1614	1630	1637		
Volume	gals	<0.1	~1.0	~2.5	~3.0		
Specific Conductivity	mS/cmc	1.590	1.684	1.540	1.521		
pH	S.U.	7.36	7.25	7.27	7.27		
Turbidity	NTU	17.6	26.0	4.1	1.6		
Temperature	°C	14.86	13.77	13.58	13.56		
ORP	mV	-117.0	-179.1	-149.0	-143.6		
DO	mg/L	4.76	3.80	3.67	3.67		

Did well dry out? (If yes, how many times) ND Actual Volume Removed ~3.0 (gallons)

Sampling Data

Sample Date: 10/ 23 /2012 Sample Time: 1640
Appearance (visual) _____ Color _____ Odor _____
Sampling Method: Low Flow Sampling

Constituents Sampled	Container Discription	Perservative
Total Uranium	250 ml plastic	HNO_3
Total Uranium (filtered)	250 ml plastic	HNO_3
Isotopic Uranium	1000 ml plastic	HNO_3
Isotopic Uranium (filtered)	1000 ml plastic	HNO_3

Personnel: Kevin Cronin, Jeff Smith
COMMENTS:

Equipment: YSI 6920 V2; SN 12014, Geopump with dedicated Teflon-lined tubing.

APPENDIX C

Analytical Data
(Provided on same CD as Appendix A)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guteryl Steel

Lot #: F1H020470

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 25, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H020470

This report contains the analytical results for the four samples received under chain of custody by TestAmerica in St. Louis on August 2, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

There were no nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H020470

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Isotopic Thorium by Alpha Spectroscopy	EML A-01-R MOD	
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL"
HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

SAMPLE SUMMARY

F1H020470

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLCN1	001	CITY OF LOCKPORT SEWER LOCATION #1 US-0001	07/27/11	13:55
MLCN2	002	CITY OF LOCKPORT SEWER LOCATION #1 UW-0001	07/27/11	13:45
MLCN3	003	CITY OF LOCKPORT SEWER LOCATION #2 US-0002	07/27/11	14:35
MLCN4	004	CITY OF LOCKPORT SEWER LOCATION #2 UW-0002	07/27/11	14:25

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: CITY OF LOCKPORT SEWER LOCATION #1 US-0001

Radiochemistry

Lab Sample ID: F1H020470-001
Work Order: MLCN1
Matrix: SOLID

Date Collected: 07/27/11 1355
Date Received: 08/02/11 0940

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1223198		Yld % 82
Thorium 228	0.270		0.073	0.100	0.031	08/11/11	08/17/11
Thorium 230	0.448		0.096	0.100	0.020	08/11/11	08/17/11
Thorium 232	0.224		0.065	0.100	0.021	08/11/11	08/17/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1223199		Yld % 79
Uranium 234	3.55		0.39	0.10	0.03	08/11/11	08/17/11
Uranium 235/236	0.201		0.067	0.100	0.014	08/11/11	08/17/11
Uranium 238	3.72		0.40	0.10	0.01	08/11/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: CITY OF LOCKPORT SEWER LOCATION #1 US-0001 DUP

Radiochemistry

Lab Sample ID: F1H020470-001X
Work Order: MLCN1
Matrix: SOLID

Date Collected: 07/27/11 1355
Date Received: 08/02/11 0940

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1223198		Yld % 80
Thorium 228	0.220		0.066	0.100	0.033	08/11/11	08/17/11
Thorium 230	0.271		0.073	0.100	0.034	08/11/11	08/17/11
Thorium 232	0.220		0.065	0.100	0.031	08/11/11	08/17/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1223199		Yld % 79
Uranium 234	3.15		0.35	0.10	0.02	08/11/11	08/17/11
Uranium 235/236	0.195		0.067	0.100	0.025	08/11/11	08/17/11
Uranium 238	3.33		0.37	0.10	0.02	08/11/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: CITY OF LOCKPORT SEWER LOCATION #1 UW-0001

Radiochemistry

Lab Sample ID: F1H020470-002
Work Order: MLCN2
Matrix: WATER

Date Collected: 07/27/11 1345
Date Received: 08/02/11 0940

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1227018		Yld % 83
Thorium 228	-0.002	U	0.020	0.100	0.058	08/15/11	08/16/11
Thorium 230	0.026		0.030	0.100	0.023	08/15/11	08/16/11
Thorium 232	0.009	U	0.017	0.100	0.023	08/15/11	08/16/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1227019		Yld % 80
Uranium 234	10.9		1.1	0.1	0.04	08/15/11	08/16/11
Uranium 235/236	0.61		0.17	0.10	0.05	08/15/11	08/16/11
Uranium 238	10.4		1.1	0.1	0.04	08/15/11	08/16/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: CITY OF LOCKPORT SEWER LOCATION #1 UW-0001 DUP

Radiochemistry

Lab Sample ID: F1H020470-002X
Work Order: MLCN2
Matrix: WATER

Date Collected: 07/27/11 1345
Date Received: 08/02/11 0940

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1227018**	**Yld % 76**
Thorium 228	0.007	U	0.028	0.100	0.062	08/15/11	08/16/11
Thorium 230	0.018	U	0.026	0.100	0.025	08/15/11	08/16/11
Thorium 232	0.009	U	0.018	0.100	0.025	08/15/11	08/16/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1227019**	**Yld % 78**
Uranium 234	10.9		1.1	0.1	0.02	08/15/11	08/16/11
Uranium 235/236	0.49		0.15	0.10	0.03	08/15/11	08/16/11
Uranium 238	11.2		1.1	0.1	0.02	08/15/11	08/16/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: CITY OF LOCKPORT SEWER LOCATION #2 US-0002

Radiochemistry

Lab Sample ID: F1H020470-003
Work Order: MLCN3
Matrix: SOLID

Date Collected: 07/27/11 1435
Date Received: 08/02/11 0940

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1223198		Yld % 51
Thorium 228	0.47		0.12	0.10	0.04	08/11/11	08/16/11
Thorium 230	0.325		0.0998	0.100	0.041	08/11/11	08/16/11
Thorium 232	0.44		0.12	0.10	0.02	08/11/11	08/16/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1223199		Yld % 84
Uranium 234	4.37		0.45	0.10	0.01	08/11/11	08/17/11
Uranium 235/236	0.219		0.069	0.100	0.013	08/11/11	08/17/11
Uranium 238	4.77		0.49	0.10	0.02	08/11/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: CITY OF LOCKPORT SEWER LOCATION #2 UW-0002

Radiochemistry

Lab Sample ID: F1H020470-004
Work Order: MLCN4
Matrix: WATER

Date Collected: 07/27/11 1425
Date Received: 08/02/11 0940

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1227018		Yld % 32
Thorium 228	0.053	U	0.075	0.100	0.11	08/15/11	08/16/11
Thorium 230	-0.005	U	0.011	0.100	0.096	08/15/11	08/16/11
Thorium 232	-0.005	U	0.011	0.100	0.096	08/15/11	08/16/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1227019		Yld % 62
Uranium 234	0.43		0.14	0.10	0.03	08/15/11	08/16/11
Uranium 235/236	0.038		0.044	0.100	0.034	08/15/11	08/16/11
Uranium 238	0.44		0.14	0.10	0.03	08/15/11	08/16/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H020470
Matrix: SOLID

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g	Batch # 1223198		Yld % 94		F1H110000-198B
Thorium 228	-0.0009	U	0.0018	0.100	0.017		08/11/11	08/16/11
Thorium 230	**0.022**		**0.018**	0.100	**0.01**		**08/11/11**	**08/16/11**
Thorium 232	0.007	U	0.010	0.100	0.01		08/11/11	08/16/11
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/g	Batch # 1223199		Yld % 82		F1H110000-199B
Uranium 234	0.011	U	0.015	0.100	0.022		08/11/11	08/16/11
Uranium 235/236	0.005	U	0.011	0.100	0.014		08/11/11	08/16/11
Uranium 238	0.0042	U	0.0084	0.100	0.011		08/11/11	08/16/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H020470
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID / Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1227018		Y1d % 91	F1H150000-018B
Thorium 228	0.0	U	0.0075	0.100	0.020	08/15/11	08/16/11
Thorium 230	0.022		0.026	0.100	0.020	08/15/11	08/16/11
Thorium 232	0.0	U	0.0074	0.100	0.020	08/15/11	08/16/11
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1227019		Y1d % 86	F1H150000-019B
Uranium 234	0.013	U	0.022	0.100	0.034	08/15/11	08/16/11
Uranium 235/236	-0.0024	U	0.0047	0.100	0.043	08/15/11	08/16/11
Uranium 238	0.0	U	0.0076	0.100	0.020	08/15/11	08/16/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H020470
Matrix: SOLID

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso THORIUM (LONG CT) DOE A-01-R MOD		pCi/g		A-01-R MOD			F1H110000-198C
Thorium 230	24.5	23.8	2.3	0.04	90	97	(77 - 122)
	Batch #:	1223198		Analysis Date:	08/16/11		
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/g		A-01-R MOD			F1H110000-199C
Uranium 234	1.63	1.63	0.21	0.02	85	100	(74 - 139)
Uranium 238	1.70	1.62	0.21	0.02	85	95	(75 - 140)
	Batch #:	1223199		Analysis Date:	08/16/11		

NOTE(S)

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H020470
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso THORIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H150000-018C**
Thorium 230	2.37	2.30	0.33	0.04	87	97	(77 - 118)
	Batch #:	1227018		Analysis Date:	08/16/11		
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H150000-019C**
Uranium 234	3.26	3.03	0.40	0.03	94	93	(76 - 136)
Uranium 238	3.39	3.12	0.40	0.04	94	92	(76 - 134)
	Batch #:	1227019		Analysis Date:	08/16/11		

NOTE(S):

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1H020470
Matrix: SOLID

Date Sampled: 07/27/11
Date Received: 08/02/11

Parameter	SAMPLE Result	Total Uncert. (2σ +/-)	% Yld	DUPLICATE Result	Total Uncert. (2 σ +/-)	% Yld	QC Sample ID Precision	
Iso THORIUM (LONG CT) DOE A-01-R MOD		pCi/g		A-01-R MOD			F1H020470-001	
Thorium 228	0.270	0.073	82	0.220	0.066	80	20	%RPD
Thorium 230	0.448	0.096	82	0.271	0.073	80	49	%RPD
Thorium 232	0.224	0.065	82	0.220	0.065	80	1	%RPD
	Batch #:	1223198	(Sample)	1223198	(Duplicate)			
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/g		A-01-R MOD			F1H020470-001	
Uranium 234	3.55	0.39	79	3.15	0.35	79	12	%RPD
Uranium 235/236	0.201	0.067	79	0.195	0.067	79	3	%RPD
Uranium 238	3.72	0.40	79	3.33	0.37	79	11	%RPD
	Batch #:	1223199	(Sample)	1223199	(Duplicate)			

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

U Result is less than the sample detection limit.

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1H020470
Matrix: WATER

Date Sampled: 07/27/11
Date Received: 08/02/11

Parameter	SAMPLE Result		Total Uncert. (2σ +/-)	% Yld	DUPLICATE Result		Total Uncert. (2 σ +/-)	% Yld	QC Sample ID Precision	
Iso THORIUM (LONG CT) DOE A-01-R MOD			**pCi/L**		**A-01-R MOD**				**F1H020470-002**	
Thorium 228	-0.002	U	0.020	83	0.007	U	0.028	76	382	%RPD
Thorium 230	0.026		0.030	83	0.018	U	0.026	76	37	%RPD
Thorium 232	0.009	U	0.017	83	0.009	U	0.018	76	6	%RPD
	Batch #:		1227018 (Sample)		1227018 (Duplicate)					
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**		**A-01-R MOD**				**F1H020470-002**	
Uranium 234	10.9		1.1	80	10.9		1.1	78	0.2	%RPD
Uranium 235/236	0.61		0.17	80	0.49		0.15	78	21	%RPD
Uranium 238	10.4		1.1	80	11.2		1.1	78	7	%RPD
	Batch #:		1227019 (Sample)		1227019 (Duplicate)					

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

U Result is less than the sample detection limit.

F1H020470

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: RAD

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706 Shaw Environmental & Infrastructure Inc

Quote #: 89251 SDG:
Guteryl Steel
Report to: Kevin Cronin

#SMPS in LOT: 0

Date Received: 2011-08-02
Analytical Due Date: 2011-08-15
Report Due Date: 2011-08-16
Report Type: B Standard Report
EDD Code: 00

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
1	CITY OF LOCKPORT SEWER LO			2011-07-27 / 1355	MLCN1	SOLID

SAMPLE COMMENTS:

XX ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2M	EML	A-01-R MOD	SOLID, A-01-R MDD, Iso URANIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2O	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso THORIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	CITY OF LOCKPORT SEWER LO			2011-07-27 / 1345	MLCN2	WATER

SAMPLE COMMENTS:

XX ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso URANIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2O	EML	A-01-R MOD	WATER, A-01-R MOD, Iso THORIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
3	CITY OF LOCKPORT SEWER LO			2011-07-27 / 1435	MLCN3	SOLID

SAMPLE COMMENTS:

XX ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso URANIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2O	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso THORIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	CITY OF LOCKPORT SEWER LO			2011-07-27 / 1425	MLCN4	WATER

SAMPLE COMMENTS:

XX ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso URANIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX 2O	EML	A-01-R MOD	WATER, A-01-R MOD, Iso THORIUM (LONG CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

TestAmerica St. Louis
15 Rider Trail North
City, MO 63045
ne 314.298.8566 fax 314.298.8757

CUR 388

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 072711	COC No: 001
w Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
0 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
cinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below			SDG No.
3) 782-4807 FAX	X 2 weeks STANDARD			
ject Name: Former Guterl Specialty Steel Corporation FUSRA	1 week			
: Lockport, NY	2 days			
#	1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
City of Lockport Sewer Location #1 US-0001	7/27/2011	1355	Grab	Sludge	1		X	X											1X500G
City of Lockport Sewer Location #1 UW-0001	7/27/2011	1345	Grab	Aqueous	3		X	X											3XLP
City of Lockport Sewer Location #2 US-0001 KC 0002	7/27/2011	1435	Grab	Sludge	1		X	X											1X500G
City of Lockport Sewer Location #2 UW-0001 KC 0002	7/27/2011	1425	Grab	Aqueous	3		X	X											3XLP

servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 4

sible Hazard Identification
X Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client X Disposal By Lab ☐ Archive For _____ Months

cial Instructions/QC Requirements & Comments:
sible Radioactive Hazard SEWER LOCATION #2 US-0001 may CONTAIN HYDROCARBONS.

nquished by:	Company: Shaw E & I. Inc.	Date/Time: 8/1/11 1340	Received by:	Company: BF-LO	Date/Time: 08-01-11 13:40
nquished by:	Company: BF-LO	Date/Time: 08-01-11 14:00	Received by:	Company: BF-LO	Date/Time: 8.1.11 1400
nquished by:	Company: BF-LO	Date/Time: 8.1.11 1420	Received by:	Company: TA STL	Date/Time: 8/2/11 0940

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): FIH020470 TestAmerica St. Louis

CUR Form #: 388

CONDITION UPON RECEIPT FORM

Client: SHAW ENVIRO

Quote No: 89251

COC/RFA No: 001

Initiated By: NVO Date: 8/2/11 Time: 0940

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: Y (N)

Shipping # (s):*

1. 4485 0258 1694
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Sample Temperature (s):**

1. AMBIENT
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

Client Contact Name: _____ Informed by: _____

Sample(s) processed "as is"

Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 8/5/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

REVISED

PROJECT NO. 140415

Guteryl Steel

Lot #: F1H090481

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

October 14, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H090481
Revised

This report contains the analytical results for the eight samples received under chain of custody by TestAmerica in St. Louis on August 5, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

This report is revised to correct sample idenification numbers for sample-002 and 006 to A04AMW230001 and A04AMW230001 Dissolved.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1229246
The CCV %D for Dichlorodifluoromethane is outside the established QC limits. This analyte is not part of the analysis request and thus this excursion does not affect the data.

The MS/MSD recoveries for 1,1-Dichloroethene, 1,1-Dichloroethane, 1,2-Dichloroethene (total), 1,1,1-Trichloroethane, Benzene, Trichloroethene, and Bromodichloromethane are outside the established QC limits. The RPD is within method acceptance criteria except for 1,4-Dioxane indicating a possible matrix interference. Method performance is demonstrated by acceptable LCS recovery.

The sample required a dilution due to high concentrations of target analytes. There was insufficient sample to perform the dilution and reanalysis.

The Method Blank surrogate recovery for Toluene-d8 is outside acceptance limits. The samples associated with this method blank demonstrated acceptable surrogate recoveries indicating the surrogate excursion is isolated to the method blank and not indicative of the batch.

During screening F1H090481did not appear to have hits above the calibration range. Screening is not as accurate as the full analytical test. The sample was selected to be used for the MS/MSD in the batch. Therefore, all three vials were consumed in the first run. "E" flagged concentration values should be considered estimates.

Affected Samples:
F1H090481 (1): A04DMW240001

Batch: 1230013
There was insufficient sample volume to perform MS/MSD analysis. An LCS/LCSD was performed to demonstrate accuracy and replicate precision.

Affected Samples:
F1H090481 (2): A04DMW230001
F1H090481 (3): A04DMW713D0001

The samples were analyzed at a dilution due to high concentrations of target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090481 (2): A04DMW230001

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1222063
The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

Affected Samples:
F1H090481 (1): A04DMW240001
F1H090481 (2): A04DMW230001
F1H090481 (3): A04DMW713D0001

F1H090481 (4): A04BMW190001
F1H090481 (5): A04DMW240001 DISSOLVED
F1H090481 (6): A04DMW230001 DISSOLVED
F1H090481 (7): A04DMW713D0001 DISSOLVED
F1H090481 (8): A04BMW190001 DISSOLVED

Chloride (MCAWW 300.0A)

Batch: 1224118
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090481 (1): A04DMW240001
F1H090481 (2): A04DMW230001
F1H090481 (3): A04DMW713D0001
F1H090481 (4): A04BMW190001

Sulfate (MCAWW 300.0A)

Batch: 1224123
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090481 (1): A04DMW240001
F1H090481 (2): A04DMW230001
F1H090481 (3): A04DMW713D0001
F1H090481 (4): A04BMW190001

Nitrite as N (MCAWW 300.0A)

Batch: 1224121
The following samples were reported ND at dilution for Nitrite, due to interference with Chloride in the undiluted runs. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090481 (1): A04DMW240001
F1H090481 (3): A04DMW713D0001
F1H090481 (4): A04BMW190001

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H090481 (1): A04DMW240001
F1H090481 (2): A04DMW230001
F1H090481 (3): A04DMW713D0001

F1H090481 (4): A04BMW190001

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1224122
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H090481 (1): A04DMW240001
F1H090481 (2): A04DMW230001
F1H090481 (3): A04DMW713D0001
F1H090481 (4): A04BMW190001

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H090481

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H090481

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLHG0	001	A04DMW240001	08/04/11	09:25
MLHH0	002	A04AMW230001	08/04/11	10:40
MLHH1	003	A04DMW713D0001	08/04/11	12:00
MLHH2	004	A04BMW190001	08/04/11	13:30
MLHH8	005	A04DMW240001 DISSOLVED	08/04/11	09:25
MLHJ6	006	A04AMW230001 DISSOLVED	08/04/11	10:40
MLHJ7	007	A04DMW713D0001 DISSOLVED	08/04/11	12:00
MLHKE	008	A04BMW190001 DISSOLVED	08/04/11	13:30

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001

GC/MS Volatiles

Lot-Sample #...: F1H090481-001 Work Order #...: MLHG01AC Matrix.....: WATER
Date Sampled...: 08/04/11 09:25 Date Received..: 08/05/11
Prep Date.....: 08/16/11 Analysis Date..: 08/17/11
Prep Batch #...: 1229246 Analysis Time..: 01:31
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	**0.41 J**	**1.0**	**ug/L**
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**15**	**2.0**	**ug/L**
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**52 E**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**21**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**24**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**41 E**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**17**	**1.0**	**ug/L**
Vinyl chloride	**6.1**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001

GC/MS Volatiles

Lot-Sample #...: F1H090481-001 Work Order #...: MLHG01AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	115	(85 - 120)
Dibromofluoromethane	97	(85 - 115)
1,2-Dichloroethane-d4	98	(70 - 120)
4-Bromofluorobenzene	105	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

E Estimated result. Result concentration exceeds the calibration range.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001

TOTAL Metals

Lot-Sample #...: F1H090481-001 Matrix.....: WATER
Date Sampled...: 08/04/11 09:25 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	39.8 E	1	ug/L	SW846 6020A	08/10-08/11/11	MLHG01A4
		Dilution Factor: 1		Analysis Time..: 20:48		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AE
		Dilution Factor: 1		Analysis Time..: 15:22		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AF
		Dilution Factor: 1		Analysis Time..: 15:22		
Arsenic	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AD
		Dilution Factor: 1		Analysis Time..: 15:22		
Barium	67.9	50	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AG
		Dilution Factor: 1		Analysis Time..: 15:22		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AH
		Dilution Factor: 1		Analysis Time..: 15:22		
Calcium	104000 E	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHG01AJ
		Dilution Factor: 5		Analysis Time..: 11:42		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AK
		Dilution Factor: 1		Analysis Time..: 15:22		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AL
		Dilution Factor: 1		Analysis Time..: 15:22		
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AM
		Dilution Factor: 1		Analysis Time..: 15:22		
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AN
		Dilution Factor: 1		Analysis Time..: 15:22		
Iron	767	100	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AP
		Dilution Factor: 1		Analysis Time..: 15:22		
Magnesium	31700	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AQ
		Dilution Factor: 1		Analysis Time..: 09:50		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001

TOTAL Metals

Lot-Sample #...: F1H090481-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**110**	**15**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHG01AR**
		Dilution Factor: 1		Analysis Time..: 15:22		
Sodium	**77600**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHG01AT**
		Dilution Factor: 1		Analysis Time..: 09:50		
Nickel	**15.8 J**	**40**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHG01AU**
		Dilution Factor: 1		Analysis Time..: 15:22		
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLHG01AV
		Dilution Factor: 1		Analysis Time..: 17:34		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHG01AW
		Dilution Factor: 1		Analysis Time..: 15:22		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHG01AX
		Dilution Factor: 1		Analysis Time..: 17:34		
Strontium	**495 E**	**25**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHG01A0**
		Dilution Factor: 5		Analysis Time..: 11:42		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHG01A1
		Dilution Factor: 1		Analysis Time..: 15:22		
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHG01A2
		Dilution Factor: 1		Analysis Time..: 15:22		
Zinc	**13.9 J**	**20**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHG01A3**
		Dilution Factor: 1		Analysis Time..: 15:22		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001

General Chemistry

Lot-Sample #...: F1H090481-001 Work Order #...: MLHG0 Matrix.....: WATER
Date Sampled...: 08/04/11 09:25 Date Received..: 08/05/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	116	20.0	mg/L	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 100		Analysis Time..: 03:43		
Fluoride	0.89	0.10	mg/L	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1		Analysis Time..: 03:14		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1		Analysis Time..: 03:14		
Nitrite	ND	0.040	mg/L	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 2		Analysis Time..: 05:23		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1		Analysis Time..: 03:14		
Sulfate	99.1	5.0	mg/L	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 10		Analysis Time..: 03:28		
Total Alkalinity	248	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	633	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001

GC/MS Volatiles

Lot-Sample #...: F1H090481-002 Work Order #...: MLHH01AN Matrix.....: WATER
Date Sampled...: 08/04/11 10:40 Date Received..: 08/05/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 17:00
Dilution Factor: 5
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	10	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	10	ug/L
Carbon tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	10	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chloroethane	**82 D**	**10**	**ug/L**
Chloroform	**1.4 J,D**	**5.0**	**ug/L**
1,2-Dichlorobenzene	ND	5.0	ug/L
1,3-Dichlorobenzene	ND	5.0	ug/L
1,4-Dichlorobenzene	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	**50 D**	**5.0**	**ug/L**
1,2-Dichloroethene (total)	**160 D**	**10**	**ug/L**
1,2-Dichloropropane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	5.0	ug/L
2-Hexanone	ND	25	ug/L
Methylene chloride	**3.2 J,B,D**	**5.0**	**ug/L**
4-Methyl-2-pentanone	ND	25	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	**8.5 D**	**5.0**	**ug/L**
Toluene	**0.53 J,D**	**5.0**	**ug/L**
1,1,2-Trichloroethane	**1.9 J,D**	**5.0**	**ug/L**
Trichloroethene	**190 D**	**5.0**	**ug/L**
Vinyl chloride	**17 D**	**10**	**ug/L**
Xylenes (total)	ND	25	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	111	(85 - 120)
Dibromofluoromethane	114	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	109	(75 - 120)

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001

GC/MS Volatiles

Lot-Sample #...: F1H090481-002 Work Order #...: MLHH01AN Matrix.....: WATER

NOTE(S):

D Result was obtained from the analysis of a dilution.

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001

GC/MS Volatiles

Lot-Sample #...: F1H090481-002 Work Order #...: MLHH02AN Matrix.....: WATER
Date Sampled...: 08/04/11 10:40 Date Received..: 08/05/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 16:34
Dilution Factor: 25
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethane	650 D	25	ug/L
1,1,1-Trichloroethane	1100 D	25	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
1,2-Dichloroethane-d4	102	(70 - 120)
4-Bromofluorobenzene	105	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001

TOTAL Metals

Lot-Sample #...: F1H090481-002 Matrix.....: WATER
Date Sampled...: 08/04/11 10:40 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	6.7 E	1	ug/L	SW846 6020A	08/10-08/11/11	MLHH01AF
		Dilution Factor: 1		Analysis Time..: 20:54		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AQ
		Dilution Factor: 1		Analysis Time..: 15:35		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AR
		Dilution Factor: 1		Analysis Time..: 15:35		
Arsenic	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AP
		Dilution Factor: 1		Analysis Time..: 15:35		
Barium	58.8	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AT
		Dilution Factor: 1		Analysis Time..: 15:35		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AU
		Dilution Factor: 1		Analysis Time..: 15:35		
Calcium	88200 E	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHH01AV
		Dilution Factor: 5		Analysis Time..: 11:55		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AW
		Dilution Factor: 1		Analysis Time..: 15:35		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AX
		Dilution Factor: 1		Analysis Time..: 15:35		
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH01A0
		Dilution Factor: 1		Analysis Time..: 15:35		
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLHH01A1
		Dilution Factor: 1		Analysis Time..: 15:35		
Iron	928	100	ug/L	SW846 6010C	08/10-08/12/11	MLHH01A2
		Dilution Factor: 1		Analysis Time..: 15:35		
Magnesium	22400	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHH01A3
		Dilution Factor: 1		Analysis Time..: 10:03		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001

TOTAL Metals

Lot-Sample #...: F1H090481-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**804**	**15**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH01A4**
		Dilution Factor: 1		Analysis Time..: 15:35		
Sodium	**19300**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH01A5**
		Dilution Factor: 1		Analysis Time..: 10:03		
Nickel	**20.6 J**	**40**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH01A6**
		Dilution Factor: 1		Analysis Time..: 15:35		
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLHH01A7
		Dilution Factor: 1		Analysis Time..: 17:47		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH01A8
		Dilution Factor: 1		Analysis Time..: 15:35		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHH01A9
		Dilution Factor: 1		Analysis Time..: 17:47		
Strontium	**341 E**	**25**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHH01AA**
		Dilution Factor: 5		Analysis Time..: 11:55		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AC
		Dilution Factor: 1		Analysis Time..: 15:35		
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH01AD
		Dilution Factor: 1		Analysis Time..: 15:35		
Zinc	**117**	**20**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH01AE**
		Dilution Factor: 1		Analysis Time..: 15:35		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001

General Chemistry

Lot-Sample #...: F1H090481-002 Work Order #...: MLHH0 Matrix.....: WATER
Date Sampled...: 08/04/11 10:40 Date Received..: 08/05/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	23.1	2.0	mg/L	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 10		Analysis Time..: 12:35		
Fluoride	0.92	0.10	mg/L	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1		Analysis Time..: 12:21		
Nitrate	0.082	0.020	mg/L	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1		Analysis Time..: 12:21		
Nitrite	ND	0.020	mg/L	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 1		Analysis Time..: 12:21		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1		Analysis Time..: 12:21		
Sulfate	52.4	5.0	mg/L	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 10		Analysis Time..: 12:35		
Total Alkalinity	252	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	411	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001

GC/MS Volatiles

Lot-Sample #...: F1H090481-003 Work Order #...: MLHH11AN Matrix.....: WATER
Date Sampled...: 08/04/11 12:00 Date Received..: 08/05/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 16:07
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**4.2**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**1.0 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**0.23 J**	**2.0**	**ug/L**
Chloroform	**2.5**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**0.71 J**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**2.2**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**3.4**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	**0.10 J**	**1.0**	**ug/L**
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.92 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.18 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	**1.0 J**	**5.0**	**ug/L**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001

GC/MS Volatiles

Lot-Sample #...: F1H090481-003 Work Order #...: MLHH11AN Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	100	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
4-Bromofluorobenzene	110	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001

TOTAL Metals

Lot-Sample #...: F1H090481-003 Matrix.....: WATER
Date Sampled...: 08/04/11 12:00 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	**5.1 E**	**1**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHH11AF**
		Dilution Factor: 1		Analysis Time..: 21:01		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH11AQ
		Dilution Factor: 1		Analysis Time..: 15:42		
Aluminum	**280**	**200**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH11AR**
		Dilution Factor: 1		Analysis Time..: 15:42		
Arsenic	**14.2**	**10**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH11AP**
		Dilution Factor: 1		Analysis Time..: 15:42		
Barium	**217**	**50**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH11AT**
		Dilution Factor: 1		Analysis Time..: 15:42		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH11AU
		Dilution Factor: 1		Analysis Time..: 15:42		
Calcium	**146000 E**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHH11AV**
		Dilution Factor: 5		Analysis Time..: 12:01		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH11AW
		Dilution Factor: 1		Analysis Time..: 15:42		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH11AX
		Dilution Factor: 1		Analysis Time..: 15:42		
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH11A0
		Dilution Factor: 1		Analysis Time..: 15:42		
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLHH11A1
		Dilution Factor: 1		Analysis Time..: 15:42		
Iron	**583**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH11A2**
		Dilution Factor: 1		Analysis Time..: 15:42		
Magnesium	**60900**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHH11A3**
		Dilution Factor: 5		Analysis Time..: 12:01		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001

TOTAL Metals

Lot-Sample #...: F1H090481-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**134**	**15**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH11A4**
		Dilution Factor: 1		Analysis Time..: 15:42		
Sodium	**74700**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH11A5**
		Dilution Factor: 1		Analysis Time..: 10:09		
Nickel	ND	40	ug/L	SW846 6010C	08/10-08/12/11	MLHH11A6
		Dilution Factor: 1		Analysis Time..: 15:42		
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLHH11A7
		Dilution Factor: 1		Analysis Time..: 17:53		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH11A8
		Dilution Factor: 1		Analysis Time..: 15:42		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHH11A9
		Dilution Factor: 1		Analysis Time..: 17:53		
Strontium	**1300 E**	**25**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHH11AA**
		Dilution Factor: 5		Analysis Time..: 12:01		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHH11AC
		Dilution Factor: 1		Analysis Time..: 15:42		
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH11AD
		Dilution Factor: 1		Analysis Time..: 15:42		
Zinc	**8.8 J**	**20**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH11AE**
		Dilution Factor: 1		Analysis Time..: 15:42		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001

General Chemistry

Lot-Sample #...: F1H090481-003 Work Order #...: MLHH1 Matrix.....: WATER
Date Sampled...: 08/04/11 12:00 Date Received..: 08/05/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	173	20.0	mg/L	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 100		Analysis Time..: 04:26		
Fluoride	0.23	0.10	mg/L	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1		Analysis Time..: 03:57		
Nitrate	0.075	0.020	mg/L	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1		Analysis Time..: 03:57		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 10		Analysis Time..: 04:11		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1		Analysis Time..: 03:57		
Sulfate	76.2	5.0	mg/L	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 10		Analysis Time..: 04:11		
Total Alkalinity	419	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	904	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW190001

TOTAL Metals

Lot-Sample #...: F1H090481-004 Matrix.....: WATER
Date Sampled...: 08/04/11 13:30 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	16.4 E	1	ug/L	SW846 6020A	08/10-08/11/11	MLHH21AF
		Dilution Factor: 1		Analysis Time..: 21:08		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AQ
		Dilution Factor: 1		Analysis Time..: 15:48		
Aluminum	3150	200	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AR
		Dilution Factor: 1		Analysis Time..: 15:48		
Arsenic	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AP
		Dilution Factor: 1		Analysis Time..: 15:48		
Barium	59.6	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AT
		Dilution Factor: 1		Analysis Time..: 15:48		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AU
		Dilution Factor: 1		Analysis Time..: 15:48		
Calcium	152000 E	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHH21AV
		Dilution Factor: 5		Analysis Time..: 12:07		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AW
		Dilution Factor: 1		Analysis Time..: 15:48		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AX
		Dilution Factor: 1		Analysis Time..: 15:48		
Chromium	8.0 J	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH21A0
		Dilution Factor: 1		Analysis Time..: 15:48		
Copper	12.2 J	25	ug/L	SW846 6010C	08/10-08/12/11	MLHH21A1
		Dilution Factor: 1		Analysis Time..: 15:48		
Iron	3800	100	ug/L	SW846 6010C	08/10-08/12/11	MLHH21A2
		Dilution Factor: 1		Analysis Time..: 15:48		
Magnesium	64700	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHH21A3
		Dilution Factor: 5		Analysis Time..: 12:07		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW190001

TOTAL Metals

Lot-Sample #...: F1H090481-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	351	15	ug/L	SW846 6010C	08/10-08/12/11	MLHH21A4
		Dilution Factor: 1		Analysis Time..: 15:48		
Sodium	63400	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHH21A5
		Dilution Factor: 1		Analysis Time..: 10:15		
Nickel	19.6 J	40	ug/L	SW846 6010C	08/10-08/12/11	MLHH21A6
		Dilution Factor: 1		Analysis Time..: 15:48		
Lead	8.7 J	10	ug/L	SW846 6010C	08/10-08/16/11	MLHH21A7
		Dilution Factor: 1		Analysis Time..: 18:00		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH21A8
		Dilution Factor: 1		Analysis Time..: 15:48		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHH21A9
		Dilution Factor: 1		Analysis Time..: 18:00		
Strontium	409 E	25	ug/L	SW846 6010C	08/10-08/16/11	MLHH21AA
		Dilution Factor: 5		Analysis Time..: 12:07		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AC
		Dilution Factor: 1		Analysis Time..: 15:48		
Vanadium	4.7 J	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AD
		Dilution Factor: 1		Analysis Time..: 15:48		
Zinc	70.9	20	ug/L	SW846 6010C	08/10-08/12/11	MLHH21AE
		Dilution Factor: 1		Analysis Time..: 15:48		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW190001

General Chemistry

Lot-Sample #...: F1H090481-004 Work Order #...: MLHH2 Matrix.....: WATER
Date Sampled...: 08/04/11 13:30 Date Received..: 08/05/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	72.5	20.0	mg/L	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 100		Analysis Time..: 02:59		
Fluoride	1.4	0.10	mg/L	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1		Analysis Time..: 02:30		
Nitrate	0.89	0.020	mg/L	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1		Analysis Time..: 02:30		
Nitrite	0.034 B	0.10	mg/L	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 5		Analysis Time..: 04:40		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1		Analysis Time..: 02:30		
Sulfate	95.0	5.0	mg/L	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 10		Analysis Time..: 02:45		
Total Alkalinity	400	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	500	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-005 Matrix.....: WATER
Date Sampled...: 08/04/11 09:25 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	**42.7 E**	**1**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHH81A2**
		Dilution Factor: 1		Analysis Time..: 21:14		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AC
		Dilution Factor: 1		Analysis Time..: 15:54		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AD
		Dilution Factor: 1		Analysis Time..: 15:54		
Arsenic	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AA
		Dilution Factor: 1		Analysis Time..: 15:54		
Barium	**67.3**	**50**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH81AE**
		Dilution Factor: 1		Analysis Time..: 15:54		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AF
		Dilution Factor: 1		Analysis Time..: 15:54		
Calcium	**110000 E**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHH81AG**
		Dilution Factor: 5		Analysis Time..: 12:13		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AH
		Dilution Factor: 1		Analysis Time..: 15:54		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AJ
		Dilution Factor: 1		Analysis Time..: 15:54		
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AK
		Dilution Factor: 1		Analysis Time..: 15:54		
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AL
		Dilution Factor: 1		Analysis Time..: 15:54		
Iron	**612**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH81AM**
		Dilution Factor: 1		Analysis Time..: 15:54		
Magnesium	**32500**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH81AN**
		Dilution Factor: 1		Analysis Time..: 10:21		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**104**	**15**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH81AP**
		Dilution Factor: 1		Analysis Time..: 15:54		
Sodium	**71300**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH81AQ**
		Dilution Factor: 1		Analysis Time..: 10:21		
Nickel	**14.6 J**	**40**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH81AR**
		Dilution Factor: 1		Analysis Time..: 15:54		
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLHH81AT
		Dilution Factor: 1		Analysis Time..: 18:06		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AU
		Dilution Factor: 1		Analysis Time..: 15:54		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHH81AV
		Dilution Factor: 1		Analysis Time..: 18:06		
Strontium	**522 E**	**25**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHH81AW**
		Dilution Factor: 5		Analysis Time..: 12:13		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHH81AX
		Dilution Factor: 1		Analysis Time..: 15:54		
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHH81A0
		Dilution Factor: 1		Analysis Time..: 15:54		
Zinc	**11.3 J**	**20**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHH81A1**
		Dilution Factor: 1		Analysis Time..: 15:54		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-006 Matrix.....: WATER
Date Sampled...: 08/04/11 10:40 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	**6.3 E**	**1**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHJ61AD**
		Dilution Factor: 1		Analysis Time..: 21:21		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AG
		Dilution Factor: 1		Analysis Time..: 16:01		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AH
		Dilution Factor: 1		Analysis Time..: 16:01		
Arsenic	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AF
		Dilution Factor: 1		Analysis Time..: 16:01		
Barium	**54.5**	**50**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ61AJ**
		Dilution Factor: 1		Analysis Time..: 16:01		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AK
		Dilution Factor: 1		Analysis Time..: 16:01		
Calcium	**92800 E**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHJ61AL**
		Dilution Factor: 5		Analysis Time..: 12:20		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AM
		Dilution Factor: 1		Analysis Time..: 16:01		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AN
		Dilution Factor: 1		Analysis Time..: 16:01		
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AP
		Dilution Factor: 1		Analysis Time..: 16:01		
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AQ
		Dilution Factor: 1		Analysis Time..: 16:01		
Iron	**679**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ61AR**
		Dilution Factor: 1		Analysis Time..: 16:01		
Magnesium	**21800**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ61AT**
		Dilution Factor: 1		Analysis Time..: 10:28		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**728**	**15**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ61AU**
		Dilution Factor: 1		Analysis Time..: 16:01		
Sodium	**18100**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ61AV**
		Dilution Factor: 1		Analysis Time..: 10:28		
Nickel	**22.1 J**	**40**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ61AW**
		Dilution Factor: 1		Analysis Time..: 16:01		
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLHJ61AX
		Dilution Factor: 1		Analysis Time..: 18:12		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61A0
		Dilution Factor: 1		Analysis Time..: 16:01		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHJ61A1
		Dilution Factor: 1		Analysis Time..: 18:12		
Strontium	**364 E**	**25**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHJ61A2**
		Dilution Factor: 5		Analysis Time..: 12:20		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61A3
		Dilution Factor: 1		Analysis Time..: 16:01		
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHJ61AA
		Dilution Factor: 1		Analysis Time..: 16:01		
Zinc	**104**	**20**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ61AC**
		Dilution Factor: 1		Analysis Time..: 16:01		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-007 Matrix.....: WATER
Date Sampled...: 08/04/11 12:00 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	**4.7 E**	**1**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHJ71AH**
		Dilution Factor: 1		Analysis Time..: 21:28		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AL
		Dilution Factor: 1		Analysis Time..: 16:07		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AM
		Dilution Factor: 1		Analysis Time..: 16:07		
Arsenic	**9.3 J**	**10**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ71AK**
		Dilution Factor: 1		Analysis Time..: 16:07		
Barium	**221**	**50**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ71AN**
		Dilution Factor: 1		Analysis Time..: 16:07		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AP
		Dilution Factor: 1		Analysis Time..: 16:07		
Calcium	**141000 E**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHJ71AQ**
		Dilution Factor: 5		Analysis Time..: 12:26		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AR
		Dilution Factor: 1		Analysis Time..: 16:07		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AT
		Dilution Factor: 1		Analysis Time..: 16:07		
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AU
		Dilution Factor: 1		Analysis Time..: 16:07		
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AV
		Dilution Factor: 1		Analysis Time..: 16:07		
Iron	**259**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHJ71AW**
		Dilution Factor: 1		Analysis Time..: 16:07		
Magnesium	**59200**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHJ71AX**
		Dilution Factor: 5		Analysis Time..: 12:26		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**113**	15	ug/L	**SW846 6010C**	**08/10-08/12/11**	**MLHJ71A0**
		Dilution Factor: 1		Analysis Time..: 16:07		
Sodium	**73000**	1000	ug/L	**SW846 6010C**	**08/10-08/12/11**	**MLHJ71A1**
		Dilution Factor: 1		Analysis Time..: 10:34		
Nickel	ND	40	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71A2
		Dilution Factor: 1		Analysis Time..: 16:07		
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLHJ71A3
		Dilution Factor: 1		Analysis Time..: 18:19		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AA
		Dilution Factor: 1		Analysis Time..: 16:07		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHJ71AC
		Dilution Factor: 1		Analysis Time..: 18:19		
Strontium	**1270 E**	25	ug/L	**SW846 6010C**	**08/10-08/16/11**	**MLHJ71AD**
		Dilution Factor: 5		Analysis Time..: 12:26		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AE
		Dilution Factor: 1		Analysis Time..: 16:07		
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AF
		Dilution Factor: 1		Analysis Time..: 16:07		
Zinc	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHJ71AG
		Dilution Factor: 1		Analysis Time..: 16:07		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW190001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-008 Matrix.....: WATER
Date Sampled...: 08/04/11 13:30 Date Received..: 08/05/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	**12.9 E**	1	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHKE1AM**
		Dilution Factor: 1		Analysis Time..: 21:34		
Prep Batch #...: 1222063						
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AQ
		Dilution Factor: 1		Analysis Time..: 16:27		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AR
		Dilution Factor: 1		Analysis Time..: 16:27		
Arsenic	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AP
		Dilution Factor: 1		Analysis Time..: 16:27		
Barium	**43.8 J**	**50**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHKE1AT**
		Dilution Factor: 1		Analysis Time..: 16:27		
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AU
		Dilution Factor: 1		Analysis Time..: 16:27		
Calcium	**65300 E**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHKE1AV**
		Dilution Factor: 5		Analysis Time..: 12:45		
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AW
		Dilution Factor: 1		Analysis Time..: 16:27		
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AX
		Dilution Factor: 1		Analysis Time..: 16:27		
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1A0
		Dilution Factor: 1		Analysis Time..: 16:27		
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1A1
		Dilution Factor: 1		Analysis Time..: 16:27		
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1A2
		Dilution Factor: 1		Analysis Time..: 16:27		
Magnesium	**29300**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHKE1A3**
		Dilution Factor: 1		Analysis Time..: 10:53		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW190001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090481-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	ND	15	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AA
		Dilution Factor: 1		Analysis Time..: 16:27		
Sodium	**62000**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHKE1AC**
		Dilution Factor: 1		Analysis Time..: 10:53		
Nickel	ND	40	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AD
		Dilution Factor: 1		Analysis Time..: 16:27		
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLHKE1AE
		Dilution Factor: 1		Analysis Time..: 18:38		
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AF
		Dilution Factor: 1		Analysis Time..: 16:27		
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLHKE1AG
		Dilution Factor: 1		Analysis Time..: 18:38		
Strontium	**326 E**	**25**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHKE1AH**
		Dilution Factor: 5		Analysis Time..: 12:45		
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AJ
		Dilution Factor: 1		Analysis Time..: 16:27		
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AK
		Dilution Factor: 1		Analysis Time..: 16:27		
Zinc	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLHKE1AL
		Dilution Factor: 1		Analysis Time..: 16:27		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRJ01AA Matrix.....: WATER
MB Lot-Sample #: F1H170000-246

Prep Date.....: 08/16/11 Analysis Time..: 00:59
Analysis Date..: 08/17/11 Prep Batch #...: 1229246
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	122 *	(85 - 120)
Dibromofluoromethane	92	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRJ01AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	101	(70 - 120)		
4-Bromofluorobenzene	109	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

* Surrogate recovery is outside stated control limits.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRLL1AA Matrix.....: WATER
MB Lot-Sample #: F1H180000-013

Prep Date.....: 08/17/11 Analysis Time..: 10:16
Analysis Date..: 08/17/11 Prep Batch #...: 1230013
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	**0.28 J**	**1.0**	**ug/L**	**SW846 8260B**
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	103	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRLL1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	102	(70 - 120)		
4-Bromofluorobenzene	101	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090481 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H100000-061 **Prep Batch #...:** 1222061						
Uranium	ND	1	ug/L	SW846 6020A	08/10-08/11/11	MLH641AA
		Dilution Factor: 1				
		Analysis Time..: 20:34				
MB Lot-Sample #: F1H100000-063 **Prep Batch #...:** 1222063						
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLH681AD
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Antimony	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLH681AU
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Arsenic	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLH681AA
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Barium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLH681AE
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Beryllium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLH681AF
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Cadmium	ND	5	ug/L	SW846 6010C	08/10-08/12/11	MLH681AH
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Calcium	ND	1000	ug/L	SW846 6010C	08/10-08/16/11	MLH681AG
		Dilution Factor: 1				
		Analysis Time..: 11:29				
Chromium	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLH681AK
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Cobalt	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLH681AJ
		Dilution Factor: 1				
		Analysis Time..: 15:09				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090481 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25	ug/L	SW846 6010C	08/10-08/12/11	MLH681AL
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLH681AM
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Lead	ND	10	ug/L	SW846 6010C	08/10-08/16/11	MLH681AT
		Dilution Factor: 1				
		Analysis Time..: 17:21				
Magnesium	ND	1000	ug/L	SW846 6010C	08/10-08/12/11	MLH681AN
		Dilution Factor: 1				
		Analysis Time..: 09:37				
Manganese	ND	15	ug/L	SW846 6010C	08/10-08/12/11	MLH681AP
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Nickel	ND	40	ug/L	SW846 6010C	08/10-08/12/11	MLH681AR
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Selenium	ND	15	ug/L	SW846 6010C	08/10-08/16/11	MLH681AV
		Dilution Factor: 1				
		Analysis Time..: 17:21				
Silver	ND	10	ug/L	SW846 6010C	08/10-08/12/11	MLH681AC
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Sodium	ND	1000	ug/L	SW846 6010C	08/10-08/12/11	MLH681AQ
		Dilution Factor: 1				
		Analysis Time..: 09:37				
Strontium	ND	5	ug/L	SW846 6010C	08/10-08/16/11	MLH681AW
		Dilution Factor: 1				
		Analysis Time..: 11:29				
Thallium	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLH681AX
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Vanadium	ND	50	ug/L	SW846 6010C	08/10-08/12/11	MLH681A0
		Dilution Factor: 1				
		Analysis Time..: 15:09				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090481 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20	ug/L	SW846 6010C	08/10-08/12/11	MLH681A1

Dilution Factor: 1
Analysis Time..: 15:09

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H090481 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLNQN1AA		MB Lot-Sample #: F1H120000-118		
	ND	0.20	mg/L	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Fluoride		Work Order #: MLNQQ1AA		MB Lot-Sample #: F1H120000-119		
	ND	0.10	mg/L	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Nitrate		Work Order #: MLNQR1AA		MB Lot-Sample #: F1H120000-120		
	ND	0.020	mg/L	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Nitrite		Work Order #: MLNQV1AA		MB Lot-Sample #: F1H120000-121		
	ND	0.020	mg/L	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Phosphate as P, Ortho		Work Order #: MLNQW1AA		MB Lot-Sample #: F1H120000-122		
	ND	0.50	mg/L	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Sulfate		Work Order #: MLNQX1AA		MB Lot-Sample #: F1H120000-123		
	ND	0.50	mg/L	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Total Alkalinity		Work Order #: MLRFM1AA		MB Lot-Sample #: F1H170000-090		
	ND	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLRAM1AA		MB Lot-Sample #: F1H120000-098		
	ND	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRJ01AC Matrix.....: WATER
LCS Lot-Sample#: F1H170000-246
Prep Date.....: 08/16/11 Analysis Date..: 08/16/11
Prep Batch #...: 1229246 Analysis Time..: 23:59
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
cis-1,3-Dichloropropene	118	(70 - 130)	SW846 8260B
Dibromochloromethane	106	(60 - 135)	SW846 8260B
Vinyl chloride	97	(50 - 145)	SW846 8260B
Bromomethane	99	(30 - 145)	SW846 8260B
Chloroethane	89	(60 - 135)	SW846 8260B
Acetone	82	(40 - 140)	SW846 8260B
1,1-Dichloroethene	109	(70 - 130)	SW846 8260B
Methylene chloride	90	(55 - 140)	SW846 8260B
Carbon disulfide	103	(35 - 160)	SW846 8260B
1,1-Dichloroethane	90	(70 - 135)	SW846 8260B
2-Butanone	89	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	103	(85 - 115)	SW846 8260B
Chloroform	112	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	93	(65 - 130)	SW846 8260B
Carbon tetrachloride	93	(65 - 140)	SW846 8260B
1,2-Dichloroethane	113	(70 - 130)	SW846 8260B
Benzene	93	(80 - 120)	SW846 8260B
Trichloroethene	86	(70 - 125)	SW846 8260B
1,2-Dichloropropane	111	(75 - 125)	SW846 8260B
Bromodichloromethane	95	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	105	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	117	(55 - 140)	SW846 8260B
Toluene	116	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	110	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	105	(75 - 125)	SW846 8260B
2-Hexanone	96	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	105	(60 - 135)	SW846 8260B
Chlorobenzene	110	(80 - 120)	SW846 8260B
Bromoform	102	(70 - 130)	SW846 8260B
Ethylbenzene	106	(75 - 125)	SW846 8260B
Styrene	96	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	105	(65 - 130)	SW846 8260B
Tetrachloroethene	108	(45 - 150)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRJ01AC Matrix.....: WATER
LCS Lot-Sample#: F1H170000-246

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichlorobenzene	**107**	**(70 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	105	(85 - 115)
1,2-Dichloroethane-d4	100	(70 - 120)
4-Bromofluorobenzene	106	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRLL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: F1H180000-013 MLRLL1AD-LCSD
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 09:23
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	103	(70 - 130)			SW846 8260B
	104	(70 - 130)	0.58	(0-20)	SW846 8260B
Dibromochloromethane	102	(60 - 135)			SW846 8260B
	102	(60 - 135)	0.88	(0-20)	SW846 8260B
Vinyl chloride	94	(50 - 145)			SW846 8260B
	88	(50 - 145)	5.7	(0-20)	SW846 8260B
Bromomethane	106	(30 - 145)			SW846 8260B
	103	(30 - 145)	2.5	(0-20)	SW846 8260B
Chloroethane	94	(60 - 135)			SW846 8260B
	92	(60 - 135)	2.1	(0-20)	SW846 8260B
Acetone	92	(40 - 140)			SW846 8260B
	98	(40 - 140)	6.2	(0-20)	SW846 8260B
1,1-Dichloroethene	104	(70 - 130)			SW846 8260B
	104	(70 - 130)	0.19	(0-20)	SW846 8260B
Methylene chloride	91	(55 - 140)			SW846 8260B
	95	(55 - 140)	4.8	(0-20)	SW846 8260B
Carbon disulfide	98	(35 - 160)			SW846 8260B
	95	(35 - 160)	3.2	(0-20)	SW846 8260B
1,1-Dichloroethane	96	(70 - 135)			SW846 8260B
	95	(70 - 135)	0.38	(0-20)	SW846 8260B
2-Butanone	89	(30 - 150)			SW846 8260B
	94	(30 - 150)	5.9	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	98	(85 - 115)			SW846 8260B
	98	(85 - 115)	0.15	(0-20)	SW846 8260B
Chloroform	93	(65 - 135)			SW846 8260B
	96	(65 - 135)	3.2	(0-20)	SW846 8260B
1,1,1-Trichloroethane	101	(65 - 130)			SW846 8260B
	104	(65 - 130)	3.1	(0-20)	SW846 8260B
Carbon tetrachloride	103	(65 - 140)			SW846 8260B
	103	(65 - 140)	0.090	(0-20)	SW846 8260B
1,2-Dichloroethane	94	(70 - 130)			SW846 8260B
	97	(70 - 130)	2.9	(0-20)	SW846 8260B
Benzene	99	(80 - 120)			SW846 8260B
	99	(80 - 120)	0.14	(0-20)	SW846 8260B
Trichloroethene	93	(70 - 125)			SW846 8260B
	94	(70 - 125)	1.1	(0-20)	SW846 8260B
1,2-Dichloropropane	95	(75 - 125)			SW846 8260B
	95	(75 - 125)	0.37	(0-20)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLRLL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: F1H180000-013 MLRLL1AD-LCSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	98	(75 - 120)			SW846 8260B
	98	(75 - 120)	0.070	(0-20)	SW846 8260B
1,1,2-Trichloroethane	95	(75 - 125)			SW846 8260B
	100	(75 - 125)	5.0	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	105	(55 - 140)			SW846 8260B
	104	(55 - 140)	1.2	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	106	(75 - 120)	0.28	(0-20)	SW846 8260B
1,3-Dichlorobenzene	101	(75 - 125)			SW846 8260B
	102	(75 - 125)	0.78	(0-20)	SW846 8260B
1,4-Dichlorobenzene	96	(75 - 125)			SW846 8260B
	97	(75 - 125)	0.88	(0-20)	SW846 8260B
2-Hexanone	89	(55 - 130)			SW846 8260B
	88	(55 - 130)	1.3	(0-20)	SW846 8260B
4-Methyl-2-pentanone	96	(60 - 135)			SW846 8260B
	100	(60 - 135)	3.9	(0-20)	SW846 8260B
Chlorobenzene	98	(80 - 120)			SW846 8260B
	98	(80 - 120)	0.37	(0-20)	SW846 8260B
Bromoform	104	(70 - 130)			SW846 8260B
	108	(70 - 130)	3.6	(0-20)	SW846 8260B
Ethylbenzene	105	(75 - 125)			SW846 8260B
	105	(75 - 125)	0.47	(0-20)	SW846 8260B
Styrene	111	(65 - 135)			SW846 8260B
	111	(65 - 135)	0.090	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	92	(65 - 130)			SW846 8260B
	96	(65 - 130)	4.1	(0-20)	SW846 8260B
Tetrachloroethene	105	(45 - 150)			SW846 8260B
	102	(45 - 150)	3.2	(0-20)	SW846 8260B
1,2-Dichlorobenzene	98	(70 - 120)			SW846 8260B
	102	(70 - 120)	3.8	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
	111	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
	107	(85 - 115)
1,2-Dichloroethane-d4	97	(70 - 120)
	102	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)
	101	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090481 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H100000-061 **Prep Batch #...:** 1222061					
Uranium	104	(80 - 120)	SW846 6020A	08/10-08/11/11	MLH641AC
		Dilution Factor: 1		Analysis Time..: 20:41	
LCS Lot-Sample#: F1H100000-063 **Prep Batch #...:** 1222063					
Arsenic	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A2
		Dilution Factor: 1		Analysis Time..: 15:16	
Silver	96	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A3
		Dilution Factor: 1		Analysis Time..: 15:16	
Aluminum	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A4
		Dilution Factor: 1		Analysis Time..: 15:16	
Barium	110	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A5
		Dilution Factor: 1		Analysis Time..: 15:16	
Beryllium	116	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A6
		Dilution Factor: 1		Analysis Time..: 15:16	
Calcium	105	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681A7
		Dilution Factor: 1		Analysis Time..: 11:36	
Cadmium	110	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A8
		Dilution Factor: 1		Analysis Time..: 15:16	
Cobalt	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A9
		Dilution Factor: 1		Analysis Time..: 15:16	
Chromium	107	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CA
		Dilution Factor: 1		Analysis Time..: 15:16	
Copper	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CC
		Dilution Factor: 1		Analysis Time..: 15:16	
Iron	110	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CD
		Dilution Factor: 1		Analysis Time..: 15:16	
Magnesium	103	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CE
		Dilution Factor: 1		Analysis Time..: 09:44	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090481 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	109	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CF
		Dilution Factor: 1	Analysis Time..: 15:16		
Sodium	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CG
		Dilution Factor: 1	Analysis Time..: 09:44		
Nickel	107	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CH
		Dilution Factor: 1	Analysis Time..: 15:16		
Lead	102	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681CJ
		Dilution Factor: 1	Analysis Time..: 17:27		
Antimony	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CK
		Dilution Factor: 1	Analysis Time..: 15:16		
Selenium	104	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681CL
		Dilution Factor: 1	Analysis Time..: 17:27		
Strontium	102	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681CM
		Dilution Factor: 1	Analysis Time..: 11:36		
Thallium	104	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CN
		Dilution Factor: 1	Analysis Time..: 15:16		
Vanadium	107	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CP
		Dilution Factor: 1	Analysis Time..: 15:16		
Zinc	115	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CQ
		Dilution Factor: 1	Analysis Time..: 15:16		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090481 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLNQN1AC	LCS Lot-Sample#: F1H120000-118		
	97	(90 - 110)	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 1	Analysis Time..: 11:52		
Fluoride		Work Order #: MLNQQ1AC	LCS Lot-Sample#: F1H120000-119		
	96	(90 - 110)	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1	Analysis Time..: 11:52		
Nitrate		Work Order #: MLNQR1AC	LCS Lot-Sample#: F1H120000-120		
	96	(90 - 110)	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1	Analysis Time..: 11:52		
Nitrite		Work Order #: MLNQV1AC	LCS Lot-Sample#: F1H120000-121		
	93	(90 - 110)	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 1	Analysis Time..: 11:52		
Phosphate as P, Ortho		Work Order #: MLNQW1AC	LCS Lot-Sample#: F1H120000-122		
	93	(90 - 110)	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1	Analysis Time..: 11:52		
Sulfate		Work Order #: MLNQX1AC	LCS Lot-Sample#: F1H120000-123		
	94	(90 - 110)	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 1	Analysis Time..: 11:52		
Total Alkalinity		Work Order #: MLRFM1AC	LCS Lot-Sample#: F1H170000-090		
	92	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLRFM1AD	LCS Lot-Sample#: F1H170000-090		
	93	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLRAM1AC	LCS Lot-Sample#: F1H120000-098		
	100	(90 - 113)	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLHG01CG-MS Matrix.....: WATER
MS Lot-Sample #: F1H090481-001 MLHG01CH-MSD
Date Sampled...: 08/04/11 09:25 Date Received..: 08/05/11
Prep Date.....: 08/16/11 Analysis Date..: 08/17/11
Prep Batch #...: 1229246 Analysis Time..: 02:01
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	95	(70 - 130)			SW846 8260B
	85	(70 - 130)	10	(0-20)	SW846 8260B
Dibromochloromethane	86	(60 - 135)			SW846 8260B
	78	(60 - 135)	9.5	(0-20)	SW846 8260B
Vinyl chloride	107	(50 - 145)			SW846 8260B
	97	(50 - 145)	6.5	(0-20)	SW846 8260B
Bromomethane	85	(30 - 145)			SW846 8260B
	78	(30 - 145)	8.3	(0-20)	SW846 8260B
Chloroethane	120	(60 - 135)			SW846 8260B
	120	(60 - 135)	0.07	(0-20)	SW846 8260B
Acetone	81	(40 - 140)			SW846 8260B
	86	(40 - 140)	7.0	(0-20)	SW846 8260B
1,1-Dichloroethene	171 a	(70 - 130)			SW846 8260B
	202 a	(70 - 130)	7.9	(0-20)	SW846 8260B
Methylene chloride	75	(55 - 140)			SW846 8260B
	70	(55 - 140)	7.1	(0-20)	SW846 8260B
Carbon disulfide	86	(35 - 160)			SW846 8260B
	83	(35 - 160)	3.8	(0-20)	SW846 8260B
1,1-Dichloroethane	201 a	(70 - 135)			SW846 8260B
	253 a	(70 - 135)	7.0	(0-20)	SW846 8260B
2-Butanone	84	(30 - 150)			SW846 8260B
	78	(30 - 150)	7.5	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	121 a	(85 - 115)			SW846 8260B
	129 a	(85 - 115)	3.0	(0-20)	SW846 8260B
Chloroform	96	(65 - 135)			SW846 8260B
	87	(65 - 135)	10	(0-20)	SW846 8260B
1,1,1-Trichloroethane	259 a	(65 - 130)			SW846 8260B
	337 a	(65 - 130)	11	(0-20)	SW846 8260B
Carbon tetrachloride	76	(65 - 140)			SW846 8260B
	71	(65 - 140)	7.1	(0-20)	SW846 8260B
1,2-Dichloroethane	96	(70 - 130)			SW846 8260B
	91	(70 - 130)	5.3	(0-20)	SW846 8260B
Benzene	75 a	(80 - 120)			SW846 8260B
	68 a	(80 - 120)	9.6	(0-20)	SW846 8260B
Trichloroethene	162 a	(70 - 125)			SW846 8260B
	186 a	(70 - 125)	7.0	(0-20)	SW846 8260B
1,2-Dichloropropane	93	(75 - 125)			SW846 8260B
	86	(75 - 125)	7.8	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 Work Order #...: MLHG01CG-MS Matrix.....: WATER
MS Lot-Sample #: F1H090481-001 MLHG01CH-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	81	(75 - 120)			SW846 8260B
	74 a	(75 - 120)	9.4	(0-20)	SW846 8260B
1,1,2-Trichloroethane	89	(75 - 125)			SW846 8260B
	80	(75 - 125)	11	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	93	(55 - 140)			SW846 8260B
	85	(55 - 140)	8.5	(0-20)	SW846 8260B
Toluene	94	(75 - 120)			SW846 8260B
	87	(75 - 120)	8.3	(0-20)	SW846 8260B
1,3-Dichlorobenzene	91	(75 - 125)			SW846 8260B
	85	(75 - 125)	7.0	(0-20)	SW846 8260B
1,4-Dichlorobenzene	88	(75 - 125)			SW846 8260B
	80	(75 - 125)	9.9	(0-20)	SW846 8260B
2-Hexanone	86	(55 - 130)			SW846 8260B
	72	(55 - 130)	17	(0-20)	SW846 8260B
4-Methyl-2-pentanone	93	(60 - 135)			SW846 8260B
	82	(60 - 135)	13	(0-20)	SW846 8260B
Chlorobenzene	92	(80 - 120)			SW846 8260B
	83	(80 - 120)	11	(0-20)	SW846 8260B
Bromoform	82	(70 - 130)			SW846 8260B
	75	(70 - 130)	8.9	(0-20)	SW846 8260B
Ethylbenzene	87	(75 - 125)			SW846 8260B
	79	(75 - 125)	9.6	(0-20)	SW846 8260B
Styrene	80	(65 - 135)			SW846 8260B
	73	(65 - 135)	9.5	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	86	(65 - 130)			SW846 8260B
	80	(65 - 130)	7.6	(0-20)	SW846 8260B
Tetrachloroethene	87	(45 - 150)			SW846 8260B
	80	(45 - 150)	9.0	(0-20)	SW846 8260B
1,2-Dichlorobenzene	90	(70 - 120)			SW846 8260B
	81	(70 - 120)	11	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
	109	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
	106	(85 - 115)
1,2-Dichloroethane-d4	105	(70 - 120)
	105	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)
	103	(75 - 120)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090481 **Work Order #...:** MLHG01CG-MS **Matrix.....:** WATER
MS Lot-Sample #: F1H090481-001 MLHG01CH-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090481 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H090496-002 **Prep Batch #...:** 1222061							
Uranium	105	(80 - 120)			SW846 6020A	08/10-08/11/11	MLHLC1DG
	108	(80 - 120)	2.6	(0-20)	SW846 6020A	08/10-08/11/11	MLHLC1DH
		Dilution Factor: 1					
		Analysis Time..: 22:14					
MS Lot-Sample #: F1H090496-002 **Prep Batch #...:** 1222063							
Aluminum	104	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DW
	105	(80 - 120)	1.0	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DX
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Antimony	105	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1C3
	105	(80 - 120)	0.51	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1C4
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Arsenic	104	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DR
	105	(80 - 120)	0.50	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DT
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Barium	107	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1D0
	108	(80 - 120)	0.87	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1D1
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Beryllium	111	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1D2
	111	(80 - 120)	0.61	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1D3
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Cadmium	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1D6
	102	(80 - 120)	0.81	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1D7
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Calcium	117	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1D4
	100	(80 - 120)	2.1	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1D5
		Dilution Factor: 5					
		Analysis Time..: 13:04					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090481 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CJ
	101	(80 - 120)	0.85	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CK
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Cobalt	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CG
	99	(80 - 120)	0.69	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CH
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Copper	101	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CL
	102	(80 - 120)	0.89	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CM
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Iron	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CN
	104	(80 - 120)	0.78	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CP
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Lead	99	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1C1
	100	(80 - 120)	0.47	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1C2
		Dilution Factor: 1					
		Analysis Time..: 18:58					
Magnesium	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CQ
	99	(80 - 120)	0.25	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CR
		Dilution Factor: 1					
		Analysis Time..: 11:12					
Manganese	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CT
	103	(80 - 120)	0.71	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CU
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Nickel	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CX
	99	(80 - 120)	0.95	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1C0
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Selenium	103	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1C5
	105	(80 - 120)	1.2	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1C6
		Dilution Factor: 1					
		Analysis Time..: 18:58					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090481 Matrix.....: WATER
Date Sampled...: 08/05/11 09:30 Date Received..: 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	93	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DU
	94	(80 - 120)	1.2	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DV
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Sodium	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CV
	102	(80 - 120)	0.41	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CW
		Dilution Factor: 1					
		Analysis Time..: 11:12					
Strontium	105	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1C7
	103	(80 - 120)	1.3	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1C8
		Dilution Factor: 5					
		Analysis Time..: 13:04					
Thallium	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1C9
	99	(80 - 120)	0.97	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DA
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Vanadium	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DC
	103	(80 - 120)	0.76	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DD
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Zinc	108	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DE
	110	(80 - 120)	1.4	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DF
		Dilution Factor: 1					
		Analysis Time..: 16:46					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090481 **Matrix.....:** WATER
Date Sampled...: 08/04/11 10:40 **Date Received..:** 08/05/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLHH01CG		MS Lot-Sample #: F1H090481-002	
	105	(90 - 110)	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 10	Analysis Time..: 12:35		
Fluoride		Work Order #...: MLHH01CJ		MS Lot-Sample #: F1H090481-002	
	99	(90 - 110)	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1	Analysis Time..: 12:21		
Nitrate		Work Order #...: MLHH01CL		MS Lot-Sample #: F1H090481-002	
	100	(90 - 110)	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1	Analysis Time..: 12:21		
Nitrite		Work Order #...: MLHH01CN		MS Lot-Sample #: F1H090481-002	
	72 N	(90 - 110)	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 1	Analysis Time..: 12:21		
Phosphate as P, Ortho		Work Order #...: MLHH01CQ		MS Lot-Sample #: F1H090481-002	
	63 N	(90 - 110)	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1	Analysis Time..: 12:21		
Sulfate		Work Order #...: MLHH01CT		MS Lot-Sample #: F1H090481-002	
	96	(90 - 110)	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 10	Analysis Time..: 12:35		
Total Alkalinity		Work Order #...: MLHLC1EA		MS Lot-Sample #: F1H090496-002	
	98	(80 - 120)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090481 **Work Order #...:** MLHLC-SMP MLHLC-DUP **Matrix.....:** WATER

Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H090496-002		
	387	383	mg/L	1.0	(0-15)	MCAWW 160.1	08/11-08/12/11	1224098
			Dilution Factor: 1			Analysis Time..: 00:00		
Total Alkalinity						SD Lot-Sample #: F1H090496-002		
	252	252	mg/L	0.0	(0-20)	MCAWW 310.1	08/17/11	1229090
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090481 **Work Order #...:** MLHH0-SMP MLHH0-DUP **Matrix.....:** WATER

Date Sampled...: 08/04/11 10:40 **Date Received..:** 08/05/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H090481-002		
	23.1	23.4	mg/L	1.3	(0-20)	MCAWW 300.0A	08/05/11	1224118
		Dilution Factor: 10				Analysis Time..: 12:35		
Fluoride						SD Lot-Sample #: F1H090481-002		
	0.92	0.99	mg/L	6.7	(0-20)	MCAWW 300.0A	08/05/11	1224119
		Dilution Factor: 1				Analysis Time..: 12:21		
Nitrate						SD Lot-Sample #: F1H090481-002		
	0.082	0.077	mg/L	6.3	(0-20)	MCAWW 300.0A	08/05/11	1224120
		Dilution Factor: 1				Analysis Time..: 12:21		
Nitrite						SD Lot-Sample #: F1H090481-002		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/05/11	1224121
		Dilution Factor: 1				Analysis Time..: 12:21		
Phosphate as P, Ortho						SD Lot-Sample #: F1H090481-002		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/05/11	1224122
		Dilution Factor: 1				Analysis Time..: 12:21		
Sulfate						SD Lot-Sample #: F1H090481-002		
	52.4	52.7	mg/L	0.70	(0-20)	MCAWW 300.0A	08/05/11	1224123
		Dilution Factor: 10				Analysis Time..: 12:35		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001

Radiochemistry

Lab Sample ID: F1H090481-001
Work Order: MLHG0
Matrix: WATER

Date Collected: 08/04/11 0925
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 67
Uranium 234	13.1		1.3	0.1	0.05	08/16/11	08/17/11
Uranium 235/236	0.43		0.15	0.10	0.03	08/16/11	08/17/11
Uranium 238	12.6		1.3	0.1	0.03	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001

Radiochemistry

Lab Sample ID: F1H090481-002
Work Order: MLNH0
Matrix: WATER

Date Collected: 08/04/11 1040
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 81
Uranium 234	1.79		0.29	0.10	0.06	08/16/11	08/17/11
Uranium 235/236	0.114		0.073	0.100	0.066	08/16/11	08/17/11
Uranium 238	1.73		0.28	0.10	0.07	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001

Radiochemistry

Lab Sample ID: F1H090481-003
Work Order: MLHH1
Matrix: WATER

Date Collected: 08/04/11 1200
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 80
Uranium 234	2.62		0.37	0.10	0.05	08/16/11	08/17/11
Uranium 235/236	0.061		0.053	0.100	0.048	08/16/11	08/17/11
Uranium 238	1.26		0.23	0.10	0.05	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW190001

Radiochemistry

Lab Sample ID: F1H090481-004
Work Order: MLHH2
Matrix: WATER

Date Collected: 08/04/11 1330
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 74
Uranium 234	4.52		0.56	0.10	0.07	08/16/11	08/17/11
Uranium 235/236	0.27		0.12	0.10	0.03	08/16/11	08/17/11
Uranium 238	4.77		0.59	0.10	0.04	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW240001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090481-005
Work Order: MLHH8
Matrix: WATER

Date Collected: 08/04/11 0925
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 72
Uranium 234	12.5		1.3	0.1	0.03	08/16/11	08/17/11
Uranium 235/236	0.51		0.16	0.10	0.03	08/16/11	08/17/11
Uranium 238	11.6		1.2	0.1	0.04	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW230001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090481-006
Work Order: MLHJ6
Matrix: WATER

Date Collected: 08/04/11 1040
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 76
Uranium 234	1.74		0.29	0.10	0.04	08/16/11	08/17/11
Uranium 235/236	0.136		0.079	0.100	0.031	08/16/11	08/17/11
Uranium 238	1.64		0.28	0.10	0.02	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090481-007
Work Order: MLHJ7
Matrix: WATER

Date Collected: 08/04/11 1200
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 77
Uranium 234	2.67		0.38	0.10	0.02	08/16/11	08/17/11
Uranium 235/236	0.076		0.058	0.100	0.029	08/16/11	08/17/11
Uranium 238	1.40		0.25	0.10	0.02	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW190001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090481-008
Work Order: MLHKE
Matrix: WATER

Date Collected: 08/04/11 1330
Date Received: 08/05/11 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 73
Uranium 234	4.34		0.55	0.10	0.05	08/16/11	08/18/11
Uranium 235/236	0.192		0.097	0.100	0.033	08/16/11	08/18/11
Uranium 238	4.27		0.54	0.10	0.03	08/16/11	08/18/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H090481
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1228169		Yld % 93	F1H160000-169B
Uranium 234	0.013	U	0.022	0.100	0.035	08/16/11	08/17/11
Uranium 235/236	-0.0024	U	0.0047	0.100	0.043	08/16/11	08/17/11
Uranium 238	-0.0038	U	0.0054	0.100	0.040	08/16/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H090481
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/L		A-01-R MOD			F1H160000-169C
Uranium 234	3.27	3.26	0.42	0.04	85	100	(76 - 136)
Uranium 238	3.39	3.37	0.43	0.04	85	99	(76 - 134)
	Batch #:	1228169		Analysis Date:	08/17/11		

NOTE(S):

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1H090481
Matrix: WATER

Date Sampled: 08/05/11
Date Received: 08/06/11

Parameter	SAMPLE Result	Total Uncert. (2σ+/-)	% Yld	DUPLICATE Result	Total Uncert. (2 σ+/-)	% Yld	QC Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H090496-002**	
Uranium 234	24.3	2.3	54	24.3	2.3	59	0.2	%RPD
Uranium 235/236	1.03	0.27	54	1.27	0.29	59	21	%RPD
Uranium 238	24.8	2.4	54	23.2	2.2	59	7	%RPD
	Batch #:	1228169 (Sample)		1228169 (Duplicate)				

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

TestAmerica St. Louis

F1H090481

CLIENT ANALYSIS SUMMARY

Storage Loc: 2-9,R248/249,ME

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 8

Date Received: 2011-08-05

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A04DMW240001	140415		2011-08-04 / 925	MLHG0	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H090481

CLIENT ANALYSIS SUMMARY

Storage Loc: 2-9,R248/249,ME

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 8

Date Received: 2011-08-05

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

D	XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
S	XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A04AMW230001	140415		2011-08-04 / 1040	MLHH0	WATER

SAMPLE COMMENTS:

NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

F1H090481

CLIENT ANALYSIS SUMMARY

Storage Loc: 2-9,R248/249,ME

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-05

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

#SMPS in LOT: 8 | EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

	XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
	XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
	XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
S	XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
S	XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
S	XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
S	XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
S	XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
S	XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
X	XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
X	XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
X	XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
X	XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
X	XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
X	XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A04DMW713D0001	140415		2011-08-04 / 1200	MLHH1	WATER

SAMPLE COMMENTS:

	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H090481

CLIENT ANALYSIS SUMMARY

Storage Loc: 2-9,R248/249,ME

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 8

Date Received: 2011-08-05

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	A04BMW190001	140415		2011-08-04 / 1330	MLHH2	WATER

SAMPLE COMMENTS:

CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H090481

CLIENT ANALYSIS SUMMARY

Storage Loc: 2-9,R248/249,ME

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 8

Date Received: 2011-08-05

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium listead of 200.8

CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	A04DMW240001 DISSOLVED	140415		2011-08-04 / 925	MLHH8	WATER

SAMPLE COMMENTS:

TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	A04AMW230001 DISSOLVED	140415		2011-08-04 / 1040	MLHJ6	WATER

SAMPLE COMMENTS:

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	A04DMW713D0001 DISSOLVED	140415		2011-08-04 / 1200	MLHJ7	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H090481

CLIENT ANALYSIS SUMMARY

Storage Loc: R248/249,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 8

Date Received: 2011-08-05

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	A04BMW190001 DISSOLVED	140415		2011-08-04 / 1330	MLHKE	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

TestAmerica St. Louis

F1H090481

CLIENT ANALYSIS SUMMARY

Storage Loc: R248/249,METS

Project Manager: LMF Quote #: 89251 SDG:

Project: 140415 Guteryl Steel

PO#: 697886 Report to: Karl VanKeuren

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 8

Date Received: 2011-08-05

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
phone 314.298.8566 fax 314.298.8757

Chain of Custody Record

TestAmerica THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/04/2011	COC No: 002
Shaw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
5050 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
Cincinnati, Ohio 45212	Calendar (C) or Work Days (W)			
(513) 782-4700 Phone	TAT if different from Below			SDG No.
(513) 782-4807 FAX	[X] 2 weeks STD			
Project Name: Former Guterl Specialty Steel Corporation FUSRA	[ ] 1 week			
Site: Lockport, NY	[ ] 2 days			
PO#	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (a-spec)	Isotopic Uranium (a-spec)	Total Uranium	TAL Metals except Mercury	Anions SO4 P	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
A04DMW240001 Total: 250P, 2XLP, 3X40 Diss: 250P 2XLP	8/4/2011	0925	Grab	GW	10	X		X	X	X	X	X	X	X					
A04AMW230001	8/4/2011	1040	Grab	GW	10	X		X	X	X	X	X	X	X	3X40				
A04DMW713D0001	8/4/2011	1200	Grab	GW	10	X		X	X	X	X	X	X	X	VOC				
A04BMW190001 250P, 2XLP	8/4/2011	1330	Grab	GW	7	X		X	X	X	X	X	X	X					No VOC ANALYSIS

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [X] Disposal By Lab [ ] Archive For _____ Months

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Kevin Cronin	Shaw E & I. Inc.	8/4/11 1630		BFLO	08-04-11 16:30
	BFLO	08-04-11 17:46		TAL	8/4/11 1740
	TAL	8/4/11 1751		TASL	8.5.11 0950

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F1H090481 TestAmerica St. Louis

CUR Form #: 0 5 2

CONDITION UPON RECEIPT FORM

Client: TA Buffalo - Shaw

Quote No: 89251

COC/RFA No: 002

Initiated By: SW Date: 8.5.11 Time: 0900

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*				Sample Temperature (s):**			
1.	4485 0258 2587	6.		1.	3	6.	
2.	2598	7.		2.	2	7.	
3.		8.		3.		8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Received bottles for Filtered metals, Iso4, & Total U - not on COC - log per LF AB 8-9-11

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/11/2011

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guteryl Steel

Lot #: F1H090496

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 24, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H090496

This report contains the analytical results for the six samples received under chain of custody by TestAmerica in St. Louis on August 6, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1222063
The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

Affected Samples:
F1H090496 (1): A04AMW603D0001
F1H090496 (2): A04AMW220001
F1H090496 (3): A04BMW180001
F1H090496 (4): A04AMW603D0001 DISSOLVED

Batch: 1222064
The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

The MSD recovery for Calcium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

Strontium was observed in the CCB above 3X the MDL. Associated samples which are either non-detect for the contaminant or exhibit concentrations greater than ten (10) times the concentrations observed in the CCB and does not require re-analysis.

Affected Samples:
F1H090496 (5): A04AMW22001 DISSOLVED
F1H090496 (6): A04BMW180001 DISSOLVED

Chloride (MCAWW 300.0A)

Batch: 1224124
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090496 (1): A04AMW603D0001
F1H090496 (2): A04AMW220001
F1H090496 (3): A04BMW180001

Sulfate (MCAWW 300.0A)

Batch: 1224129
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090496 (1): A04AMW603D0001
F1H090496 (2): A04AMW220001
F1H090496 (3): A04BMW180001

Fluoride (MCAWW 300.0A)

Batch: 1224125
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090496 (3): A04BMW180001

Nitrite as N (MCAWW 300.0A)

Batch: 1224127
The following samples were reported ND at dilution for Nitrite, due to interference with Chloride in the undiluted runs. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H090496 (1): A04AMW603D0001
F1H090496 (2): A04AMW220001
F1H090496 (3): A04BMW180001

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1224128
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H090496 (1): A04AMW603D0001
F1H090496 (2): A04AMW220001
F1H090496 (3): A04BMW180001

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H090496

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H090496

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLHLA	001	A04AMW603D0001	08/05/11	08:40
MLHLC	002	A04AMW220001	08/05/11	09:30
MLHLD	003	A04BMW180001	08/05/11	12:45
MLHLP	004	A04AMW603D0001 DISSOLVED	08/05/11	08:40
MLHLR	005	A04AMW22001 DISSOLVED	08/05/11	09:30
MLHL1	006	A04BMW180001 DISSOLVED	08/05/11	12:45

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001

GC/MS Volatiles

Lot-Sample #...: F1H090496-001 Work Order #...: MLHLA1AC Matrix.....: WATER
Date Sampled...: 08/05/11 08:40 Date Received..: 08/06/11
Prep Date.....: 08/11/11 Analysis Date..: 08/13/11
Prep Batch #...: 1224172 Analysis Time..: 00:12
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**0.95 J**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	**0.18 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.34 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**0.82 J,B**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001

GC/MS Volatiles

Lot-Sample #...: F1H090496-001 Work Order #...: MLHLA1AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	110	(85 - 115)
1,2-Dichloroethane-d4	109	(70 - 120)
4-Bromofluorobenzene	110	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001

TOTAL Metals

Lot-Sample #...: F1H090496-001 Matrix.....: WATER
Date Sampled...: 08/05/11 08:40 Date Received..: 08/06/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	11.1	1.0	ug/L	SW846 6020A	08/10-08/11/11	MLHLA1A5
		Dilution Factor: 1		Analysis Time..: 21:54		
Prep Batch #...: 1222063						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AF
		Dilution Factor: 1		Analysis Time..: 16:33		
Aluminum	200	200	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AG
		Dilution Factor: 1		Analysis Time..: 16:33		
Arsenic	12.9	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AE
		Dilution Factor: 1		Analysis Time..: 16:33		
Barium	73.6	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AH
		Dilution Factor: 1		Analysis Time..: 16:33		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AJ
		Dilution Factor: 1		Analysis Time..: 16:33		
Calcium	125000	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHLA1AK
		Dilution Factor: 5		Analysis Time..: 12:51		
Cadmium	3.8 J	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AL
		Dilution Factor: 1		Analysis Time..: 16:33		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AM
		Dilution Factor: 1		Analysis Time..: 16:33		
Chromium	11.3	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AN
		Dilution Factor: 1		Analysis Time..: 16:33		
Copper	5.2 J	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AP
		Dilution Factor: 1		Analysis Time..: 16:33		
Iron	50700	100	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AQ
		Dilution Factor: 1		Analysis Time..: 16:33		
Magnesium	47900	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AR
		Dilution Factor: 1		Analysis Time..: 10:59		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001

TOTAL Metals

Lot-Sample #...: F1H090496-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**207**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLA1AT**
		Dilution Factor: 1		Analysis Time..: 16:33		
Sodium	**30600**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLA1AU**
		Dilution Factor: 1		Analysis Time..: 10:59		
Nickel	**108**	**40.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLA1AV**
		Dilution Factor: 1		Analysis Time..: 16:33		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLA1AW
		Dilution Factor: 1		Analysis Time..: 18:45		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1AX
		Dilution Factor: 1		Analysis Time..: 16:33		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLA1A0
		Dilution Factor: 1		Analysis Time..: 18:45		
Strontium	**478**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLA1A1**
		Dilution Factor: 5		Analysis Time..: 12:51		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLA1A2
		Dilution Factor: 1		Analysis Time..: 16:33		
Vanadium	**9.8 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLA1A3**
		Dilution Factor: 1		Analysis Time..: 16:33		
Zinc	**996**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLA1A4**
		Dilution Factor: 1		Analysis Time..: 16:33		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001

General Chemistry

Lot-Sample #...: F1H090496-001 Work Order #...: MLHLA Matrix.....: WATER
Date Sampled...: 08/05/11 08:40 Date Received..: 08/06/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	53.8	20.0	mg/L	MCAWW 300.0A	08/06/11	1224124
		Dilution Factor: 100		Analysis Time..: 08:05		
Fluoride	1.9	0.10	mg/L	MCAWW 300.0A	08/06/11	1224125
		Dilution Factor: 1		Analysis Time..: 07:36		
Nitrate	0.097	0.020	mg/L	MCAWW 300.0A	08/06/11	1224126
		Dilution Factor: 1		Analysis Time..: 07:36		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/06/11	1224127
		Dilution Factor: 5		Analysis Time..: 09:46		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/06/11	1224128
		Dilution Factor: 1		Analysis Time..: 07:36		
Sulfate	125	5.0	mg/L	MCAWW 300.0A	08/06/11	1224129
		Dilution Factor: 10		Analysis Time..: 07:50		
Total Alkalinity	350	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	692	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW220001

GC/MS Volatiles

Lot-Sample #...: F1H090496-002 Work Order #...: MLHLC1AN Matrix.....: WATER
Date Sampled...: 08/05/11 09:30 Date Received..: 08/06/11
Prep Date.....: 08/11/11 Analysis Date..: 08/12/11
Prep Batch #...: 1224172 Analysis Time..: 15:50
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**1.0 J**	**2.0**	**ug/L**
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**17**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**5.0**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**1.4 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.51 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**3.0 B**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**29**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**2.2**	**1.0**	**ug/L**
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW220001

GC/MS Volatiles

Lot-Sample #...: F1H090496-002 Work Order #...: MLHLC1AN Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	113	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
4-Bromofluorobenzene	111	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW220001

TOTAL Metals

Lot-Sample #...: F1H090496-002 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	**73.6**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHLC1AG**
		Dilution Factor: 1		Analysis Time..: 22:01		
Prep Batch #...: 1222063						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1AR
		Dilution Factor: 1		Analysis Time..: 16:40		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1AT
		Dilution Factor: 1		Analysis Time..: 16:40		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1AQ
		Dilution Factor: 1		Analysis Time..: 16:40		
Barium	**26.2 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLC1AU**
		Dilution Factor: 1		Analysis Time..: 16:40		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1AV
		Dilution Factor: 1		Analysis Time..: 16:40		
Calcium	**69700**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLC1AW**
		Dilution Factor: 5		Analysis Time..: 12:58		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1AX
		Dilution Factor: 1		Analysis Time..: 16:40		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1A0
		Dilution Factor: 1		Analysis Time..: 16:40		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1A1
		Dilution Factor: 1		Analysis Time..: 16:40		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1A2
		Dilution Factor: 1		Analysis Time..: 16:40		
Iron	**556**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLC1A3**
		Dilution Factor: 1		Analysis Time..: 16:40		
Magnesium	**24800**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLC1A4**
		Dilution Factor: 1		Analysis Time..: 11:06		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW220001

TOTAL Metals

Lot-Sample #...: F1H090496-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**90.9**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLC1A5**
		Dilution Factor: 1		Analysis Time..: 16:40		
Sodium	**39900**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLC1A6**
		Dilution Factor: 1		Analysis Time..: 11:06		
Nickel	**190**	**40.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLC1A7**
		Dilution Factor: 1		Analysis Time..: 16:40		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLC1A8
		Dilution Factor: 1		Analysis Time..: 18:51		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1A9
		Dilution Factor: 1		Analysis Time..: 16:40		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLC1AA
		Dilution Factor: 1		Analysis Time..: 18:51		
Strontium	**350**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLC1AC**
		Dilution Factor: 5		Analysis Time..: 12:58		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1AD
		Dilution Factor: 1		Analysis Time..: 16:40		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLC1AE
		Dilution Factor: 1		Analysis Time..: 16:40		
Zinc	**10.7 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLC1AF**
		Dilution Factor: 1		Analysis Time..: 16:40		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW220001

General Chemistry

Lot-Sample #...: F1H090496-002 Work Order #...: MLHLC Matrix.....: WATER
Date Sampled...: 08/05/11 09:30 Date Received..: 08/06/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	34.4	2.0	mg/L	MCAWW 300.0A	08/06/11	1224124
		Dilution Factor: 10		Analysis Time..: 02:33		
Fluoride	1.5	0.10	mg/L	MCAWW 300.0A	08/06/11	1224125
		Dilution Factor: 1		Analysis Time..: 02:19		
Nitrate	0.099	0.020	mg/L	MCAWW 300.0A	08/06/11	1224126
		Dilution Factor: 1		Analysis Time..: 02:19		
Nitrite	ND	0.020	mg/L	MCAWW 300.0A	08/06/11	1224127
		Dilution Factor: 1		Analysis Time..: 02:19		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/06/11	1224128
		Dilution Factor: 1		Analysis Time..: 02:19		
Sulfate	40.7	5.0	mg/L	MCAWW 300.0A	08/06/11	1224129
		Dilution Factor: 10		Analysis Time..: 02:33		
Total Alkalinity	252	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	387	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW180001

TOTAL Metals

Lot-Sample #...: F1H090496-003 Matrix.....: WATER
Date Sampled...: 08/05/11 12:45 Date Received..: 08/06/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	**123**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHLD1AG**
		Dilution Factor: 1		Analysis Time..: 22:28		
Prep Batch #...: 1222063						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1AR
		Dilution Factor: 1		Analysis Time..: 17:05		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1AT
		Dilution Factor: 1		Analysis Time..: 17:05		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1AQ
		Dilution Factor: 1		Analysis Time..: 17:05		
Barium	**68.3**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLD1AU**
		Dilution Factor: 1		Analysis Time..: 17:05		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1AV
		Dilution Factor: 1		Analysis Time..: 17:05		
Calcium	**64200**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLD1AW**
		Dilution Factor: 5		Analysis Time..: 13:23		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1AX
		Dilution Factor: 1		Analysis Time..: 17:05		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1A0
		Dilution Factor: 1		Analysis Time..: 17:05		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1A1
		Dilution Factor: 1		Analysis Time..: 17:05		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1A2
		Dilution Factor: 1		Analysis Time..: 17:05		
Iron	**37.4 J**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLD1A3**
		Dilution Factor: 1		Analysis Time..: 17:05		
Magnesium	**37200**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLD1A4**
		Dilution Factor: 1		Analysis Time..: 11:31		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW180001

TOTAL Metals

Lot-Sample #...: F1H090496-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**396**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLD1A5**
		Dilution Factor: 1		Analysis Time..: 17:05		
Sodium	**122000**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLD1A6**
		Dilution Factor: 5		Analysis Time..: 13:23		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1A7
		Dilution Factor: 1		Analysis Time..: 17:05		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLD1A8
		Dilution Factor: 1		Analysis Time..: 19:17		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1A9
		Dilution Factor: 1		Analysis Time..: 17:05		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLD1AA
		Dilution Factor: 1		Analysis Time..: 19:17		
Strontium	**187**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLD1AC**
		Dilution Factor: 5		Analysis Time..: 13:23		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1AD
		Dilution Factor: 1		Analysis Time..: 17:05		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLD1AE
		Dilution Factor: 1		Analysis Time..: 17:05		
Zinc	**177**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLD1AF**
		Dilution Factor: 1		Analysis Time..: 17:05		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW180001

General Chemistry

Lot-Sample #...: F1H090496-003 Work Order #...: MLHLD Matrix.....: WATER
Date Sampled...: 08/05/11 12:45 Date Received..: 08/06/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	89.9	20.0	mg/L	MCAWW 300.0A	08/06/11	1224124
		Dilution Factor: 100		Analysis Time..: 06:53		
Fluoride	2.6	1.0	mg/L	MCAWW 300.0A	08/06/11	1224125
		Dilution Factor: 10		Analysis Time..: 06:38		
Nitrate	0.0076 B	0.020	mg/L	MCAWW 300.0A	08/06/11	1224126
		Dilution Factor: 1		Analysis Time..: 06:24		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/06/11	1224127
		Dilution Factor: 5		Analysis Time..: 09:31		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/06/11	1224128
		Dilution Factor: 1		Analysis Time..: 06:24		
Sulfate	47.8	5.0	mg/L	MCAWW 300.0A	08/06/11	1224129
		Dilution Factor: 10		Analysis Time..: 06:38		
Total Alkalinity	381	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	619	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090496-004 Matrix.....: WATER
Date Sampled...: 08/05/11 08:40 Date Received..: 08/06/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222061						
Uranium	8.2	1.0	ug/L	SW846 6020A	08/10-08/11/11	MLHLP1A2
		Dilution Factor: 1		Analysis Time..: 22:34		
Prep Batch #...: 1222063						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AC
		Dilution Factor: 1		Analysis Time..: 17:12		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AD
		Dilution Factor: 1		Analysis Time..: 17:12		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AA
		Dilution Factor: 1		Analysis Time..: 17:12		
Barium	30.7 J	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AE
		Dilution Factor: 1		Analysis Time..: 17:12		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AF
		Dilution Factor: 1		Analysis Time..: 17:12		
Calcium	129000	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHLP1AG
		Dilution Factor: 5		Analysis Time..: 13:29		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AH
		Dilution Factor: 1		Analysis Time..: 17:12		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AJ
		Dilution Factor: 1		Analysis Time..: 17:12		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AK
		Dilution Factor: 1		Analysis Time..: 17:12		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AL
		Dilution Factor: 1		Analysis Time..: 17:12		
Iron	932	100	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AM
		Dilution Factor: 1		Analysis Time..: 17:12		
Magnesium	46500	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AN
		Dilution Factor: 1		Analysis Time..: 11:37		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090496-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	125	15.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AP
		Dilution Factor: 1		Analysis Time..: 17:12		
Sodium	30900	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AQ
		Dilution Factor: 1		Analysis Time..: 11:37		
Nickel	70.8	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AR
		Dilution Factor: 1		Analysis Time..: 17:12		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLP1AT
		Dilution Factor: 1		Analysis Time..: 19:23		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AU
		Dilution Factor: 1		Analysis Time..: 17:12		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLP1AV
		Dilution Factor: 1		Analysis Time..: 19:23		
Strontium	478	25.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLP1AW
		Dilution Factor: 5		Analysis Time..: 13:29		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1AX
		Dilution Factor: 1		Analysis Time..: 17:12		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1A0
		Dilution Factor: 1		Analysis Time..: 17:12		
Zinc	134	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLP1A1
		Dilution Factor: 1		Analysis Time..: 17:12		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW22001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090496-005 Matrix.....: WATER
Date Sampled...: 08/05/11 09:30 Date Received..: 08/06/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	**65.1**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHLR1AD**
		Dilution Factor: 1		Analysis Time..: 22:54		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AG
		Dilution Factor: 1		Analysis Time..: 17:44		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AH
		Dilution Factor: 1		Analysis Time..: 17:44		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AF
		Dilution Factor: 1		Analysis Time..: 17:44		
Barium	**36.4 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLR1AJ**
		Dilution Factor: 1		Analysis Time..: 17:44		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AK
		Dilution Factor: 1		Analysis Time..: 17:44		
Calcium	**74200**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLR1AL**
		Dilution Factor: 5		Analysis Time..: 14:00		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AM
		Dilution Factor: 1		Analysis Time..: 17:44		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AN
		Dilution Factor: 1		Analysis Time..: 17:44		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AP
		Dilution Factor: 1		Analysis Time..: 17:44		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AQ
		Dilution Factor: 1		Analysis Time..: 17:44		
Iron	**962**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLR1AR**
		Dilution Factor: 1		Analysis Time..: 17:44		
Magnesium	**24800**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLR1AT**
		Dilution Factor: 1		Analysis Time..: 12:09		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW22001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090496-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	117	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLR1AU**
		Dilution Factor: 1		Analysis Time..: 17:44		
Sodium	**36000 B**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLR1AV**
		Dilution Factor: 1		Analysis Time..: 12:09		
Nickel	132	**40.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHLR1AW**
		Dilution Factor: 1		Analysis Time..: 17:44		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLR1AX
		Dilution Factor: 1		Analysis Time..: 19:55		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1A0
		Dilution Factor: 1		Analysis Time..: 17:44		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHLR1A1
		Dilution Factor: 1		Analysis Time..: 19:55		
Strontium	384	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHLR1A2**
		Dilution Factor: 5		Analysis Time..: 14:00		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1A3
		Dilution Factor: 1		Analysis Time..: 17:44		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AA
		Dilution Factor: 1		Analysis Time..: 17:44		
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHLR1AC
		Dilution Factor: 1		Analysis Time..: 17:44		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW180001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090496-006 **Matrix.....:** WATER
Date Sampled...: 08/05/11 12:45 **Date Received..:** 08/06/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	**125**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHL11AD**
		Dilution Factor: 1		Analysis Time..: 23:34		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AG
		Dilution Factor: 1		Analysis Time..: 18:10		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AH
		Dilution Factor: 1		Analysis Time..: 18:10		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AF
		Dilution Factor: 1		Analysis Time..: 18:10		
Barium	**67.6**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHL11AJ**
		Dilution Factor: 1		Analysis Time..: 18:10		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AK
		Dilution Factor: 1		Analysis Time..: 18:10		
Calcium	**63800**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHL11AL**
		Dilution Factor: 5		Analysis Time..: 14:26		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AM
		Dilution Factor: 1		Analysis Time..: 18:10		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AN
		Dilution Factor: 1		Analysis Time..: 18:10		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AP
		Dilution Factor: 1		Analysis Time..: 18:10		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AQ
		Dilution Factor: 1		Analysis Time..: 18:10		
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AR
		Dilution Factor: 1		Analysis Time..: 18:10		
Magnesium	**37400**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHL11AT**
		Dilution Factor: 1		Analysis Time..: 12:34		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW180001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090496-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**393**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHL11AU**
		Dilution Factor: 1		Analysis Time..: 18:10		
Sodium	**124000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHL11AV**
		Dilution Factor: 5		Analysis Time..: 14:26		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AW
		Dilution Factor: 1		Analysis Time..: 18:10		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHL11AX
		Dilution Factor: 1		Analysis Time..: 20:21		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11A0
		Dilution Factor: 1		Analysis Time..: 18:10		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHL11A1
		Dilution Factor: 1		Analysis Time..: 20:21		
Strontium	**193**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHL11A2**
		Dilution Factor: 5		Analysis Time..: 14:26		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11A3
		Dilution Factor: 1		Analysis Time..: 18:10		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHL11AA
		Dilution Factor: 1		Analysis Time..: 18:10		
Zinc	**180**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHL11AC**
		Dilution Factor: 1		Analysis Time..: 18:10		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090496 **Work Order #...:** MLL8H1AA **Matrix.....:** WATER
MB Lot-Sample #: F1H120000-172

Prep Date.....: 08/11/11 **Analysis Time..:** 15:24
Analysis Date..: 08/12/11 **Prep Batch #...:** 1224172
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	**0.54 J**	**1.0**	**ug/L**	**SW846 8260B**
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	**0.33 J**	**1.0**	**ug/L**	**SW846 8260B**
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	105	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090496 Work Order #...: MLL8H1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	103	(70 - 120)		
4-Bromofluorobenzene	108	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H100000-061 **Prep Batch #...:** 1222061						
Uranium	ND	1.0	ug/L	SW846 6020A	08/10-08/11/11	MLH641AA
		Dilution Factor: 1				
		Analysis Time..: 20:34				
MB Lot-Sample #: F1H100000-062 **Prep Batch #...:** 1222062						
Uranium	ND	1.0	ug/L	SW846 6020A	08/10-08/11/11	MLH661AA
		Dilution Factor: 1				
		Analysis Time..: 22:41				
MB Lot-Sample #: F1H100000-063 **Prep Batch #...:** 1222063						
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLH681AD
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AU
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AA
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Barium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AE
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AF
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AH
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Calcium	ND	1000	ug/L	SW846 6010C	08/10-08/16/11	MLH681AG
		Dilution Factor: 1				
		Analysis Time..: 11:29				
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AK
		Dilution Factor: 1				
		Analysis Time..: 15:09				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AJ
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AL
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLH681AM
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLH681AT
		Dilution Factor: 1				
		Analysis Time..: 17:21				
Magnesium	ND	1000	ug/L	SW846 6010C	08/10-08/12/11	MLH681AN
		Dilution Factor: 1				
		Analysis Time..: 09:37				
Manganese	ND	15.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AP
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AR
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLH681AV
		Dilution Factor: 1				
		Analysis Time..: 17:21				
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AC
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Sodium	ND	1000	ug/L	SW846 6010C	08/10-08/12/11	MLH681AQ
		Dilution Factor: 1				
		Analysis Time..: 09:37				
Strontium	ND	5.0	ug/L	SW846 6010C	08/10-08/16/11	MLH681AW
		Dilution Factor: 1				
		Analysis Time..: 11:29				
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681AX
		Dilution Factor: 1				
		Analysis Time..: 15:09				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681A0
		Dilution Factor: 1				
		Analysis Time..: 15:09				
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLH681A1
		Dilution Factor: 1				
		Analysis Time..: 15:09				

MB Lot-Sample #: F1H100000-064 **Prep Batch #...:** 1222064

Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AF
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AW
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AD
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Barium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AG
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AH
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AK
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Calcium	ND	1000	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1AJ
		Dilution Factor: 1				
		Analysis Time..: 13:48				
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AM
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AL
		Dilution Factor: 1				
		Analysis Time..: 17:31				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AN
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AP
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1AV
		Dilution Factor: 1				
		Analysis Time..: 19:43				
Magnesium	ND	1000	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AQ
		Dilution Factor: 1				
		Analysis Time..: 11:56				
Manganese	ND	15.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AR
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AU
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1AX
		Dilution Factor: 1				
		Analysis Time..: 19:43				
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AE
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Sodium	**458 J**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLH7A1AT**
		Dilution Factor: 1				
		Analysis Time..: 11:56				
Strontium	ND	5.0	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1A0
		Dilution Factor: 1				
		Analysis Time..: 13:48				
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1A1
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AA
		Dilution Factor: 1				
		Analysis Time..: 17:31				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090496 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AC

Dilution Factor: 1
Analysis Time..: 17:31

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H090496 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLPHM1AA		MB Lot-Sample #:	F1H120000-124	
	ND	0.20	mg/L	MCAWW 300.0A	08/06/11	1224124
		Dilution Factor: 1				
		Analysis Time..: 12:09				
Fluoride		Work Order #: MLPHQ1AA		MB Lot-Sample #:	F1H120000-125	
	ND	0.10	mg/L	MCAWW 300.0A	08/06/11	1224125
		Dilution Factor: 1				
		Analysis Time..: 12:09				
Nitrate		Work Order #: MLPHR1AA		MB Lot-Sample #:	F1H120000-126	
	ND	0.020	mg/L	MCAWW 300.0A	08/06/11	1224126
		Dilution Factor: 1				
		Analysis Time..: 12:09				
Nitrite		Work Order #: MLPHW1AA		MB Lot-Sample #:	F1H120000-127	
	ND	0.020	mg/L	MCAWW 300.0A	08/06/11	1224127
		Dilution Factor: 1				
		Analysis Time..: 12:09				
Phosphate as P, Ortho		Work Order #: MLPHX1AA		MB Lot-Sample #:	F1H120000-128	
	ND	0.50	mg/L	MCAWW 300.0A	08/06/11	1224128
		Dilution Factor: 1				
		Analysis Time..: 12:09				
Sulfate		Work Order #: MLPH01AA		MB Lot-Sample #:	F1H120000-129	
	ND	0.50	mg/L	MCAWW 300.0A	08/06/11	1224129
		Dilution Factor: 1				
		Analysis Time..: 12:09				
Total Alkalinity		Work Order #: MLRFM1AA		MB Lot-Sample #:	F1H170000-090	
	ND	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLRAM1AA		MB Lot-Sample #:	F1H120000-098	
	ND	10.0	mg/L	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090496 Work Order #...: MLL8H1AC Matrix.....: WATER
LCS Lot-Sample#: F1H120000-172
Prep Date.....: 08/11/11 Analysis Date..: 08/12/11
Prep Batch #...: 1224172 Analysis Time..: 14:31
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
cis-1,3-Dichloropropene	104	(70 - 130)	SW846 8260B
Dibromochloromethane	103	(60 - 135)	SW846 8260B
Vinyl chloride	87	(50 - 145)	SW846 8260B
Bromomethane	90	(30 - 145)	SW846 8260B
Chloroethane	87	(60 - 135)	SW846 8260B
Acetone	104	(40 - 140)	SW846 8260B
1,1-Dichloroethene	85	(70 - 130)	SW846 8260B
Methylene chloride	93	(55 - 140)	SW846 8260B
Carbon disulfide	80	(35 - 160)	SW846 8260B
1,1-Dichloroethane	95	(70 - 135)	SW846 8260B
2-Butanone	99	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	99	(85 - 115)	SW846 8260B
Chloroform	94	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	96	(65 - 130)	SW846 8260B
Carbon tetrachloride	98	(65 - 140)	SW846 8260B
1,2-Dichloroethane	95	(70 - 130)	SW846 8260B
Benzene	98	(80 - 120)	SW846 8260B
Trichloroethene	93	(70 - 125)	SW846 8260B
1,2-Dichloropropane	96	(75 - 125)	SW846 8260B
Bromodichloromethane	98	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	98	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	102	(55 - 140)	SW846 8260B
Toluene	102	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	104	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	98	(75 - 125)	SW846 8260B
2-Hexanone	101	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	108	(60 - 135)	SW846 8260B
Chlorobenzene	98	(80 - 120)	SW846 8260B
Bromoform	108	(70 - 130)	SW846 8260B
Ethylbenzene	101	(75 - 125)	SW846 8260B
Styrene	108	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	99	(65 - 130)	SW846 8260B
Tetrachloroethene	105	(45 - 150)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090496 **Work Order #...:** MLL8H1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H120000-172

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichlorobenzene	**100**	**(70 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
1,2-Dichloroethane-d4	101	(70 - 120)
4-Bromofluorobenzene	105	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H100000-061 **Prep Batch #...:** 1222061					
Uranium	104	(80 - 120)	SW846 6020A	08/10-08/11/11	MLH641AC
		Dilution Factor: 1	Analysis Time..: 20:41		
LCS Lot-Sample#: F1H100000-062 **Prep Batch #...:** 1222062					
Uranium	105	(80 - 120)	SW846 6020A	08/10-08/11/11	MLH661AC
		Dilution Factor: 1	Analysis Time..: 22:47		
LCS Lot-Sample#: F1H100000-063 **Prep Batch #...:** 1222063					
Arsenic	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A2
		Dilution Factor: 1	Analysis Time..: 15:16		
Silver	96	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A3
		Dilution Factor: 1	Analysis Time..: 15:16		
Aluminum	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A4
		Dilution Factor: 1	Analysis Time..: 15:16		
Barium	110	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A5
		Dilution Factor: 1	Analysis Time..: 15:16		
Beryllium	117	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A6
		Dilution Factor: 1	Analysis Time..: 15:16		
Calcium	105	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681A7
		Dilution Factor: 1	Analysis Time..: 11:36		
Cadmium	110	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A8
		Dilution Factor: 1	Analysis Time..: 15:16		
Cobalt	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681A9
		Dilution Factor: 1	Analysis Time..: 15:16		
Chromium	107	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CA
		Dilution Factor: 1	Analysis Time..: 15:16		
Copper	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CC
		Dilution Factor: 1	Analysis Time..: 15:16		

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	110	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CD
		Dilution Factor: 1	Analysis Time..: 15:16		
Magnesium	103	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CE
		Dilution Factor: 1	Analysis Time..: 09:44		
Manganese	109	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CF
		Dilution Factor: 1	Analysis Time..: 15:16		
Sodium	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CG
		Dilution Factor: 1	Analysis Time..: 09:44		
Nickel	107	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CH
		Dilution Factor: 1	Analysis Time..: 15:16		
Lead	101	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681CJ
		Dilution Factor: 1	Analysis Time..: 17:27		
Antimony	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CK
		Dilution Factor: 1	Analysis Time..: 15:16		
Selenium	104	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681CL
		Dilution Factor: 1	Analysis Time..: 17:27		
Strontium	102	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH681CM
		Dilution Factor: 1	Analysis Time..: 11:36		
Thallium	104	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CN
		Dilution Factor: 1	Analysis Time..: 15:16		
Vanadium	107	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CP
		Dilution Factor: 1	Analysis Time..: 15:16		
Zinc	115	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH681CQ
		Dilution Factor: 1	Analysis Time..: 15:16		
LCS Lot-Sample#: F1H100000-064 **Prep Batch #...:** 1222064					
Vanadium	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A2
		Dilution Factor: 1	Analysis Time..: 17:38		
Zinc	114	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A3
		Dilution Factor: 1	Analysis Time..: 17:38		

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Arsenic	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A4
		Dilution Factor: 1	Analysis Time..: 17:38		
Silver	95	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A5
		Dilution Factor: 1	Analysis Time..: 17:38		
Aluminum	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A6
		Dilution Factor: 1	Analysis Time..: 17:38		
Barium	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A7
		Dilution Factor: 1	Analysis Time..: 17:38		
Beryllium	113	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A8
		Dilution Factor: 1	Analysis Time..: 17:38		
Calcium	108	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1A9
		Dilution Factor: 1	Analysis Time..: 13:54		
Cadmium	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CA
		Dilution Factor: 1	Analysis Time..: 17:38		
Cobalt	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CC
		Dilution Factor: 1	Analysis Time..: 17:38		
Chromium	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CD
		Dilution Factor: 1	Analysis Time..: 17:38		
Copper	103	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CE
		Dilution Factor: 1	Analysis Time..: 17:38		
Iron	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CF
		Dilution Factor: 1	Analysis Time..: 17:38		
Magnesium	101	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CG
		Dilution Factor: 1	Analysis Time..: 12:02		
Manganese	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CH
		Dilution Factor: 1	Analysis Time..: 17:38		
Sodium	109	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CJ
		Dilution Factor: 1	Analysis Time..: 12:02		
Nickel	104	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CK
		Dilution Factor: 1	Analysis Time..: 17:38		

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Lead	101	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1CL
		Dilution Factor: 1	Analysis Time..: 19:49		
Antimony	102	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CM
		Dilution Factor: 1	Analysis Time..: 17:38		
Selenium	102	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1CN
		Dilution Factor: 1	Analysis Time..: 19:49		
Strontium	105	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1CP
		Dilution Factor: 1	Analysis Time..: 13:54		
Thallium	103	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CQ
		Dilution Factor: 1	Analysis Time..: 17:38		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090496 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLPHM1AC	LCS Lot-Sample#: F1H120000-124		
	92	(90 - 110)	MCAWW 300.0A	08/06/11	1224124
		Dilution Factor: 1	Analysis Time..: 11:54		
Fluoride		Work Order #: MLPHQ1AC	LCS Lot-Sample#: F1H120000-125		
	95	(90 - 110)	MCAWW 300.0A	08/06/11	1224125
		Dilution Factor: 1	Analysis Time..: 11:54		
Nitrate		Work Order #: MLPHR1AC	LCS Lot-Sample#: F1H120000-126		
	99	(90 - 110)	MCAWW 300.0A	08/06/11	1224126
		Dilution Factor: 1	Analysis Time..: 11:54		
Nitrite		Work Order #: MLPHW1AC	LCS Lot-Sample#: F1H120000-127		
	99	(90 - 110)	MCAWW 300.0A	08/06/11	1224127
		Dilution Factor: 1	Analysis Time..: 11:54		
Phosphate as P, Ortho		Work Order #: MLPHX1AC	LCS Lot-Sample#: F1H120000-128		
	96	(90 - 110)	MCAWW 300.0A	08/06/11	1224128
		Dilution Factor: 1	Analysis Time..: 11:54		
Sulfate		Work Order #: MLPH01AC	LCS Lot-Sample#: F1H120000-129		
	96	(90 - 110)	MCAWW 300.0A	08/06/11	1224129
		Dilution Factor: 1	Analysis Time..: 11:54		
Total Alkalinity		Work Order #: MLRFM1AC	LCS Lot-Sample#: F1H170000-090		
	92	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLRFM1AD	LCS Lot-Sample#: F1H170000-090		
	93	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLRAM1AC	LCS Lot-Sample#: F1H120000-098		
	100	(90 - 113)	MCAWW 160.1	08/11-08/12/11	1224098
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090496 Work Order #...: MLHLC1DN-MS Matrix.....: WATER
MS Lot-Sample #: F1H090496-002 MLHLC1DP-MSD
Date Sampled...: 08/05/11 09:30 Date Received..: 08/06/11
Prep Date.....: 08/11/11 Analysis Date..: 08/12/11
Prep Batch #...: 1224172 Analysis Time..: 16:17
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	103	(70 - 130)			SW846 8260B
	102	(70 - 130)	0.97	(0-20)	SW846 8260B
Dibromochloromethane	104	(60 - 135)			SW846 8260B
	101	(60 - 135)	2.6	(0-20)	SW846 8260B
Vinyl chloride	88	(50 - 145)			SW846 8260B
	91	(50 - 145)	2.8	(0-20)	SW846 8260B
Bromomethane	76	(30 - 145)			SW846 8260B
	81	(30 - 145)	5.8	(0-20)	SW846 8260B
Chloroethane	88	(60 - 135)			SW846 8260B
	88	(60 - 135)	0.18	(0-20)	SW846 8260B
Acetone	110	(40 - 140)			SW846 8260B
	99	(40 - 140)	10	(0-20)	SW846 8260B
1,1-Dichloroethene	87	(70 - 130)			SW846 8260B
	91	(70 - 130)	2.6	(0-20)	SW846 8260B
Methylene chloride	90	(55 - 140)			SW846 8260B
	85	(55 - 140)	6.0	(0-20)	SW846 8260B
Carbon disulfide	81	(35 - 160)			SW846 8260B
	80	(35 - 160)	0.67	(0-20)	SW846 8260B
1,1-Dichloroethane	104	(70 - 135)			SW846 8260B
	94	(70 - 135)	3.6	(0-20)	SW846 8260B
2-Butanone	112	(30 - 150)			SW846 8260B
	98	(30 - 150)	14	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	100	(85 - 115)			SW846 8260B
	97	(85 - 115)	2.7	(0-20)	SW846 8260B
Chloroform	96	(65 - 135)			SW846 8260B
	93	(65 - 135)	3.8	(0-20)	SW846 8260B
1,1,1-Trichloroethane	114	(65 - 130)			SW846 8260B
	106	(65 - 130)	2.2	(0-20)	SW846 8260B
Carbon tetrachloride	97	(65 - 140)			SW846 8260B
	96	(65 - 140)	1.1	(0-20)	SW846 8260B
1,2-Dichloroethane	102	(70 - 130)			SW846 8260B
	95	(70 - 130)	7.1	(0-20)	SW846 8260B
Benzene	99	(80 - 120)			SW846 8260B
	98	(80 - 120)	1.2	(0-20)	SW846 8260B
Trichloroethene	94	(70 - 125)			SW846 8260B
	92	(70 - 125)	1.9	(0-20)	SW846 8260B
1,2-Dichloropropane	97	(75 - 125)			SW846 8260B
	99	(75 - 125)	1.2	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090496 Work Order #...: MLHLC1DN-MS Matrix.....: WATER
MS Lot-Sample #: F1H090496-002 MLHLC1DP-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	101	(75 - 120)			SW846 8260B
	97	(75 - 120)	3.7	(0-20)	SW846 8260B
1,1,2-Trichloroethane	102	(75 - 125)			SW846 8260B
	98	(75 - 125)	3.7	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	106	(55 - 140)			SW846 8260B
	104	(55 - 140)	2.5	(0-20)	SW846 8260B
Toluene	103	(75 - 120)			SW846 8260B
	103	(75 - 120)	0.48	(0-20)	SW846 8260B
1,3-Dichlorobenzene	102	(75 - 125)			SW846 8260B
	101	(75 - 125)	0.78	(0-20)	SW846 8260B
1,4-Dichlorobenzene	97	(75 - 125)			SW846 8260B
	95	(75 - 125)	2.4	(0-20)	SW846 8260B
2-Hexanone	111	(55 - 130)			SW846 8260B
	101	(55 - 130)	10	(0-20)	SW846 8260B
4-Methyl-2-pentanone	114	(60 - 135)			SW846 8260B
	104	(60 - 135)	8.8	(0-20)	SW846 8260B
Chlorobenzene	98	(80 - 120)			SW846 8260B
	96	(80 - 120)	2.0	(0-20)	SW846 8260B
Bromoform	111	(70 - 130)			SW846 8260B
	104	(70 - 130)	7.4	(0-20)	SW846 8260B
Ethylbenzene	101	(75 - 125)			SW846 8260B
	103	(75 - 125)	1.8	(0-20)	SW846 8260B
Styrene	112	(65 - 135)			SW846 8260B
	111	(65 - 135)	0.89	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	101	(65 - 130)			SW846 8260B
	91	(65 - 130)	10	(0-20)	SW846 8260B
Tetrachloroethene	99	(45 - 150)			SW846 8260B
	98	(45 - 150)	0.93	(0-20)	SW846 8260B
1,2-Dichlorobenzene	100	(70 - 120)			SW846 8260B
	97	(70 - 120)	3.0	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
	108	(85 - 120)
Dibromofluoromethane	110	(85 - 115)
	104	(85 - 115)
1,2-Dichloroethane-d4	105	(70 - 120)
	99	(70 - 120)
4-Bromofluorobenzene	104	(75 - 120)
	100	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H090496-002 **Prep Batch #...:** 1222061							
Uranium	105	(80 - 120)			SW846 6020A	08/10-08/11/11	MLHLC1DG
	108	(80 - 120)	2.6	(0-20)	SW846 6020A	08/10-08/11/11	MLHLC1DH
		Dilution Factor: 1					
		Analysis Time..: 22:14					
MS Lot-Sample #: F1H090496-002 **Prep Batch #...:** 1222063							
Aluminum	104	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DW
	105	(80 - 120)	1.0	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DX
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Antimony	105	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1C3
	105	(80 - 120)	0.51	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1C4
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Arsenic	105	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DR
	105	(80 - 120)	0.50	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DT
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Barium	107	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1D0
	108	(80 - 120)	0.87	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1D1
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Beryllium	111	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1D2
	111	(80 - 120)	0.61	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1D3
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Cadmium	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1D6
	103	(80 - 120)	0.81	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1D7
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Calcium	117	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1D4
	100	(80 - 120)	2.1	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1D5
		Dilution Factor: 5					
		Analysis Time..: 13:04					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CJ
	101	(80 - 120)	0.85	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CK
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Cobalt	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CG
	99	(80 - 120)	0.69	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CH
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Copper	101	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CL
	102	(80 - 120)	0.89	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CM
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Iron	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CN
	104	(80 - 120)	0.78	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CP
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Lead	99	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1C1
	100	(80 - 120)	0.47	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1C2
		Dilution Factor: 1					
		Analysis Time..: 18:58					
Magnesium	99	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CQ
	99	(80 - 120)	0.25	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CR
		Dilution Factor: 1					
		Analysis Time..: 11:12					
Manganese	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CT
	103	(80 - 120)	0.71	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CU
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Nickel	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CX
	99	(80 - 120)	0.95	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1C0
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Selenium	103	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1C5
	105	(80 - 120)	1.2	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1C6
		Dilution Factor: 1					
		Analysis Time..: 18:58					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	93	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DU
	94	(80 - 120)	1.2	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DV
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Sodium	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1CV
	102	(80 - 120)	0.41	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1CW
		Dilution Factor: 1					
		Analysis Time..: 11:12					
Strontium	105	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLC1C7
	103	(80 - 120)	1.3	(0-20)	SW846 6010C	08/10-08/16/11	MLHLC1C8
		Dilution Factor: 5					
		Analysis Time..: 13:04					
Thallium	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1C9
	99	(80 - 120)	0.97	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DA
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Vanadium	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DC
	103	(80 - 120)	0.76	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DD
		Dilution Factor: 1					
		Analysis Time..: 16:46					
Zinc	108	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLC1DE
	110	(80 - 120)	1.4	(0-20)	SW846 6010C	08/10-08/12/11	MLHLC1DF
		Dilution Factor: 1					
		Analysis Time..: 16:46					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H090496-005 **Prep Batch #...:** 1222062							
Uranium	106	(80 - 120)			SW846 6020A	08/10-08/11/11	MLHLR1CH
	106	(80 - 120)	0.30	(0-20)	SW846 6020A	08/10-08/11/11	MLHLR1CJ
		Dilution Factor: 1					
		Analysis Time..: 23:21					
MS Lot-Sample #: F1H090496-005 **Prep Batch #...:** 1222064							
Aluminum	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CQ
	103	(80 - 120)	0.16	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CR
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Antimony	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1A4
	108	(80 - 120)	4.8	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1A5
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Arsenic	105	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CL
	105	(80 - 120)	0.04	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CM
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Barium	104	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CT
	105	(80 - 120)	0.57	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CU
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Beryllium	108	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CV
	109	(80 - 120)	0.74	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CW
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Cadmium	104	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C1
	103	(80 - 120)	0.65	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C2
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Calcium	96	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1CX
	122 N	(80 - 120)	3.1	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1C0
		Dilution Factor: 5					
		Analysis Time..: 14:07					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C5
	100	(80 - 120)	0.11	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C6
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Cobalt	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C3
	99	(80 - 120)	0.16	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C4
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Copper	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C7
	100	(80 - 120)	0.65	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C8
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Iron	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C9
	103	(80 - 120)	0.24	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DA
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Lead	99	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1DL
	100	(80 - 120)	0.14	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1DM
		Dilution Factor: 1					
		Analysis Time..: 20:02					
Magnesium	99	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DC
	98	(80 - 120)	0.17	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DD
		Dilution Factor: 1					
		Analysis Time..: 12:15					
Manganese	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DE
	103	(80 - 120)	0.17	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DF
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Nickel	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DJ
	99	(80 - 120)	0.56	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DK
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Selenium	104	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1A6
	104	(80 - 120)	0.18	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1A7
		Dilution Factor: 1					
		Analysis Time..: 20:02					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090496 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	91	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CN
	92	(80 - 120)	1.3	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CP
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Sodium	101	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DG
	99	(80 - 120)	0.59	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DH
		Dilution Factor: 1					
		Analysis Time..: 12:15					
Strontium	109	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1A8
	115	(80 - 120)	3.5	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1A9
		Dilution Factor: 5					
		Analysis Time..: 14:07					
Thallium	99	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CA
	99	(80 - 120)	0.02	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CC
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Vanadium	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CD
	102	(80 - 120)	0.0	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CE
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Zinc	112	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CF
	111	(80 - 120)	0.85	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CG
		Dilution Factor: 1					
		Analysis Time..: 17:50					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090496 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLHLC1DJ		MS Lot-Sample #:	F1H090496-002
	107	(90 - 110)	MCAWW 300.0A	08/06/11	1224124
		Dilution Factor: 10	Analysis Time..: 02:33		
Fluoride		Work Order #...: MLHLC1DK		MS Lot-Sample #:	F1H090496-002
	102	(90 - 110)	MCAWW 300.0A	08/06/11	1224125
		Dilution Factor: 1	Analysis Time..: 02:19		
Nitrate		Work Order #...: MLHLC1DL		MS Lot-Sample #:	F1H090496-002
	99	(90 - 110)	MCAWW 300.0A	08/06/11	1224126
		Dilution Factor: 1	Analysis Time..: 02:19		
Nitrite		Work Order #...: MLHLC1DM		MS Lot-Sample #:	F1H090496-002
	80 N	(90 - 110)	MCAWW 300.0A	08/06/11	1224127
		Dilution Factor: 1	Analysis Time..: 02:19		
Phosphate as P, Ortho		Work Order #...: MLHLC1D8		MS Lot-Sample #:	F1H090496-002
	61 N	(90 - 110)	MCAWW 300.0A	08/06/11	1224128
		Dilution Factor: 1	Analysis Time..: 02:19		
Sulfate		Work Order #...: MLHLC1D9		MS Lot-Sample #:	F1H090496-002
	100	(90 - 110)	MCAWW 300.0A	08/06/11	1224129
		Dilution Factor: 10	Analysis Time..: 02:33		
Total Alkalinity		Work Order #...: MLHLC1EA		MS Lot-Sample #:	F1H090496-002
	98	(80 - 120)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090496 **Work Order #...:** MLHLC-SMP MLHLC-DUP **Matrix.....:** WATER

Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H090496-002		
	387	383	mg/L	1.0	(0-15)	MCAWW 160.1	08/11-08/12/11	1224098
			Dilution Factor: 1			Analysis Time..: 00:00		
Chloride						SD Lot-Sample #: F1H090496-002		
	34.4	34.8	mg/L	0.98	(0-20)	MCAWW 300.0A	08/06/11	1224124
			Dilution Factor: 10			Analysis Time..: 02:33		
Fluoride						SD Lot-Sample #: F1H090496-002		
	1.5	1.5	mg/L	3.1	(0-20)	MCAWW 300.0A	08/06/11	1224125
			Dilution Factor: 1			Analysis Time..: 02:19		
Nitrate						SD Lot-Sample #: F1H090496-002		
	0.099	0.096	mg/L	3.2	(0-20)	MCAWW 300.0A	08/06/11	1224126
			Dilution Factor: 1			Analysis Time..: 02:19		
Nitrite						SD Lot-Sample #: F1H090496-002		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/06/11	1224127
			Dilution Factor: 1			Analysis Time..: 02:19		
Phosphate as P, Ortho						SD Lot-Sample #: F1H090496-002		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/06/11	1224128
			Dilution Factor: 1			Analysis Time..: 02:19		
Sulfate						SD Lot-Sample #: F1H090496-002		
	40.7	41.0	mg/L	0.69	(0-20)	MCAWW 300.0A	08/06/11	1224129
			Dilution Factor: 10			Analysis Time..: 02:33		
Total Alkalinity						SD Lot-Sample #: F1H090496-002		
	252	252	mg/L	0.0	(0-20)	MCAWW 310.1	08/17/11	1229090
			Dilution Factor: 1			Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001

Radiochemistry

Lab Sample ID: F1H090496-001
Work Order: MLHLA
Matrix: WATER

Date Collected: 08/05/11 0840
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1228169		Yld % 69
Uranium 234	2.86		0.41	0.10	0.06	08/16/11	08/18/11
Uranium 235/236	0.107		0.072	0.100	0.032	08/16/11	08/18/11
Uranium 238	2.76		0.40	0.10	0.03	08/16/11	08/18/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW220001

Radiochemistry

Lab Sample ID: F1H090496-002
Work Order: MLHLC
Matrix: WATER

Date Collected: 08/05/11 0930
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1228169		Yld % 54
Uranium 234	24.3		2.3	0.1	0.03	08/16/11	08/18/11
Uranium 235/236	1.03		0.27	0.10	0.04	08/16/11	08/18/11
Uranium 238	24.8		2.4	0.1	0.03	08/16/11	08/18/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW220001

Radiochemistry

Lab Sample ID: F1H090496-002X
Work Order: MLHLC
Matrix: WATER

Date Collected: 08/05/11 0930
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 59
Uranium 234	24.3		2.3	0.1	0.06	08/16/11	08/18/11
Uranium 235/236	1.27		0.29	0.10	0.04	08/16/11	08/18/11
Uranium 238	23.2		2.2	0.1	0.03	08/16/11	08/18/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW180001

Radiochemistry

Lab Sample ID: F1H090496-003
Work Order: MLHLD
Matrix: WATER

Date Collected: 08/05/11 1245
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 46
Uranium 234	38.8		3.6	0.1	0.09	08/16/11	08/18/11
Uranium 235/236	1.72		0.39	0.10	0.10	08/16/11	08/18/11
Uranium 238	39.6		3.7	0.1	0.08	08/16/11	08/18/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW603D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090496-004
Work Order: MLHLP
Matrix: WATER

Date Collected: 08/05/11 0840
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1228169	Yld % 72
Uranium 234	3.01		0.43	0.10	0.04	08/16/11	08/18/11
Uranium 235/236	0.196		0.099	0.100	0.033	08/16/11	08/18/11
Uranium 238	2.97		0.42	0.10	0.08	08/16/11	08/18/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW22001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090496-005
Work Order: MLHLR
Matrix: WATER

Date Collected: 08/05/11 0930
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 64
Uranium 234	21.6		2.1	0.1	0.09	08/17/11	08/17/11
Uranium 235/236	1.05		0.26	0.10	0.04	08/17/11	08/17/11
Uranium 238	21.2		2.0	0.1	0.03	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW22001 DISSOLVED DUP

Radiochemistry

Lab Sample ID: F1H090496-005X
Work Order: MLHLR
Matrix: WATER

Date Collected: 08/05/11 0930
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 62
Uranium 234	23.1		2.2	0.1	0.06	08/17/11	08/17/11
Uranium 235/236	1.22		0.28	0.10	0.06	08/17/11	08/17/11
Uranium 238	22.7		2.2	0.1	0.07	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW180001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090496-006
Work Order: MLHL1
Matrix: WATER

Date Collected: 08/05/11 1245
Date Received: 08/06/11 0820

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1229042		Yld % 49
Uranium 234	37.7		3.5	0.1	0.1	08/17/11	08/17/11
Uranium 235/236	1.79		0.38	0.10	0.08	08/17/11	08/17/11
Uranium 238	36.6		3.4	0.1	0.1	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H090496
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1228169		Yld % 93		F1H160000-169B
Uranium 234	0.013	U	0.022	0.100	0.035	08/16/11	08/17/11	
Uranium 235/236	-0.0024	U	0.0047	0.100	0.043	08/16/11	08/17/11	
Uranium 238	-0.0038	U	0.0054	0.100	0.040	08/16/11	08/17/11	
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1229042		Yld % 83		F1H170000-042B
Uranium 234	-0.0060	U	0.0070	0.100	0.047	08/17/11	08/17/11	
Uranium 235/236	-0.0025	U	0.0050	0.100	0.046	08/17/11	08/17/11	
Uranium 238	0.020	U	0.028	0.100	0.043	08/17/11	08/17/11	

NOTE(S)

Data are incomplete without the oase narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H090496
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H160000-169C**
Uranium 234	3.27	3.26	0.42	0.04	85	100	(76 - 136)
Uranium 238	3.39	3.37	0.43	0.04	85	99	(76 - 134)
	Batch #:	1228169		Analysis Date:	08/17/11		
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H170000-042C**
Uranium 234	3.27	3.26	0.42	0.04	82	100	(76 - 136)
Uranium 238	3.39	3.50	0.44	0.02	82	103	(76 - 134)
	Batch #:	1229042		Analysis Date:	08/17/11		

NOTE(S):

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1H090496
Matrix: WATER

Date Sampled: 08/05/11
Date Received: 08/06/11

Parameter	SAMPLE Result	Total Uncert. (2σ +/-)	% Yld	DUPLICATE Result	Total Uncert. (2 σ +/-)	% Yld	QC Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H090496-002**	
Uranium 234	24.3	2.3	54	24.3	2.3	59	0.2	%RPD
Uranium 235/236	1.03	0.27	54	1.27	0.29	59	21	%RPD
Uranium 238	24.8	2.4	54	23.2	2.2	59	7	%RPD
	Batch #:	1228169 (Sample)		1228169 (Duplicate)				
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H090496-005**	
Uranium 234	21.6	2.1	64	23.1	2.2	62	7	%RPD
Uranium 235/236	1.05	0.26	64	1.22	0.28	62	15	%RPD
Uranium 238	21.2	2.0	64	22.7	2.2	62	7	%RPD
	Batch #:	1229042 (Sample)		1229042 (Duplicate)				

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis Storage Loc: R250,2-9,METS,V

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 6

Date Received: 2011-08-06

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
1	A04AMW603D0001			2011-08-05 / 840	MLHLA	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06			
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R250,2-9,METS,V

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 6

Date Received: 2011-08-06

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
2	A04AMW220001			2011-08-05 / 930	MLHLC	WATER

SAMPLE COMMENTS:

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R250,2-9,METS,V

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guteryl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 6

Date Received: 2011-08-06
Analytical Due Date: 2011-08-17
Report Due Date: 2011-08-19
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium lstead of 200.8

	XX	GO	MCAW 300.0A W	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
	XX	VC	MCAW 310.1 W	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
D	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	XX	QK	SW846 8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
S	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R250,2-9,METS,V

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 6

Date Received: 2011-08-06

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

S	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
S	XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
S	XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
S	XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
S	XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06		
S	XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
S	XX	DO	MCAW	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
S	XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
S	XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
X	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
X	XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
X	XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
X	XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
X	XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
X	XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06		
X	XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
X	XX	DO	MCAW	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
X	XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
X	XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A04BMW180001			2011-08-05 / 1245	MLHLD	WATER

SAMPLE COMMENTS:

CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R250,2-9,METS,V

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-06

Project: 140415
Guteryl Steel
Analytical Due Date: 2011-08-17

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-19

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 6
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	A04AMW603D0001 DISSOLVED			2011-08-05 / 840	MLHLP	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

Storage Loc: R250,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 6

Date Received: 2011-08-06

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
5	A04AMW22001 DISSOLVED			2011-08-05 / 930	MLHLR	WATER

SAMPLE COMMENTS:

ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R250,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 6

Date Received: 2011-08-06

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
D	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R250,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 6

Date Received: 2011-08-06

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

S	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
X	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (LCT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	A04BMW180001 DISSOLVED			2011-08-05 / 1245	MLHL1	WATER

SAMPLE COMMENTS:

MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H090496

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R250,METS

Project Manager: LMF
Quote #: 89251 SDG:
Project: 140415 Guteryl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 6

Date Received: 2011-08-06
Analytical Due Date: 2011-08-17
Report Due Date: 2011-08-19
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

estAmerica St. Louis
715 Rider Trail North
rth City, MO 63045
one 314.298.8566 fax 314.298.8757

CUR 059

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/05/2011	COC No: 003
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
ncinnati, Ohio 45212	Calendar (C) or Work Days (W)			
13) 782-4700 Phone	TAT if different from Below _____			
13) 782-4807 FAX	☐ 2 weeks			SDG No.
oject Name: Former Guteri Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
D #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
4AMW603D0001	8/5/2011	0840	Grab	GW	10	X		X	X	X	X	X	X	X				4xLP	1x500P 2x250P 3xVIAL
4AMW220001	8/5/2011	0930	Grab	GW	10	X		X	X	X	X	X	X	X				4xLP 2x250P	1x500P 3xVIAL
4AMW220001MS	8/5/2011	0930	Grab	GW	10	X		X	X	X	X	X	X	X				4xLP 2x250P	3xVIAL 1x500P
4AMW220001MSD	8/5/2011	0930	Grab	GW	10	X		X	X	X	X	X	X	X				4xLP	1x500P 3xVIAL 2x250
4BMW180001	8/5/2011	1245	Grab	GW	7	X		X	X	X	X	X	X						4xLP 2x250P 1x500P

eservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

ssible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

ecial Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Kevin Cronin	Shaw E & I. Inc.	08/05/11 1630	[signature]	TABUFFALO	08/05/11 1630
[signature]	TABUFFALO	08/05/11 1650	[signature]	TA STL	08/06/11 0820

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F11090496 TestAmerica St. Louis

CUR Form #: 0 5 9

CONDITION UPON RECEIPT FORM

Client: SHAW

Quote No: 89251

COC/RFA No: 003

Initiated By: NVO Date: 08/06/11 Time: 0820

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) ~~N~~ NV 8/9

Shipping # (s):*

1. 4485 0258 2944
2. 4485 0258 2955
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Sample Temperature (s):**

1. 3
2. AMBIENT
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Received bottles for Filter metals, Iso-U, + Tetra-U - not on COC - ok per LF - AB 8-9-11

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 8/10/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guteryl Steel

Lot #: F1H090504

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 24, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H090504

This report contains the analytical results for the 10 samples received under chain of custody by TestAmerica in St. Louis on August 9, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1230013
There was insufficient sample volume to perform MS/MSD analysis. An LCS/LCSD was performed to demonstrate accuracy and replicate precision.

Affected Samples:
F1H090504 (1): A02MW110001
F1H090504 (2): A02MW090001
F1H090504 (4): SEEP 01
F1H090504 (5): SEEP 02

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1222064
The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

The MSD recovery for calcium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

Strontium was observed in the CCB above 3X the MDL. Associated samples which are either non-detect for the contaminant or exhibit concentrations greater than ten (10) times the concentrations observed in the CCB and do not require re-analysis.

Affected Samples:
F1H090504 (1): A02MW110001
F1H090504 (2): A02MW090001
F1H090504 (3): A02MW080001
F1H090504 (4): SEEP 01
F1H090504 (5): SEEP 02
F1H090504 (6): A02MW110001 DISSOLVED
F1H090504 (7): A02MW090001 DISSOLVED
F1H090504 (8): A02MW080001 DISSOLVED
F1H090504 (9): SEEP 01
F1H090504 (10): SEEP 02

Chloride (MCAWW 300.0A)

Batch: 1224130
The sampls was analyzed at dilution, due to high concentrations of the target analytes.

Affected Samples:
F1H090504 (1): A02MW110001
F1H090504 (2): A02MW090001
F1H090504 (3): A02MW080001
F1H090504 (4): SEEP 01
F1H090504 (5): SEEP 02

Sulfate (MCAWW 300.0A)

Batch: 1224135
The sampls was analyzed at dilution, due to high concentrations of the target analytes.

Affected Samples:
F1H090504 (1): A02MW110001
F1H090504 (2): A02MW090001
F1H090504 (3): A02MW080001
F1H090504 (4): SEEP 01
F1H090504 (5): SEEP 02

Nitrite as N (MCAWW 300.0A)

Batch: 1224133
The following samples were reported ND at dilution for Nitrite, due to interference with Chloride in the undiluted runs. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H090504 (1): A02MW110001
F1H090504 (3): A02MW080001
F1H090504 (4): SEEP 01
F1H090504 (5): SEEP 02

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H090504 (1): A02MW110001
F1H090504 (2): A02MW090001
F1H090504 (3): A02MW080001
F1H090504 (4): SEEP 01
F1H090504 (5): SEEP 02

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1224134
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H090504 (1): A02MW110001
F1H090504 (2): A02MW090001
F1H090504 (3): A02MW080001
F1H090504 (4): SEEP 01
F1H090504 (5): SEEP 02

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H090504

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H090504

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLHM6	001	A02MW110001	08/08/11	09:10
MLHM7	002	A02MW090001	08/08/11	10:40
MLHM9	003	A02MW080001	08/08/11	11:40
MLHNA	004	SEEP 01	08/08/11	10:35
MLHNC	005	SEEP 02	08/08/11	11:30
MLHNE	006	A02MW110001 DISSOLVED	08/08/11	09:10
MLHNF	007	A02MW090001 DISSOLVED	08/08/11	10:40
MLHNG	008	A02MW080001 DISSOLVED	08/08/11	11:40
MLHNH	009	SEEP 01	08/08/11	10:35
MLHNJ	010	SEEP 02	08/08/11	11:30

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001

GC/MS Volatiles

Lot-Sample #...: F1H090504-001 Work Order #...: MLHM61AC Matrix.....: WATER
Date Sampled...: 08/08/11 09:10 Date Received..: 08/09/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 13:21
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**3.2**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**12**	**2.0**	**ug/L**
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**5.9**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**8.7**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**19**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.97 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**0.25 J**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**0.23 J**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**0.59 J**	**1.0**	**ug/L**
Vinyl chloride	**1.3 J**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001

GC/MS Volatiles

Lot-Sample #...: F1H090504-001 Work Order #...: MLHM61AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	107	(70 - 120)
4-Bromofluorobenzene	106	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001

TOTAL Metals

Lot-Sample #...: F1H090504-001 Matrix.....: WATER
Date Sampled...: 08/08/11 09:10 Date Received..: 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	**17.7**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHM61A5**
		Dilution Factor: 1		Analysis Time..: 23:41		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AF
		Dilution Factor: 1		Analysis Time..: 18:23		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AG
		Dilution Factor: 1		Analysis Time..: 18:23		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AE
		Dilution Factor: 1		Analysis Time..: 18:23		
Barium	**65.2**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM61AH**
		Dilution Factor: 1		Analysis Time..: 18:23		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AJ
		Dilution Factor: 1		Analysis Time..: 18:23		
Calcium	**114000**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHM61AK**
		Dilution Factor: 5		Analysis Time..: 14:38		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AL
		Dilution Factor: 1		Analysis Time..: 18:23		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AM
		Dilution Factor: 1		Analysis Time..: 18:23		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AN
		Dilution Factor: 1		Analysis Time..: 18:23		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AP
		Dilution Factor: 1		Analysis Time..: 18:23		
Iron	**2120**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM61AQ**
		Dilution Factor: 1		Analysis Time..: 18:23		
Magnesium	**34000**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM61AR**
		Dilution Factor: 1		Analysis Time..: 12:46		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001

TOTAL Metals

Lot-Sample #...: F1H090504-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**119**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM61AT**
		Dilution Factor: 1		Analysis Time..: 18:23		
Sodium	**49900 B**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM61AU**
		Dilution Factor: 1		Analysis Time..: 12:46		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AV
		Dilution Factor: 1		Analysis Time..: 18:23		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHM61AW
		Dilution Factor: 1		Analysis Time..: 20:34		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61AX
		Dilution Factor: 1		Analysis Time..: 18:23		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHM61A0
		Dilution Factor: 1		Analysis Time..: 20:34		
Strontium	**492**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHM61A1**
		Dilution Factor: 5		Analysis Time..: 14:38		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61A2
		Dilution Factor: 1		Analysis Time..: 18:23		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM61A3
		Dilution Factor: 1		Analysis Time..: 18:23		
Zinc	**7.3 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM61A4**
		Dilution Factor: 1		Analysis Time..: 18:23		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001

General Chemistry

Lot-Sample #...: F1H090504-001 Work Order #...: MLHM6 Matrix.....: WATER
Date Sampled...: 08/08/11 09:10 Date Received..: 08/09/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	101	20.0	mg/L	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 100		Analysis Time..: 08:52		
Fluoride	0.69	0.10	mg/L	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1		Analysis Time..: 07:54		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1		Analysis Time..: 07:54		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 10		Analysis Time..: 08:08		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1		Analysis Time..: 07:54		
Sulfate	61.4	5.0	mg/L	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 10		Analysis Time..: 08:08		
Total Alkalinity	332	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	626	10.0	mg/L	MCAWW 160.1	08/15-08/16/11	1227174
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001

GC/MS Volatiles

Lot-Sample #...: F1H090504-002 Work Order #...: MLHM71AN Matrix.....: WATER
Date Sampled...: 08/08/11 10:40 Date Received..: 08/09/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 14:47
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**2.0**	**2.0**	**ug/L**
Benzene	**0.10 J**	**1.0**	**ug/L**
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**0.39 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**14**	**2.0**	**ug/L**
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**12**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**2.9**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**6.8**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.92 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**0.24 J**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**0.79 J**	**1.0**	**ug/L**
Vinyl chloride	**2.7**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001

GC/MS Volatiles

Lot-Sample #...: F1H090504-002 Work Order #...: MLHM71AN Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	114	(85 - 115)
1,2-Dichloroethane-d4	112	(70 - 120)
4-Bromofluorobenzene	106	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001

TOTAL Metals

Lot-Sample #...: F1H090504-002 Matrix.....: WATER
Date Sampled...: 08/08/11 10:40 Date Received..: 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	21.8	1.0	ug/L	SW846 6020A	08/10-08/11/11	MLHM71AG
		Dilution Factor: 1		Analysis Time..: 23:47		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AR
		Dilution Factor: 1		Analysis Time..: 18:29		
Aluminum	94.3 J	200	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AT
		Dilution Factor: 1		Analysis Time..: 18:29		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AQ
		Dilution Factor: 1		Analysis Time..: 18:29		
Barium	31.8 J	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AU
		Dilution Factor: 1		Analysis Time..: 18:29		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AV
		Dilution Factor: 1		Analysis Time..: 18:29		
Calcium	85900	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHM71AW
		Dilution Factor: 5		Analysis Time..: 14:45		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AX
		Dilution Factor: 1		Analysis Time..: 18:29		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71A0
		Dilution Factor: 1		Analysis Time..: 18:29		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71A1
		Dilution Factor: 1		Analysis Time..: 18:29		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71A2
		Dilution Factor: 1		Analysis Time..: 18:29		
Iron	1730	100	ug/L	SW846 6010C	08/10-08/12/11	MLHM71A3
		Dilution Factor: 1		Analysis Time..: 18:29		
Magnesium	23700	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHM71A4
		Dilution Factor: 1		Analysis Time..: 12:53		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001

TOTAL Metals

Lot-Sample #...: F1H090504-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**304**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM71A5**
		Dilution Factor: 1		Analysis Time..: 18:29		
Sodium	**19300 B**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM71A6**
		Dilution Factor: 1		Analysis Time..: 12:53		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71A7
		Dilution Factor: 1		Analysis Time..: 18:29		
Lead	**2.2 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHM71A8**
		Dilution Factor: 1		Analysis Time..: 20:41		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71A9
		Dilution Factor: 1		Analysis Time..: 18:29		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHM71AA
		Dilution Factor: 1		Analysis Time..: 20:41		
Strontium	**272**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHM71AC**
		Dilution Factor: 5		Analysis Time..: 14:45		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AD
		Dilution Factor: 1		Analysis Time..: 18:29		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM71AE
		Dilution Factor: 1		Analysis Time..: 18:29		
Zinc	**18.9 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM71AF**
		Dilution Factor: 1		Analysis Time..: 18:29		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001

General Chemistry

Lot-Sample #...: F1H090504-002 Work Order #...: MLHM7 Matrix.....: WATER
Date Sampled...: 08/08/11 10:40 Date Received..: 08/09/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	22.9	2.0	mg/L	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 10		Analysis Time..: 07:25		
Fluoride	1.9	0.10	mg/L	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1		Analysis Time..: 07:11		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1		Analysis Time..: 07:11		
Nitrite	ND	0.020	mg/L	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 1		Analysis Time..: 07:11		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1		Analysis Time..: 07:11		
Sulfate	54.7	5.0	mg/L	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 10		Analysis Time..: 07:25		
Total Alkalinity	247	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	398	10.0	mg/L	MCAWW 160.1	08/15-08/16/11	1227174
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW080001

TOTAL Metals

Lot-Sample #...: F1H090504-003 **Matrix.....:** WATER
Date Sampled...: 08/08/11 11:40 **Date Received..:** 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	1.1	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/11/11**	**MLHM91AG**
		Dilution Factor: 1		Analysis Time..: 23:54		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AR
		Dilution Factor: 1		Analysis Time..: 18:48		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AT
		Dilution Factor: 1		Analysis Time..: 18:48		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AQ
		Dilution Factor: 1		Analysis Time..: 18:48		
Barium	**48.8 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM91AU**
		Dilution Factor: 1		Analysis Time..: 18:48		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AV
		Dilution Factor: 1		Analysis Time..: 18:48		
Calcium	**198000**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHM91AW**
		Dilution Factor: 5		Analysis Time..: 15:03		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AX
		Dilution Factor: 1		Analysis Time..: 18:48		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91A0
		Dilution Factor: 1		Analysis Time..: 18:48		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91A1
		Dilution Factor: 1		Analysis Time..: 18:48		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91A2
		Dilution Factor: 1		Analysis Time..: 18:48		
Iron	**207**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM91A3**
		Dilution Factor: 1		Analysis Time..: 18:48		
Magnesium	**48600**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM91A4**
		Dilution Factor: 1		Analysis Time..: 13:11		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW080001

TOTAL Metals

Lot-Sample #...: F1H090504-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**245**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHM91A5**
		Dilution Factor: 1		Analysis Time..: 18:48		
Sodium	**185000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHM91A6**
		Dilution Factor: 5		Analysis Time..: 15:03		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91A7
		Dilution Factor: 1		Analysis Time..: 18:48		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHM91A8
		Dilution Factor: 1		Analysis Time..: 21:00		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91A9
		Dilution Factor: 1		Analysis Time..: 18:48		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHM91AA
		Dilution Factor: 1		Analysis Time..: 21:00		
Strontium	**892**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHM91AC**
		Dilution Factor: 5		Analysis Time..: 15:03		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AD
		Dilution Factor: 1		Analysis Time..: 18:48		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AE
		Dilution Factor: 1		Analysis Time..: 18:48		
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHM91AF
		Dilution Factor: 1		Analysis Time..: 18:48		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW080001

General Chemistry

Lot-Sample #...: F1H090504-003 Work Order #...: MLHM9 Matrix.....: WATER
Date Sampled...: 08/08/11 11:40 Date Received..: 08/09/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	296	20.0	mg/L	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 100		Analysis Time..: 06:56		
Fluoride	0.75	0.10	mg/L	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1		Analysis Time..: 06:27		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1		Analysis Time..: 06:27		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 10		Analysis Time..: 06:42		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1		Analysis Time..: 06:27		
Sulfate	197	50.0	mg/L	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 100		Analysis Time..: 06:56		
Total Alkalinity	328	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1260	10.0	mg/L	MCAWW 160.1	08/15-08/16/11	1227174
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

GC/MS Volatiles

Lot-Sample #...: F1H090504-004 Work Order #...: MLHNA1AN Matrix.....: WATER
Date Sampled...: 08/08/11 10:35 Date Received..: 08/09/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 15:14
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**0.23 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**2.5**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**0.41 J**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**1.8 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.67 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**2.2**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**0.90 J**	**1.0**	**ug/L**
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

GC/MS Volatiles

Lot-Sample #...: F1H090504-004 Work Order #...: MLHNA1AN Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
Dibromofluoromethane	113	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

TOTAL Metals

Lot-Sample #...: F1H090504-004 Matrix.....: WATER
Date Sampled...: 08/08/11 10:35 Date Received..: 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	44.9	1.0	ug/L	SW846 6020A	08/10-08/12/11	MLHNA1AG
		Dilution Factor: 1		Analysis Time..: 00:01		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AR
		Dilution Factor: 1		Analysis Time..: 18:55		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AT
		Dilution Factor: 1		Analysis Time..: 18:55		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AQ
		Dilution Factor: 1		Analysis Time..: 18:55		
Barium	53.7	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AU
		Dilution Factor: 1		Analysis Time..: 18:55		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AV
		Dilution Factor: 1		Analysis Time..: 18:55		
Calcium	106000	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHNA1AW
		Dilution Factor: 5		Analysis Time..: 15:10		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AX
		Dilution Factor: 1		Analysis Time..: 18:55		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A0
		Dilution Factor: 1		Analysis Time..: 18:55		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A1
		Dilution Factor: 1		Analysis Time..: 18:55		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A2
		Dilution Factor: 1		Analysis Time..: 18:55		
Iron	109	100	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A3
		Dilution Factor: 1		Analysis Time..: 18:55		
Magnesium	29400	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A4
		Dilution Factor: 1		Analysis Time..: 13:18		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

TOTAL Metals

Lot-Sample #...: F1H090504-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	4.2 J	15.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A5
		Dilution Factor: 1		Analysis Time..: 18:55		
Sodium	195000 B	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHNA1A6
		Dilution Factor: 5		Analysis Time..: 15:10		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A7
		Dilution Factor: 1		Analysis Time..: 18:55		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNA1A8
		Dilution Factor: 1		Analysis Time..: 21:06		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1A9
		Dilution Factor: 1		Analysis Time..: 18:55		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNA1AA
		Dilution Factor: 1		Analysis Time..: 21:06		
Strontium	372	25.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNA1AC
		Dilution Factor: 5		Analysis Time..: 15:10		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AD
		Dilution Factor: 1		Analysis Time..: 18:55		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AE
		Dilution Factor: 1		Analysis Time..: 18:55		
Zinc	73.4	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNA1AF
		Dilution Factor: 1		Analysis Time..: 18:55		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

General Chemistry

Lot-Sample #...: F1H090504-004 Work Order #...: MLHNA Matrix.....: WATER
Date Sampled...: 08/08/11 10:35 Date Received..: 08/09/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	298	20.0	mg/L	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 100		Analysis Time..: 03:34		
Fluoride	0.83	0.10	mg/L	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1		Analysis Time..: 03:05		
Nitrate	0.044	0.020	mg/L	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1		Analysis Time..: 03:05		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 10		Analysis Time..: 03:20		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1		Analysis Time..: 03:05		
Sulfate	51.3	5.0	mg/L	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 10		Analysis Time..: 03:20		
Total Alkalinity	292	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	939	10.0	mg/L	MCAWW 160.1	08/15-08/16/11	1227174
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

GC/MS Volatiles

Lot-Sample #...: F1H090504-005 Work Order #...: MLHNC1AN Matrix.....: WATER
Date Sampled...: 08/08/11 11:30 Date Received..: 08/09/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 15:41
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**2.7**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.83 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

GC/MS Volatiles

Lot-Sample #...: F1H090504-005 Work Order #...: MLHNC1AN Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	106	(70 - 120)
4-Bromofluorobenzene	119	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

TOTAL Metals

Lot-Sample #...: F1H090504-005 Matrix.....: WATER
Date Sampled...: 08/08/11 11:30 Date Received..: 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	**6.3**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/12/11**	**MLHNC1AG**
		Dilution Factor: 1		Analysis Time..: 00:07		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1AR
		Dilution Factor: 1		Analysis Time..: 19:01		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1AT
		Dilution Factor: 1		Analysis Time..: 19:01		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1AQ
		Dilution Factor: 1		Analysis Time..: 19:01		
Barium	**68.1**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNC1AU**
		Dilution Factor: 1		Analysis Time..: 19:01		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1AV
		Dilution Factor: 1		Analysis Time..: 19:01		
Calcium	**113000**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNC1AW**
		Dilution Factor: 5		Analysis Time..: 15:16		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1AX
		Dilution Factor: 1		Analysis Time..: 19:01		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1A0
		Dilution Factor: 1		Analysis Time..: 19:01		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1A1
		Dilution Factor: 1		Analysis Time..: 19:01		
Copper	**226**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNC1A2**
		Dilution Factor: 1		Analysis Time..: 19:01		
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1A3
		Dilution Factor: 1		Analysis Time..: 19:01		
Magnesium	**30800**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNC1A4**
		Dilution Factor: 1		Analysis Time..: 13:24		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

TOTAL Metals

Lot-Sample #...: F1H090504-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**16.5**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNC1A5**
		Dilution Factor: 1		Analysis Time..: 19:01		
Sodium	**180000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNC1A6**
		Dilution Factor: 5		Analysis Time..: 15:16		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1A7
		Dilution Factor: 1		Analysis Time..: 19:01		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNC1A8
		Dilution Factor: 1		Analysis Time..: 21:13		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1A9
		Dilution Factor: 1		Analysis Time..: 19:01		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNC1AA
		Dilution Factor: 1		Analysis Time..: 21:13		
Strontium	**485**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNC1AC**
		Dilution Factor: 5		Analysis Time..: 15:16		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1AD
		Dilution Factor: 1		Analysis Time..: 19:01		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNC1AE
		Dilution Factor: 1		Analysis Time..: 19:01		
Zinc	**45.4**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNC1AF**
		Dilution Factor: 1		Analysis Time..: 19:01		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

General Chemistry

Lot-Sample #...: F1H090504-005 Work Order #...: MLHNC Matrix.....: WATER
Date Sampled...: 08/08/11 11:30 Date Received..: 08/09/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	248	20.0	mg/L	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 100		Analysis Time..: 06:13		
Fluoride	0.46	0.10	mg/L	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1		Analysis Time..: 05:15		
Nitrate	0.33	0.020	mg/L	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1		Analysis Time..: 05:15		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 10		Analysis Time..: 05:59		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1		Analysis Time..: 05:15		
Sulfate	75.9	5.0	mg/L	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 10		Analysis Time..: 05:59		
Total Alkalinity	314	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	867	10.0	mg/L	MCAWW 160.1	08/15-08/16/11	1227174
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090504-006 **Matrix.....:** WATER
Date Sampled...: 08/08/11 09:10 **Date Received..:** 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	**14.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/12/11**	**MLHNE1A2**
		Dilution Factor: 1		Analysis Time..: 00:14		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AC
		Dilution Factor: 1		Analysis Time..: 19:08		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AD
		Dilution Factor: 1		Analysis Time..: 19:08		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AA
		Dilution Factor: 1		Analysis Time..: 19:08		
Barium	**68.4**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNE1AE**
		Dilution Factor: 1		Analysis Time..: 19:08		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AF
		Dilution Factor: 1		Analysis Time..: 19:08		
Calcium	**112000**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNE1AG**
		Dilution Factor: 5		Analysis Time..: 15:22		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AH
		Dilution Factor: 1		Analysis Time..: 19:08		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AJ
		Dilution Factor: 1		Analysis Time..: 19:08		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AK
		Dilution Factor: 1		Analysis Time..: 19:08		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AL
		Dilution Factor: 1		Analysis Time..: 19:08		
Iron	**2250**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNE1AM**
		Dilution Factor: 1		Analysis Time..: 19:08		
Magnesium	**34100**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNE1AN**
		Dilution Factor: 1		Analysis Time..: 13:30		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090504-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**126**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNE1AP**
		Dilution Factor: 1		Analysis Time..: 19:08		
Sodium	**47500 B**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNE1AQ**
		Dilution Factor: 1		Analysis Time..: 13:30		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AR
		Dilution Factor: 1		Analysis Time..: 19:08		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNE1AT
		Dilution Factor: 1		Analysis Time..: 21:19		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AU
		Dilution Factor: 1		Analysis Time..: 19:08		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNE1AV
		Dilution Factor: 1		Analysis Time..: 21:19		
Strontium	**496**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNE1AW**
		Dilution Factor: 5		Analysis Time..: 15:22		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1AX
		Dilution Factor: 1		Analysis Time..: 19:08		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1A0
		Dilution Factor: 1		Analysis Time..: 19:08		
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNE1A1
		Dilution Factor: 1		Analysis Time..: 19:08		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090504-007 Matrix.....: WATER
Date Sampled...: 08/08/11 10:40 Date Received..: 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	21.1	1.0	ug/L	SW846 6020A	08/10-08/12/11	MLHNF1AD
		Dilution Factor: 1		Analysis Time..: 00:34		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AG
		Dilution Factor: 1		Analysis Time..: 19:14		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AH
		Dilution Factor: 1		Analysis Time..: 19:14		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AF
		Dilution Factor: 1		Analysis Time..: 19:14		
Barium	31.4 J	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AJ
		Dilution Factor: 1		Analysis Time..: 19:14		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AK
		Dilution Factor: 1		Analysis Time..: 19:14		
Calcium	85400	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHNF1AL
		Dilution Factor: 5		Analysis Time..: 15:29		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AM
		Dilution Factor: 1		Analysis Time..: 19:14		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AN
		Dilution Factor: 1		Analysis Time..: 19:14		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AP
		Dilution Factor: 1		Analysis Time..: 19:14		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AQ
		Dilution Factor: 1		Analysis Time..: 19:14		
Iron	1600	100	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AR
		Dilution Factor: 1		Analysis Time..: 19:14		
Magnesium	23800	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AT
		Dilution Factor: 1		Analysis Time..: 13:37		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090504-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**303**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNF1AU**
		Dilution Factor: 1		Analysis Time..: 19:14		
Sodium	**19300 B**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNF1AV**
		Dilution Factor: 1		Analysis Time..: 13:37		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AW
		Dilution Factor: 1		Analysis Time..: 19:14		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNF1AX
		Dilution Factor: 1		Analysis Time..: 21:26		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1A0
		Dilution Factor: 1		Analysis Time..: 19:14		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNF1A1
		Dilution Factor: 1		Analysis Time..: 21:26		
Strontium	**268**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNF1A2**
		Dilution Factor: 5		Analysis Time..: 15:29		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1A3
		Dilution Factor: 1		Analysis Time..: 19:14		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AA
		Dilution Factor: 1		Analysis Time..: 19:14		
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNF1AC
		Dilution Factor: 1		Analysis Time..: 19:14		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW080001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090504-008 Matrix.....: WATER
Date Sampled...: 08/08/11 11:40 Date Received..: 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	**1.1**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/12/11**	**MLHNG1AD**
		Dilution Factor: 1		Analysis Time..: 00:41		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AG
		Dilution Factor: 1		Analysis Time..: 19:21		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AH
		Dilution Factor: 1		Analysis Time..: 19:21		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AF
		Dilution Factor: 1		Analysis Time..: 19:21		
Barium	**47.0 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNG1AJ**
		Dilution Factor: 1		Analysis Time..: 19:21		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AK
		Dilution Factor: 1		Analysis Time..: 19:21		
Calcium	**191000**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNG1AL**
		Dilution Factor: 5		Analysis Time..: 15:35		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AM
		Dilution Factor: 1		Analysis Time..: 19:21		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AN
		Dilution Factor: 1		Analysis Time..: 19:21		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AP
		Dilution Factor: 1		Analysis Time..: 19:21		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AQ
		Dilution Factor: 1		Analysis Time..: 19:21		
Iron	**140**	**100**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNG1AR**
		Dilution Factor: 1		Analysis Time..: 19:21		
Magnesium	**47700**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNG1AT**
		Dilution Factor: 1		Analysis Time..: 13:43		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW080001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H090504-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**236**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNG1AU**
		Dilution Factor: 1		Analysis Time..: 19:21		
Sodium	**178000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNG1AV**
		Dilution Factor: 5		Analysis Time..: 15:35		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AW
		Dilution Factor: 1		Analysis Time..: 19:21		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNG1AX
		Dilution Factor: 1		Analysis Time..: 21:32		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1A0
		Dilution Factor: 1		Analysis Time..: 19:21		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNG1A1
		Dilution Factor: 1		Analysis Time..: 21:32		
Strontium	**845**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNG1A2**
		Dilution Factor: 5		Analysis Time..: 15:35		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1A3
		Dilution Factor: 1		Analysis Time..: 19:21		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AA
		Dilution Factor: 1		Analysis Time..: 19:21		
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNG1AC
		Dilution Factor: 1		Analysis Time..: 19:21		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

TOTAL Metals

Lot-Sample #...: F1H090504-009 **Matrix.....:** WATER
Date Sampled...: 08/08/11 10:35 **Date Received..:** 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	**44.3**	**1.0**	**ug/L**	**SW846 6020A**	**08/10-08/12/11**	**MLHNH1AH**
		Dilution Factor: 1		Analysis Time..: 00:47		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AL
		Dilution Factor: 1		Analysis Time..: 19:27		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AM
		Dilution Factor: 1		Analysis Time..: 19:27		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AK
		Dilution Factor: 1		Analysis Time..: 19:27		
Barium	**53.0**	**50.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNH1AN**
		Dilution Factor: 1		Analysis Time..: 19:27		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AP
		Dilution Factor: 1		Analysis Time..: 19:27		
Calcium	**104000**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNH1AQ**
		Dilution Factor: 5		Analysis Time..: 15:41		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AR
		Dilution Factor: 1		Analysis Time..: 19:27		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AT
		Dilution Factor: 1		Analysis Time..: 19:27		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AU
		Dilution Factor: 1		Analysis Time..: 19:27		
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AV
		Dilution Factor: 1		Analysis Time..: 19:27		
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AW
		Dilution Factor: 1		Analysis Time..: 19:27		
Magnesium	**29800**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNH1AX**
		Dilution Factor: 1		Analysis Time..: 13:49		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

TOTAL Metals

Lot-Sample #...: F1H090504-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	ND	15.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1A0
		Dilution Factor: 1		Analysis Time..: 19:27		
Sodium	**192000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNH1A1**
		Dilution Factor: 5		Analysis Time..: 15:41		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1A2
		Dilution Factor: 1		Analysis Time..: 19:27		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNH1A3
		Dilution Factor: 1		Analysis Time..: 21:39		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AA
		Dilution Factor: 1		Analysis Time..: 19:27		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNH1AC
		Dilution Factor: 1		Analysis Time..: 21:39		
Strontium	**370**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNH1AD**
		Dilution Factor: 5		Analysis Time..: 15:41		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AE
		Dilution Factor: 1		Analysis Time..: 19:27		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNH1AF
		Dilution Factor: 1		Analysis Time..: 19:27		
Zinc	**65.5**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNH1AG**
		Dilution Factor: 1		Analysis Time..: 19:27		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

TOTAL Metals

Lot-Sample #...: F1H090504-010 Matrix.....: WATER
Date Sampled...: 08/08/11 11:30 Date Received..: 08/09/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1222062						
Uranium	6.2	1.0	ug/L	SW846 6020A	08/10-08/12/11	MLHNJ1AM
		Dilution Factor: 1		Analysis Time..: 00:54		
Prep Batch #...: 1222064						
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AQ
		Dilution Factor: 1		Analysis Time..: 19:33		
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AR
		Dilution Factor: 1		Analysis Time..: 19:33		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AP
		Dilution Factor: 1		Analysis Time..: 19:33		
Barium	67.4	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AT
		Dilution Factor: 1		Analysis Time..: 19:33		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AU
		Dilution Factor: 1		Analysis Time..: 19:33		
Calcium	124000	5000	ug/L	SW846 6010C	08/10-08/16/11	MLHNJ1AV
		Dilution Factor: 5		Analysis Time..: 15:47		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AW
		Dilution Factor: 1		Analysis Time..: 19:33		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AX
		Dilution Factor: 1		Analysis Time..: 19:33		
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1A0
		Dilution Factor: 1		Analysis Time..: 19:33		
Copper	220	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1A1
		Dilution Factor: 1		Analysis Time..: 19:33		
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1A2
		Dilution Factor: 1		Analysis Time..: 19:33		
Magnesium	30700	1000	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1A3
		Dilution Factor: 1		Analysis Time..: 13:56		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

TOTAL Metals

Lot-Sample #...: F1H090504-010 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**13.7 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNJ1AA**
		Dilution Factor: 1		Analysis Time..: 19:33		
Sodium	**197000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNJ1AC**
		Dilution Factor: 5		Analysis Time..: 15:47		
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AD
		Dilution Factor: 1		Analysis Time..: 19:33		
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNJ1AE
		Dilution Factor: 1		Analysis Time..: 21:45		
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AF
		Dilution Factor: 1		Analysis Time..: 19:33		
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLHNJ1AG
		Dilution Factor: 1		Analysis Time..: 21:45		
Strontium	**542**	**25.0**	**ug/L**	**SW846 6010C**	**08/10-08/16/11**	**MLHNJ1AH**
		Dilution Factor: 5		Analysis Time..: 15:47		
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AJ
		Dilution Factor: 1		Analysis Time..: 19:33		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLHNJ1AK
		Dilution Factor: 1		Analysis Time..: 19:33		
Zinc	**38.9**	**20.0**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLHNJ1AL**
		Dilution Factor: 1		Analysis Time..: 19:33		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090504 Work Order #...: MLRLL1AA Matrix.....: WATER
MB Lot-Sample #: F1H180000-013

Prep Date.....: 08/17/11 Analysis Time..: 10:16
Analysis Date..: 08/17/11 Prep Batch #...: 1230013
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	**0.28 J**	**1.0**	**ug/L**	**SW846 8260B**
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	103	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H090504 **Work Order #...:** MLRLL1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	102	(70 - 120)		
4-Bromofluorobenzene	101	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090504 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H100000-062 **Prep Batch #...:** 1222062						
Uranium	ND	1.0	ug/L	SW846 6020A	08/10-08/11/11	MLH661AA
		Dilution Factor: 1				
		Analysis Time..: 22:41				
MB Lot-Sample #: F1H100000-064 **Prep Batch #...:** 1222064						
Aluminum	ND	200	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AF
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Antimony	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AW
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AD
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Barium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AG
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AH
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AK
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Calcium	ND	1000	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1AJ
		Dilution Factor: 1				
		Analysis Time..: 13:48				
Chromium	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AM
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AL
		Dilution Factor: 1				
		Analysis Time..: 17:31				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090504 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AN
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Iron	ND	100	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AP
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Lead	ND	10.0	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1AV
		Dilution Factor: 1				
		Analysis Time..: 19:43				
Magnesium	ND	1000	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AQ
		Dilution Factor: 1				
		Analysis Time..: 11:56				
Manganese	ND	15.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AR
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Nickel	ND	40.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AU
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Selenium	ND	15.0	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1AX
		Dilution Factor: 1				
		Analysis Time..: 19:43				
Silver	ND	10.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AE
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Sodium	**458 J**	**1000**	**ug/L**	**SW846 6010C**	**08/10-08/12/11**	**MLH7A1AT**
		Dilution Factor: 1				
		Analysis Time..: 11:56				
Strontium	ND	5.0	ug/L	SW846 6010C	08/10-08/16/11	MLH7A1A0
		Dilution Factor: 1				
		Analysis Time..: 13:48				
Thallium	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1A1
		Dilution Factor: 1				
		Analysis Time..: 17:31				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AA
		Dilution Factor: 1				
		Analysis Time..: 17:31				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H090504 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/10-08/12/11	MLH7A1AC
		Dilution Factor: 1				
		Analysis Time..: 17:31				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H090504 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLRP81AA		MB Lot-Sample #:	F1H120000-130	
	ND	0.20	mg/L	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Fluoride		Work Order #: MLRQA1AA		MB Lot-Sample #:	F1H120000-131	
	ND	0.10	mg/L	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Nitrate		Work Order #: MLRQC1AA		MB Lot-Sample #:	F1H120000-132	
	ND	0.020	mg/L	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Nitrite		Work Order #: MLRQD1AA		MB Lot-Sample #:	F1H120000-133	
	ND	0.020	mg/L	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Phosphate as P, Ortho		Work Order #: MLRQE1AA		MB Lot-Sample #:	F1H120000-134	
	ND	0.50	mg/L	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Sulfate		Work Order #: MLRQF1AA		MB Lot-Sample #:	F1H120000-135	
	ND	0.50	mg/L	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Total Alkalinity		Work Order #: MLRFM1AA		MB Lot-Sample #:	F1H170000-090	
	ND	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLQ961AA		MB Lot-Sample #:	F1H150000-174	
	ND	10.0	mg/L	MCAWW 160.1	08/15-08/16/11	1227174
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090504 Work Order #...: MLRLL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: F1H180000-013 MLRLL1AD-LCSD
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 09:23
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	103	(70 - 130)			SW846 8260B
	104	(70 - 130)	0.58	(0-20)	SW846 8260B
Dibromochloromethane	102	(60 - 135)			SW846 8260B
	102	(60 - 135)	0.88	(0-20)	SW846 8260B
Vinyl chloride	94	(50 - 145)			SW846 8260B
	88	(50 - 145)	5.7	(0-20)	SW846 8260B
Bromomethane	106	(30 - 145)			SW846 8260B
	103	(30 - 145)	2.5	(0-20)	SW846 8260B
Chloroethane	94	(60 - 135)			SW846 8260B
	92	(60 - 135)	2.1	(0-20)	SW846 8260B
Acetone	92	(40 - 140)			SW846 8260B
	98	(40 - 140)	6.2	(0-20)	SW846 8260B
1,1-Dichloroethene	104	(70 - 130)			SW846 8260B
	104	(70 - 130)	0.19	(0-20)	SW846 8260B
Methylene chloride	91	(55 - 140)			SW846 8260B
	95	(55 - 140)	4.8	(0-20)	SW846 8260B
Carbon disulfide	98	(35 - 160)			SW846 8260B
	95	(35 - 160)	3.2	(0-20)	SW846 8260B
1,1-Dichloroethane	96	(70 - 135)			SW846 8260B
	95	(70 - 135)	0.38	(0-20)	SW846 8260B
2-Butanone	89	(30 - 150)			SW846 8260B
	94	(30 - 150)	5.9	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	98	(85 - 115)			SW846 8260B
	98	(85 - 115)	0.15	(0-20)	SW846 8260B
Chloroform	93	(65 - 135)			SW846 8260B
	96	(65 - 135)	3.2	(0-20)	SW846 8260B
1,1,1-Trichloroethane	101	(65 - 130)			SW846 8260B
	104	(65 - 130)	3.1	(0-20)	SW846 8260B
Carbon tetrachloride	103	(65 - 140)			SW846 8260B
	103	(65 - 140)	0.090	(0-20)	SW846 8260B
1,2-Dichloroethane	94	(70 - 130)			SW846 8260B
	97	(70 - 130)	2.9	(0-20)	SW846 8260B
Benzene	99	(80 - 120)			SW846 8260B
	99	(80 - 120)	0.14	(0-20)	SW846 8260B
Trichloroethene	93	(70 - 125)			SW846 8260B
	94	(70 - 125)	1.1	(0-20)	SW846 8260B
1,2-Dichloropropane	95	(75 - 125)			SW846 8260B
	95	(75 - 125)	0.37	(0-20)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H090504 Work Order #...: MLRLL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: F1H180000-013 MLRLL1AD-LCSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	98	(75 - 120)			SW846 8260B
	98	(75 - 120)	0.070	(0-20)	SW846 8260B
1,1,2-Trichloroethane	95	(75 - 125)			SW846 8260B
	100	(75 - 125)	5.0	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	105	(55 - 140)			SW846 8260B
	104	(55 - 140)	1.2	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	106	(75 - 120)	0.28	(0-20)	SW846 8260B
1,3-Dichlorobenzene	101	(75 - 125)			SW846 8260B
	102	(75 - 125)	0.78	(0-20)	SW846 8260B
1,4-Dichlorobenzene	96	(75 - 125)			SW846 8260B
	97	(75 - 125)	0.88	(0-20)	SW846 8260B
2-Hexanone	89	(55 - 130)			SW846 8260B
	88	(55 - 130)	1.3	(0-20)	SW846 8260B
4-Methyl-2-pentanone	96	(60 - 135)			SW846 8260B
	100	(60 - 135)	3.9	(0-20)	SW846 8260B
Chlorobenzene	98	(80 - 120)			SW846 8260B
	98	(80 - 120)	0.37	(0-20)	SW846 8260B
Bromoform	104	(70 - 130)			SW846 8260B
	108	(70 - 130)	3.6	(0-20)	SW846 8260B
Ethylbenzene	105	(75 - 125)			SW846 8260B
	105	(75 - 125)	0.47	(0-20)	SW846 8260B
Styrene	111	(65 - 135)			SW846 8260B
	111	(65 - 135)	0.090	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	92	(65 - 130)			SW846 8260B
	96	(65 - 130)	4.1	(0-20)	SW846 8260B
Tetrachloroethene	105	(45 - 150)			SW846 8260B
	102	(45 - 150)	3.2	(0-20)	SW846 8260B
1,2-Dichlorobenzene	98	(70 - 120)			SW846 8260B
	102	(70 - 120)	3.8	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
	111	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
	107	(85 - 115)
1,2-Dichloroethane-d4	97	(70 - 120)
	102	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)
	101	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090504 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H100000-062 **Prep Batch #...:** 1222062					
Uranium	105	(80 - 120)	SW846 6020A	08/10-08/11/11	MLH661AC
		Dilution Factor: 1		Analysis Time..: 22:47	
LCS Lot-Sample#: F1H100000-064 **Prep Batch #...:** 1222064					
Vanadium	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A2
		Dilution Factor: 1		Analysis Time..: 17:38	
Zinc	114	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A3
		Dilution Factor: 1		Analysis Time..: 17:38	
Arsenic	106	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A4
		Dilution Factor: 1		Analysis Time..: 17:38	
Silver	95	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A5
		Dilution Factor: 1		Analysis Time..: 17:38	
Aluminum	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A6
		Dilution Factor: 1		Analysis Time..: 17:38	
Barium	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A7
		Dilution Factor: 1		Analysis Time..: 17:38	
Beryllium	113	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1A8
		Dilution Factor: 1		Analysis Time..: 17:38	
Calcium	108	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1A9
		Dilution Factor: 1		Analysis Time..: 13:54	
Cadmium	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CA
		Dilution Factor: 1		Analysis Time..: 17:38	
Cobalt	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CC
		Dilution Factor: 1		Analysis Time..: 17:38	
Chromium	105	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CD
		Dilution Factor: 1		Analysis Time..: 17:38	
Copper	103	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CE
		Dilution Factor: 1		Analysis Time..: 17:38	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090504 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CF
		Dilution Factor: 1	Analysis Time..: 17:38		
Magnesium	101	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CG
		Dilution Factor: 1	Analysis Time..: 12:02		
Manganese	108	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CH
		Dilution Factor: 1	Analysis Time..: 17:38		
Sodium	109	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CJ
		Dilution Factor: 1	Analysis Time..: 12:02		
Nickel	104	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CK
		Dilution Factor: 1	Analysis Time..: 17:38		
Lead	101	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1CL
		Dilution Factor: 1	Analysis Time..: 19:49		
Antimony	102	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CM
		Dilution Factor: 1	Analysis Time..: 17:38		
Selenium	102	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1CN
		Dilution Factor: 1	Analysis Time..: 19:49		
Strontium	105	(80 - 120)	SW846 6010C	08/10-08/16/11	MLH7A1CP
		Dilution Factor: 1	Analysis Time..: 13:54		
Thallium	103	(80 - 120)	SW846 6010C	08/10-08/12/11	MLH7A1CQ
		Dilution Factor: 1	Analysis Time..: 17:38		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090504 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLRP81AC	LCS Lot-Sample#: F1H120000-130		
	91	(90 - 110)	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 1	Analysis Time..: 02:37		
Fluoride		Work Order #: MLRQA1AC	LCS Lot-Sample#: F1H120000-131		
	99	(90 - 110)	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1	Analysis Time..: 02:37		
Nitrate		Work Order #: MLRQC1AC	LCS Lot-Sample#: F1H120000-132		
	97	(90 - 110)	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1	Analysis Time..: 02:37		
Nitrite		Work Order #: MLRQD1AC	LCS Lot-Sample#: F1H120000-133		
	99	(90 - 110)	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 1	Analysis Time..: 02:37		
Phosphate as P, Ortho		Work Order #: MLRQE1AC	LCS Lot-Sample#: F1H120000-134		
	97	(90 - 110)	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1	Analysis Time..: 02:37		
Sulfate		Work Order #: MLRQF1AC	LCS Lot-Sample#: F1H120000-135		
	94	(90 - 110)	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 1	Analysis Time..: 02:37		
Total Alkalinity		Work Order #: MLRFM1AC	LCS Lot-Sample#: F1H170000-090		
	92	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLRFM1AD	LCS Lot-Sample#: F1H170000-090		
	93	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLQ961AC	LCS Lot-Sample#: F1H150000-174		
	97	(90 - 113)	MCAWW 160.1	08/15-08/16/11	1227174
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090504 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H090496-005 **Prep Batch #...:** 1222062							
Uranium	106	(80 - 120)			SW846 6020A	08/10-08/11/11	MLHLR1CH
	106	(80 - 120)	0.30	(0-20)	SW846 6020A	08/10-08/11/11	MLHLR1CJ
		Dilution Factor: 1					
		Analysis Time..: 23:21					
MS Lot-Sample #: F1H090496-005 **Prep Batch #...:** 1222064							
Aluminum	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CQ
	103	(80 - 120)	0.16	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CR
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Antimony	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1A4
	108	(80 - 120)	4.8	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1A5
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Arsenic	105	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CL
	105	(80 - 120)	0.04	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CM
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Barium	104	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CT
	105	(80 - 120)	0.57	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CU
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Beryllium	108	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CV
	109	(80 - 120)	0.74	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CW
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Cadmium	104	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C1
	103	(80 - 120)	0.65	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C2
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Calcium	96	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1CX
	122 N	(80 - 120)	3.1	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1C0
		Dilution Factor: 5					
		Analysis Time..: 14:07					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090504 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C5
	100	(80 - 120)	0.11	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C6
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Cobalt	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C3
	99	(80 - 120)	0.16	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C4
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Copper	100	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C7
	100	(80 - 120)	0.65	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1C8
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Iron	103	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1C9
	103	(80 - 120)	0.24	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DA
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Lead	99	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1DL
	100	(80 - 120)	0.14	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1DM
		Dilution Factor: 1					
		Analysis Time..: 20:02					
Magnesium	99	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DC
	98	(80 - 120)	0.17	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DD
		Dilution Factor: 1					
		Analysis Time..: 12:15					
Manganese	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DE
	103	(80 - 120)	0.17	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DF
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Nickel	98	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DJ
	99	(80 - 120)	0.56	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DK
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Selenium	104	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1A6
	104	(80 - 120)	0.18	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1A7
		Dilution Factor: 1					
		Analysis Time..: 20:02					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H090504 **Matrix.....:** WATER
Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	91	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CN
	92	(80 - 120)	1.3	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CP
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Sodium	101	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1DG
	99	(80 - 120)	0.59	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1DH
		Dilution Factor: 1					
		Analysis Time..: 12:15					
Strontium	109	(80 - 120)			SW846 6010C	08/10-08/16/11	MLHLR1A8
	115	(80 - 120)	3.5	(0-20)	SW846 6010C	08/10-08/16/11	MLHLR1A9
		Dilution Factor: 5					
		Analysis Time..: 14:07					
Thallium	99	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CA
	99	(80 - 120)	0.02	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CC
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Vanadium	102	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CD
	102	(80 - 120)	0.0	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CE
		Dilution Factor: 1					
		Analysis Time..: 17:50					
Zinc	112	(80 - 120)			SW846 6010C	08/10-08/12/11	MLHLR1CF
	111	(80 - 120)	0.85	(0-20)	SW846 6010C	08/10-08/12/11	MLHLR1CG
		Dilution Factor: 1					
		Analysis Time..: 17:50					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090504 **Matrix.....:** WATER
Date Sampled...: 08/08/11 10:35 **Date Received..:** 08/09/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLHNA1CG		MS Lot-Sample #: F1H090504-004	
	100	(90 - 110)	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 100		Analysis Time..: 03:34	
Fluoride		Work Order #...: MLHNA1CJ		MS Lot-Sample #: F1H090504-004	
	100	(90 - 110)	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1		Analysis Time..: 03:05	
Nitrate		Work Order #...: MLHNA1CL		MS Lot-Sample #: F1H090504-004	
	98	(90 - 110)	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1		Analysis Time..: 03:05	
Nitrite		Work Order #...: MLHNA1CN		MS Lot-Sample #: F1H090504-004	
	68 N	(90 - 110)	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 10		Analysis Time..: 03:20	
Phosphate as P, Ortho		Work Order #...: MLHNA1CQ		MS Lot-Sample #: F1H090504-004	
	80 N	(90 - 110)	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1		Analysis Time..: 03:05	
Sulfate		Work Order #...: MLHNA1CT		MS Lot-Sample #: F1H090504-004	
	94	(90 - 110)	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 10		Analysis Time..: 03:20	
Total Alkalinity		Work Order #...: MLHLC1EA		MS Lot-Sample #: F1H090496-002	
	98	(80 - 120)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090504 **Work Order #...:** MLHNA-SMP MLHNA-DUP **Matrix.....:** WATER

Date Sampled...: 08/08/11 10:35 **Date Received..:** 08/09/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H090504-004		
	298	296	mg/L	0.75	(0-20)	MCAWW 300.0A	08/09/11	1224130
		Dilution Factor: 100				Analysis Time..: 03:34		
Fluoride						SD Lot-Sample #: F1H090504-004		
	0.83	0.88	mg/L	6.1	(0-20)	MCAWW 300.0A	08/09/11	1224131
		Dilution Factor: 1				Analysis Time..: 03:05		
Nitrate						SD Lot-Sample #: F1H090504-004		
	0.044	0.043	mg/L	3.1	(0-20)	MCAWW 300.0A	08/09/11	1224132
		Dilution Factor: 1				Analysis Time..: 03:05		
Nitrite						SD Lot-Sample #: F1H090504-004		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/09/11	1224133
		Dilution Factor: 10				Analysis Time..: 03:20		
Phosphate as P, Ortho						SD Lot-Sample #: F1H090504-004		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/09/11	1224134
		Dilution Factor: 1				Analysis Time..: 03:05		
Sulfate						SD Lot-Sample #: F1H090504-004		
	51.3	50.6	mg/L	1.3	(0-20)	MCAWW 300.0A	08/09/11	1224135
		Dilution Factor: 10				Analysis Time..: 03:20		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090504 **Work Order #...:** MLHM6-SMP MLHM6-DUP **Matrix.....:** WATER

Date Sampled...: 08/08/11 09:10 **Date Received..:** 08/09/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H090504-001		
	626	625	mg/L	0.16	(0-0.0)	MCAWW 160.1	08/15-08/16/11	1227174
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H090504 **Work Order #...:** MLHLC-SMP MLHLC-DUP **Matrix.....:** WATER

Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #: F1H090496-002		
	252	252	mg/L	0.0	(0-20)	MCAWW 310.1	08/17/11	1229090
			Dilution Factor: 1			Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001

Radiochemistry

Lab Sample ID: F1H090504-001
Work Order: MLHM6
Matrix: WATER

Date Collected: 08/08/11 0910
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 76
Uranium 234	4.13		0.51	0.10	0.06	08/17/11	08/17/11
Uranium 235/236	0.26		0.11	0.10	0.05	08/17/11	08/17/11
Uranium 238	4.56		0.55	0.10	0.02	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001

Radiochemistry

Lab Sample ID: F1H090504-002
Work Order: MLHM7
Matrix: WATER

Date Collected: 08/08/11 1040
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 76
Uranium 234	6.07		0.69	0.10	0.06	08/17/11	08/17/11
Uranium 235/236	0.32		0.12	0.10	0.05	08/17/11	08/17/11
Uranium 238	6.48		0.73	0.10	0.04	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW080001

Radiochemistry

Lab Sample ID: F1H090504-003
Work Order: MLHM9
Matrix: WATER

Date Collected: 08/08/11 1140
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 37
Uranium 234	0.37		0.17	0.10	0.10	08/17/11	08/17/11
Uranium 235/236	-0.006	U	0.012	0.100	0.11	08/17/11	08/17/11
Uranium 238	0.24		0.14	0.10	0.09	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

Radiochemistry

Lab Sample ID: F1H090504-004
Work Order: MLHNA
Matrix: WATER

Date Collected: 08/08/11 1035
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 73
Uranium 234	13.2		1.3	0.1	0.06	08/17/11	08/17/11
Uranium 235/236	0.72		0.20	0.10	0.03	08/17/11	08/17/11
Uranium 238	13.2		1.3	0.1	0.05	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

Radiochemistry

Lab Sample ID: F1H090504-005
Work Order: MLHNC
Matrix: WATER

Date Collected: 08/08/11 1130
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD	-		pCi/L		Batch # 1229042		Yld % 75
Uranium 234	2.09		0.33	0.10	0.06	08/17/11	08/17/11
Uranium 235/236	0.028	U	0.040	0.100	0.059	08/17/11	08/17/11
Uranium 238	1.59		0.27	0.10	0.05	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW110001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090504-006
Work Order: MLHNE
Matrix: WATER

Date Collected: 08/08/11 0910
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 69
Uranium 234	4.75		0.58	0.10	0.05	08/17/11	08/17/11
Uranium 235/236	0.22		0.11	0.10	0.05	08/17/11	08/17/11
Uranium 238	4.65		0.58	0.10	0.05	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW090001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090504-007
Work Order: MLHNF
Matrix: WATER

Date Collected: 08/08/11 1040
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 75
Uranium 234	6.26		0.72	0.10	0.06	08/17/11	08/17/11
Uranium 235/236	0.28		0.12	0.10	0.03	08/17/11	08/17/11
Uranium 238	6.70		0.76	0.10	0.03	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW080001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H090504-008
Work Order: MLHNG
Matrix: WATER

Date Collected: 08/08/11 1140
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 71
Uranium 234	0.40		0.13	0.10	0.05	08/17/11	08/17/11
Uranium 235/236	0.022	U	0.035	0.100	0.056	08/17/11	08/17/11
Uranium 238	0.34		0.12	0.10	0.03	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 01

Radiochemistry

Lab Sample ID: F1H090504-009
Work Order: MLHNH
Matrix: WATER

Date Collected: 08/08/11 1035
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 55
Uranium 234	15.4		1.6	0.1	0.07	08/17/11	08/17/11
Uranium 235/236	0.67		0.21	0.10	0.07	08/17/11	08/17/11
Uranium 238	15.3		1.6	0.1	0.07	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: SEEP 02

Radiochemistry

Lab Sample ID: F1H090504-010
Work Order: MLHNJ
Matrix: WATER

Date Collected: 08/08/11 1130
Date Received: 08/09/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1229042		Yld % 58
Uranium 234	1.89		0.34	0.10	0.05	08/17/11	08/17/11
Uranium 235/236	0.088		0.072	0.100	0.040	08/17/11	08/17/11
Uranium 238	2.13		0.36	0.10	0.05	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H090504
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1229042		Yld % 83	F1H170000-042B
Uranium 234	-0.0060	U	0.0070	0.100	0.047	08/17/11	08/17/11
Uranium 235/236	-0.0025	U	0.0050	0.100	0.046	08/17/11	08/17/11
Uranium 238	0.020	U	0.028	0.100	0.043	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H090504
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ +/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/L		A-01-R MOD			F1H170000-042C
Uranium 234	3.27	3.26	0.42	0.04	82	100	(76 - 136)
Uranium 238	3.39	3.50	0.44	0.02	82	103	(76 - 134)
	Batch #:	1229042		Analysis Date:	08/17/11		

NOTE (S)

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1H090504
Matrix: WATER

Date Sampled: 08/05/11
Date Received: 08/06/11

Parameter	SAMPLE Result	Total Uncert. (2σ+/-)	% Yld	DUPLICATE Result	Total Uncert. (2 σ+/-)	% Yld	QC Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**A-01-R MOD**			**F1H090496-005**	
Uranium 234	21.6	2.1	64	23.1	2.2	62	7	%RPD
Uranium 235/236	1.05	0.26	64	1.22	0.28	62	15	%RPD
Uranium 238	21.2	2.0	64	22.7	2.2	62	7	%RPD
	Batch #:	1229042 (Sample)		1229042 (Duplicate)				

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

TestAmerica St. Louis

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,2-9,METS,V

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

Date Received: 2011-08-09

Analytical Due Date: 2011-08-17

PO#: 697886 | Report to: Kevin Cronin

Report Due Date: 2011-08-19

Client: 522706 | Shaw Environmental & Infrastructure Inc

Report Type: B Standard Report

#SMPS In LOT: 10

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A02MW110001			2011-08-08 / 910	MLHM6	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06			
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,2-9,METS,V

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 10

Date Received: 2011-08-09

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 0020 for total uranium istead of 200.8

XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE # 2 | CLIENT SAMPLE ID: A02MW090001 | Site ID | Client Matrix: WATER | DATE/TIME SAMPLED: 2011-08-08 / 1040 | WORKORDER: MLHM7

SAMPLE COMMENTS:

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
3	A02MW080001			2011-08-08 / 1140	MLHM9	WATER

SAMPLE COMMENTS:

AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,2-9,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

Date Received: 2011-08-09

Analytical Due Date: 2011-08-17

PO#: 697886 | Report to: Kevin Cronin

Report Due Date: 2011-08-19

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: B Standard Report

#SMPS in LOT: 10 | EDD Code: 00

DoD QSM 4.1 please use 8020 for total uranium istead of 200.8

XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
4	SEEP 01			2011-08-08 / 1035	MLHNA	WATER

SAMPLE COMMENTS:

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,2-9,METS,V

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-09

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

#SMPS in LOT: 10 | EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	SEEP 02			2011-08-08 / 1130	MLHNC	WATER

SAMPLE COMMENTS:

CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,2-9,METS,V

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Gutoryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 10

Date Received: 2011-08-09

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
6	A02MW110001 DISSOLVED			2011-08-08 / 910	MLHNE	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
7	A02MW090001 DISSOLVED			2011-08-08 / 1040	MLHNF	WATER

SAMPLE COMMENTS:

ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,METS

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-09

Project: 140415
Guteryl Steel
Analytical Due Date: 2011-08-17

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-19

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 10
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
8	A02MW080001 DISSOLVED			2011-08-08 / 1140	MLHNG	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Date Received: 2011-08-09

Project: 140415 | Guteryl Steel

Analytical Due Date: 2011-08-17

PO#: 697886 | Report to: Kevin Cronin

Report Due Date: 2011-08-19

Client: 522706 | Shaw Environmental & Infrastructure Inc

Report Type: B Standard Report

#SMPS In LOT: 10

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	SEEP 01			2011-08-08 / 1035	MLHNH	WATER

SAMPLE COMMENTS:

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H090504

CLIENT ANALYSIS SUMMARY

Storage Loc: R251,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-09

Analytical Due Date: 2011-08-17

Report Due Date: 2011-08-19

Report Type: B Standard Report

#SMPS in LOT: 10

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
10	SEEP 02			2011-08-08 / 1130	MLHNJ	WATER

SAMPLE COMMENTS:

MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

estAmerica St. Louis
715 Rider Trail North
th City, MO 63045
one 314.298.8566 fax 314.298.8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/08/2011	COC No: 004
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
ncinnati Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below SD			SDG No.
3) 782-4807 FAX	☐ 2 weeks			
oject Name: Former Guterl Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (a-spec)	Isotopic Uranium (a-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
2MW110001	8/8/2011	0910	Grab	GW	10	X		X	X	X	X	X	X	X				3x40	500p 1XLP500p,2x250p
2MW090001	8/8/2011	1040	Grab	GW	10	X		X	X	X	X	X	X	X				U	
2MW080001	8/8/2011	1140	Grab	GW	7	X		X	X	X	X	X	X						
p 01	8/8/2011	1035	Grab	GW	10	X		X	X	X	X	X	X	X				3x.20	
p 02	8/8/2011	1130	Grab	GW	10	X		X	X	X	X	X	X	X				U	

8-9-11

servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

sible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

cial Instructions/QC Requirements & Comments:

inquished by:	Company: Shaw E & I. Inc.	Date/Time: 8/8/11 1650	Received by:	Company: BFLO	Date/Time: 08-08-11 16:50
inquished by:	Company: BFLO	Date/Time: 08-08-11 17:15	Received by:	Company: BFLO	Date/Time: 8/8/11 1715
inquished by:	Company: BFLO	Date/Time: 8/9/11 1730	Received by:	Company: TA	Date/Time: 8/9/11 0920

TestAmerica St. Louis

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CUR Form #: 326

Lot #(s): F1H090504

TestAmerica St. Louis

CONDITION UPON RECEIPT FORM

Client: Shaw

Quote No: 89251

COC/RFA No: 004

Initiated By: AB Date: 8-9-11 Time: 0920

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*				Sample Temperature (s):**			
1.	4485 02583105	6.		1.	2	6.	
2.	3127	7.		2.	ambient	7.	
3.		8.		3.		8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Received bottles for Filtered Metals, Total-U, + Iso-U-not on COC- 1 cg per LF

Corrective Action:

Client Contact Name: _____ Informed by: _____

Sample(s) processed "as is"

Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/10/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guteryl Steel

Lot #: F1H100419

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 24, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H100419

This report contains the analytical results for the six samples received under chain of custody by TestAmerica in St. Louis on August 10, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1230013
There was insufficient sample volume to perform MS/MSD analysis. An LCS/LCSD was performed to demonstrate accuracy and replicate precision.

Affected Samples:
F1H100419 (1): MW705D0001
F1H100419 (2): MW705DD0001
F1H100419 (3): A04DMW711D0001

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1223088
The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

The MSD recovery for calcium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

Strontium was observed in the CCB above 3X the MDL. Associated samples which are either non-detect for the contaminant or exhibit concentrations greater than ten (10) times the concentrations observed in the CCB, do not require re-analysis.

Affected Samples:
F1H100419 (1): MW705D0001
F1H100419 (2): MW705DD0001
F1H100419 (3): A04DMW711D0001
F1H100419 (4): MW705D0001 DISSOLVED
F1H100419 (5): MW705DD0001 DISSOLVED
F1H100419 (6): A04DMW711D0001 DISSOLVED

Chloride (MCAWW 300.0A)

Batch: 1224136
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H100419 (1): MW705D0001
F1H100419 (2): MW705DD0001
F1H100419 (3): A04DMW711D0001

Sulfate (MCAWW 300.0A)

Batch: 1224141
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H100419 (1): MW705D0001
F1H100419 (2): MW705DD0001
F1H100419 (3): A04DMW711D0001

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1224140
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H100419 (1): MW705D0001
F1H100419 (2): MW705DD0001
F1H100419 (3): A04DMW711D0001

Nitrite as N (MCAWW 300.0A)

Batch: 1227147
The following samples were reported ND at dilution for Nitrite, due to interference with Chloride in the undiluted runs. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Samples F1H100419-001 and 002 were analyzed within 48 hour hold for Nitrite on 8/10/11, but due to a failed bracketing CCV, they were re-analyzed for Nitrite in batch 1227147 on 8/11/11, out of 48 hour hold.

Affected Samples:
F1H100419 (1): MW705D0001
F1H100419 (2): MW705DD0001
F1H100419 (3): A04DMW711D0001

Sample F1H100419-003 was analyzed upon receipt, within 48 hour hold, on 8/10/11. However, due to a failed bracketing CCV for Nitrite, this sample required re-analysis on 8/11/11. Due to mis-injection in that run, this sample was finally re-analzed on 8/12/11 for Nitrite in batch 1224151. Results are reported from the latter run, out of 48 hour hold.

Affected Samples:
F1H100419 (3): A04DMW711D0001

Total Dissolved Solids (MCAWW 160.1)

Batch: 1228283
The sample was analyzed at a dilution based on high concentrations of target analytes. The reporting limit has been adjusted accordingly.

Affected Samples:
F1H100419 (2): MW705DD0001

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H100419

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H100419

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLH8E	001	MW705D0001	08/09/11	08:35
MLH8K	002	MW705DD0001	08/09/11	09:30
MLH8M	003	A04DMW711D0001	08/09/11	14:45
MLH8P	004	MW705D0001 DISSOLVED	08/09/11	08:35
MLH8V	005	MW705DD0001 DISSOLVED	08/09/11	09:30
MLH8W	006	A04DMW711D0001 DISSOLVED	08/09/11	14:45

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001

GC/MS Volatiles

Lot-Sample #...: F1H100419-001 Work Order #...: MLH8E1AC Matrix.....: WATER
Date Sampled...: 08/09/11 08:35 Date Received..: 08/10/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 11:35
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**6.3**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**1.3 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.13 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.61 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.13 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001

GC/MS Volatiles

Lot-Sample #...: F1H100419-001 **Work Order #...:** MLH8E1AC **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
1,2-Dichloroethane-d4	107	(70 - 120)
4-Bromofluorobenzene	105	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001

TOTAL Metals

Lot-Sample #...: F1H100419-001 Matrix.....: WATER
Date Sampled...: 08/09/11 08:35 Date Received..: 08/10/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1223087						
Uranium	0.89 J	1.0	ug/L	SW846 6020A	08/11-08/13/11	MLH8E1A5
		Dilution Factor: 1		Analysis Time..: 04:21		
Prep Batch #...: 1223088						
Silver	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AF
		Dilution Factor: 1		Analysis Time..: 20:06		
Aluminum	80.3 J	200	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AG
		Dilution Factor: 1		Analysis Time..: 20:06		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AE
		Dilution Factor: 1		Analysis Time..: 20:06		
Barium	25.8 J	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AH
		Dilution Factor: 1		Analysis Time..: 20:06		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AJ
		Dilution Factor: 1		Analysis Time..: 20:06		
Calcium	125000	5000	ug/L	SW846 6010C	08/11-08/16/11	MLH8E1AK
		Dilution Factor: 5		Analysis Time..: 16:19		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AL
		Dilution Factor: 1		Analysis Time..: 20:06		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AM
		Dilution Factor: 1		Analysis Time..: 20:06		
Chromium	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AN
		Dilution Factor: 1		Analysis Time..: 20:06		
Copper	ND	25.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AP
		Dilution Factor: 1		Analysis Time..: 20:06		
Iron	48.2 J	100	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AQ
		Dilution Factor: 1		Analysis Time..: 20:06		
Magnesium	31000	1000	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AR
		Dilution Factor: 1		Analysis Time..: 14:27		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001

TOTAL Metals

Lot-Sample #...: F1H100419-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**9.5 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8E1AT**
		Dilution Factor: 1		Analysis Time..: 20:06		
Sodium	**174000**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8E1AU**
		Dilution Factor: 5		Analysis Time..: 16:19		
Nickel	ND	40.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AV
		Dilution Factor: 1		Analysis Time..: 20:06		
Lead	ND	10.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8E1AW
		Dilution Factor: 1		Analysis Time..: 22:17		
Antimony	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1AX
		Dilution Factor: 1		Analysis Time..: 20:06		
Selenium	ND	15.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8E1A0
		Dilution Factor: 1		Analysis Time..: 22:17		
Strontium	**1680**	**25.0**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8E1A1**
		Dilution Factor: 5		Analysis Time..: 16:19		
Thallium	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1A2
		Dilution Factor: 1		Analysis Time..: 20:06		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1A3
		Dilution Factor: 1		Analysis Time..: 20:06		
Zinc	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8E1A4
		Dilution Factor: 1		Analysis Time..: 20:06		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001

General Chemistry

Lot-Sample #...: F1H100419-001 Work Order #...: MLH8E Matrix.....: WATER
Date Sampled...: 08/09/11 08:35 Date Received..: 08/10/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	108	20.0	mg/L	MCAWW 300.0A	08/10/11	1224136
		Dilution Factor: 100		Analysis Time..: 05:20		
Fluoride	0.44	0.10	mg/L	MCAWW 300.0A	08/10/11	1224137
		Dilution Factor: 1		Analysis Time..: 04:51		
Nitrate	0.012 B	0.020	mg/L	MCAWW 300.0A	08/10/11	1224138
		Dilution Factor: 1		Analysis Time..: 04:51		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1227147
		Dilution Factor: 10		Analysis Time..: 03:14		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/10/11	1224140
		Dilution Factor: 1		Analysis Time..: 04:51		
Sulfate	748	50.0	mg/L	MCAWW 300.0A	08/10/11	1224141
		Dilution Factor: 100		Analysis Time..: 05:20		
Total Alkalinity	184	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1550	10.0	mg/L	MCAWW 160.1	08/16-08/18/11	1228283
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001

GC/MS Volatiles

Lot-Sample #...: F1H100419-002 Work Order #...: MLH8K1AN Matrix.....: WATER
Date Sampled...: 08/09/11 09:30 Date Received..: 08/10/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 12:02
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	**0.50 J**	**1.0**	**ug/L**
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**4.4**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.71 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	**0.76 J**	**1.0**	**ug/L**
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.82 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**2.1**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	**4.2 J**	**5.0**	**ug/L**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001

GC/MS Volatiles

Lot-Sample #...: F1H100419-002 Work Order #...: MLH8K1AN Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	111	(85 - 120)
Dibromofluoromethane	107	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	103	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001

TOTAL Metals

Lot-Sample #...: F1H100419-002 **Matrix.....:** WATER
Date Sampled...: 08/09/11 09:30 **Date Received..:** 08/10/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1223087						
Uranium	**1.7**	**1.0**	**ug/L**	**SW846 6020A**	**08/11-08/13/11**	**MLH8K1AG**
		Dilution Factor: 1		Analysis Time..: 04:49		
Prep Batch #...: 1223088						
Silver	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AR
		Dilution Factor: 1		Analysis Time..: 20:31		
Aluminum	ND	200	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AT
		Dilution Factor: 1		Analysis Time..: 20:31		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AQ
		Dilution Factor: 1		Analysis Time..: 20:31		
Barium	**24.7 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8K1AU**
		Dilution Factor: 1		Analysis Time..: 20:31		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AV
		Dilution Factor: 1		Analysis Time..: 20:31		
Calcium	**531000**	**20000**	**ug/L**	**SW846 6010C**	**08/11-08/17/11**	**MLH8K1AW**
		Dilution Factor: 20		Analysis Time..: 09:02		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AX
		Dilution Factor: 1		Analysis Time..: 20:31		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1A0
		Dilution Factor: 1		Analysis Time..: 20:31		
Chromium	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1A1
		Dilution Factor: 1		Analysis Time..: 20:31		
Copper	ND	25.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1A2
		Dilution Factor: 1		Analysis Time..: 20:31		
Iron	**36.1 J**	**100**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8K1A3**
		Dilution Factor: 1		Analysis Time..: 20:31		
Magnesium	**287000**	**10000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8K1A4**
		Dilution Factor: 10		Analysis Time..: 16:44		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001

TOTAL Metals

Lot-Sample #...: F1H100419-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**14.5 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8K1A5**
		Dilution Factor: 1		Analysis Time..: 20:31		
Sodium	**983000**	**10000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8K1A6**
		Dilution Factor: 10		Analysis Time..: 16:44		
Nickel	ND	40.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1A7
		Dilution Factor: 1		Analysis Time..: 20:31		
Lead	ND	10.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8K1A8
		Dilution Factor: 1		Analysis Time..: 22:43		
Antimony	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1A9
		Dilution Factor: 1		Analysis Time..: 20:31		
Selenium	ND	15.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8K1AA
		Dilution Factor: 1		Analysis Time..: 22:43		
Strontium	**13500**	**100**	**ug/L**	**SW846 6010C**	**08/11-08/17/11**	**MLH8K1AC**
		Dilution Factor: 20		Analysis Time..: 09:02		
Thallium	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AD
		Dilution Factor: 1		Analysis Time..: 20:31		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AE
		Dilution Factor: 1		Analysis Time..: 20:31		
Zinc	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8K1AF
		Dilution Factor: 1		Analysis Time..: 20:31		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001

General Chemistry

Lot-Sample #...: F1H100419-002 Work Order #...: MLH8K Matrix.....: WATER
Date Sampled...: 08/09/11 09:30 Date Received..: 08/10/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	2180	200	mg/L	MCAWW 300.0A	08/12/11	1227150
		Dilution Factor: 1000		Analysis Time..: 04:41		
Fluoride	ND	0.10	mg/L	MCAWW 300.0A	08/10/11	1224137
		Dilution Factor: 1		Analysis Time..: 07:01		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/10/11	1224138
		Dilution Factor: 1		Analysis Time..: 07:01		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1227147
		Dilution Factor: 10		Analysis Time..: 04:26		
Phosphate as P, Ortho	0.13 B	0.50	mg/L	MCAWW 300.0A	08/10/11	1224140
		Dilution Factor: 1		Analysis Time..: 07:01		
Sulfate	1850	50.0	mg/L	MCAWW 300.0A	08/10/11	1224141
		Dilution Factor: 100		Analysis Time..: 07:58		
Total Alkalinity	159	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	6720	100	mg/L	MCAWW 160.1	08/16-08/18/11	1228283
		Dilution Factor: 10		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001

GC/MS Volatiles

Lot-Sample #...: F1H100419-003 Work Order #...: MLH8M1AN Matrix.....: WATER
Date Sampled...: 08/09/11 14:45 Date Received..: 08/10/11
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 12:28
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**12**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.62 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**2.8**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**0.31 J**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**0.77 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.69 J,B**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.12 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	**0.74 J**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**0.83 J**	**1.0**	**ug/L**
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001

GC/MS Volatiles

Lot-Sample #...: F1H100419-003 **Work Order #...:** MLH8M1AN **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	107	(85 - 115)
1,2-Dichloroethane-d4	102	(70 - 120)
4-Bromofluorobenzene	117	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001

TOTAL Metals

Lot-Sample #...: F1H100419-003 Matrix.....: WATER
Date Sampled...: 08/09/11 14:45 Date Received..: 08/10/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1223087						
Uranium	**9.0**	**1.0**	**ug/L**	**SW846 6020A**	**08/11-08/13/11**	**MLH8M1AG**
		Dilution Factor: 1		Analysis Time..: 05:04		
Prep Batch #...: 1223088						
Silver	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AR
		Dilution Factor: 1		Analysis Time..: 20:44		
Aluminum	ND	200	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AT
		Dilution Factor: 1		Analysis Time..: 20:44		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AQ
		Dilution Factor: 1		Analysis Time..: 20:44		
Barium	**53.3**	**50.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8M1AU**
		Dilution Factor: 1		Analysis Time..: 20:44		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AV
		Dilution Factor: 1		Analysis Time..: 20:44		
Calcium	**120000**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8M1AW**
		Dilution Factor: 5		Analysis Time..: 16:57		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AX
		Dilution Factor: 1		Analysis Time..: 20:44		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1A0
		Dilution Factor: 1		Analysis Time..: 20:44		
Chromium	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1A1
		Dilution Factor: 1		Analysis Time..: 20:44		
Copper	**121**	**25.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8M1A2**
		Dilution Factor: 1		Analysis Time..: 20:44		
Iron	**93.2 J**	**100**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8M1A3**
		Dilution Factor: 1		Analysis Time..: 20:44		
Magnesium	**39100**	**1000**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8M1A4**
		Dilution Factor: 1		Analysis Time..: 15:05		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001

TOTAL Metals

Lot-Sample #...: F1H100419-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**55.7**	**15.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8M1A5**
		Dilution Factor: 1		Analysis Time..: 20:44		
Sodium	**165000**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8M1A6**
		Dilution Factor: 5		Analysis Time..: 16:57		
Nickel	ND	40.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1A7
		Dilution Factor: 1		Analysis Time..: 20:44		
Lead	ND	10.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8M1A8
		Dilution Factor: 1		Analysis Time..: 22:56		
Antimony	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1A9
		Dilution Factor: 1		Analysis Time..: 20:44		
Selenium	ND	15.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8M1AA
		Dilution Factor: 1		Analysis Time..: 22:56		
Strontium	**615**	**25.0**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8M1AC**
		Dilution Factor: 5		Analysis Time..: 16:57		
Thallium	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AD
		Dilution Factor: 1		Analysis Time..: 20:44		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AE
		Dilution Factor: 1		Analysis Time..: 20:44		
Zinc	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8M1AF
		Dilution Factor: 1		Analysis Time..: 20:44		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001

General Chemistry

Lot-Sample #...: F1H100419-003 Work Order #...: MLH8M Matrix.....: WATER
Date Sampled...: 08/09/11 14:45 Date Received..: 08/10/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	199	20.0	mg/L	MCAWW 300.0A	08/10/11	1224136
		Dilution Factor: 100		Analysis Time..: 08:41		
Fluoride	0.62	0.10	mg/L	MCAWW 300.0A	08/10/11	1224137
		Dilution Factor: 1		Analysis Time..: 08:13		
Nitrate	0.0086 B	0.020	mg/L	MCAWW 300.0A	08/10/11	1224138
		Dilution Factor: 1		Analysis Time..: 08:13		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 10		Analysis Time..: 11:32		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/10/11	1224140
		Dilution Factor: 1		Analysis Time..: 08:13		
Sulfate	150	5.0	mg/L	MCAWW 300.0A	08/10/11	1224141
		Dilution Factor: 10		Analysis Time..: 08:27		
Total Alkalinity	302	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	936	10.0	mg/L	MCAWW 160.1	08/16-08/18/11	1228283
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H100419-004 **Matrix.....:** WATER
Date Sampled...: 08/09/11 08:35 **Date Received..:** 08/10/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1223087						
Uranium	**2.8**	**1.0**	**ug/L**	**SW846 6020A**	**08/11-08/13/11**	**MLH8P1A2**
		Dilution Factor: 1		Analysis Time..: 05:11		
Prep Batch #...: 1223088						
Silver	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AC
		Dilution Factor: 1		Analysis Time..: 20:51		
Aluminum	ND	200	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AD
		Dilution Factor: 1		Analysis Time..: 20:51		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AA
		Dilution Factor: 1		Analysis Time..: 20:51		
Barium	**26.9 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8P1AE**
		Dilution Factor: 1		Analysis Time..: 20:51		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AF
		Dilution Factor: 1		Analysis Time..: 20:51		
Calcium	**94200**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8P1AG**
		Dilution Factor: 5		Analysis Time..: 17:03		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AH
		Dilution Factor: 1		Analysis Time..: 20:51		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AJ
		Dilution Factor: 1		Analysis Time..: 20:51		
Chromium	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AK
		Dilution Factor: 1		Analysis Time..: 20:51		
Copper	ND	25.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AL
		Dilution Factor: 1		Analysis Time..: 20:51		
Iron	ND	100	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AM
		Dilution Factor: 1		Analysis Time..: 20:51		
Magnesium	**35200**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8P1AN**
		Dilution Factor: 5		Analysis Time..: 17:03		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H100419-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**20.6**	**15.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8P1AP**
		Dilution Factor: 1		Analysis Time..: 20:51		
Sodium	**194000**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8P1AQ**
		Dilution Factor: 5		Analysis Time..: 17:03		
Nickel	ND	40.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AR
		Dilution Factor: 1		Analysis Time..: 20:51		
Lead	ND	10.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8P1AT
		Dilution Factor: 1		Analysis Time..: 23:02		
Antimony	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AU
		Dilution Factor: 1		Analysis Time..: 20:51		
Selenium	ND	15.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8P1AV
		Dilution Factor: 1		Analysis Time..: 23:02		
Strontium	**1310**	**25.0**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8P1AW**
		Dilution Factor: 5		Analysis Time..: 17:03		
Thallium	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1AX
		Dilution Factor: 1		Analysis Time..: 20:51		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1A0
		Dilution Factor: 1		Analysis Time..: 20:51		
Zinc	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8P1A1
		Dilution Factor: 1		Analysis Time..: 20:51		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H100419-005 **Matrix.....:** WATER
Date Sampled...: 08/09/11 09:30 **Date Received..:** 08/10/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1223087						
Uranium	**0.37 J**	**1.0**	**ug/L**	**SW846 6020A**	**08/11-08/15/11**	**MLH8V1AD**
		Dilution Factor: 1		Analysis Time..: 23:52		
Prep Batch #...: 1223088						
Silver	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AG
		Dilution Factor: 1		Analysis Time..: 21:10		
Aluminum	ND	200	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AH
		Dilution Factor: 1		Analysis Time..: 21:10		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AF
		Dilution Factor: 1		Analysis Time..: 21:10		
Barium	**23.9 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8V1AJ**
		Dilution Factor: 1		Analysis Time..: 21:10		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AK
		Dilution Factor: 1		Analysis Time..: 21:10		
Calcium	**372000**	**10000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8V1AL**
		Dilution Factor: 10		Analysis Time..: 17:22		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AM
		Dilution Factor: 1		Analysis Time..: 21:10		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AN
		Dilution Factor: 1		Analysis Time..: 21:10		
Chromium	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AP
		Dilution Factor: 1		Analysis Time..: 21:10		
Copper	ND	25.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AQ
		Dilution Factor: 1		Analysis Time..: 21:10		
Iron	ND	100	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AR
		Dilution Factor: 1		Analysis Time..: 21:10		
Magnesium	**234000**	**10000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8V1AT**
		Dilution Factor: 10		Analysis Time..: 17:22		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H100419-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	ND	15.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AU
		Dilution Factor: 1		Analysis Time..: 21:10		
Sodium	**449000**	**10000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8V1AV**
		Dilution Factor: 10		Analysis Time..: 17:22		
Nickel	ND	40.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AW
		Dilution Factor: 1		Analysis Time..: 21:10		
Lead	ND	10.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8V1AX
		Dilution Factor: 1		Analysis Time..: 23:22		
Antimony	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1A0
		Dilution Factor: 1		Analysis Time..: 21:10		
Selenium	ND	15.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8V1A1
		Dilution Factor: 1		Analysis Time..: 23:22		
Strontium	**8860**	**50.0**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8V1A2**
		Dilution Factor: 10		Analysis Time..: 17:22		
Thallium	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1A3
		Dilution Factor: 1		Analysis Time..: 21:10		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AA
		Dilution Factor: 1		Analysis Time..: 21:10		
Zinc	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8V1AC
		Dilution Factor: 1		Analysis Time..: 21:10		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H100419-006 Matrix.....: WATER
Date Sampled...: 08/09/11 14:45 Date Received..: 08/10/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1223087						
Uranium	**7.4**	**1.0**	**ug/L**	**SW846 6020A**	**08/11-08/15/11**	**MLH8W1AH**
		Dilution Factor: 1		Analysis Time..: 23:59		
Prep Batch #...: 1223088						
Silver	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AL
		Dilution Factor: 1		Analysis Time..: 21:17		
Aluminum	ND	200	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AM
		Dilution Factor: 1		Analysis Time..: 21:17		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AK
		Dilution Factor: 1		Analysis Time..: 21:17		
Barium	**56.0**	**50.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8W1AN**
		Dilution Factor: 1		Analysis Time..: 21:17		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AP
		Dilution Factor: 1		Analysis Time..: 21:17		
Calcium	**118000**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8W1AQ**
		Dilution Factor: 5		Analysis Time..: 17:28		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AR
		Dilution Factor: 1		Analysis Time..: 21:17		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AT
		Dilution Factor: 1		Analysis Time..: 21:17		
Chromium	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AU
		Dilution Factor: 1		Analysis Time..: 21:17		
Copper	**104**	**25.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8W1AV**
		Dilution Factor: 1		Analysis Time..: 21:17		
Iron	**33.8 J**	**100**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8W1AW**
		Dilution Factor: 1		Analysis Time..: 21:17		
Magnesium	**38900**	**1000**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8W1AX**
		Dilution Factor: 1		Analysis Time..: 15:36		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H100419-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**59.6**	**15.0**	**ug/L**	**SW846 6010C**	**08/11-08/12/11**	**MLH8W1A0**
		Dilution Factor: 1		Analysis Time..: 21:17		
Sodium	**164000**	**5000**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8W1A1**
		Dilution Factor: 5		Analysis Time..: 17:28		
Nickel	ND	40.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1A2
		Dilution Factor: 1		Analysis Time..: 21:17		
Lead	ND	10.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8W1A3
		Dilution Factor: 1		Analysis Time..: 23:28		
Antimony	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AA
		Dilution Factor: 1		Analysis Time..: 21:17		
Selenium	ND	15.0	ug/L	SW846 6010C	08/11-08/16/11	MLH8W1AC
		Dilution Factor: 1		Analysis Time..: 23:28		
Strontium	**572**	**25.0**	**ug/L**	**SW846 6010C**	**08/11-08/16/11**	**MLH8W1AD**
		Dilution Factor: 5		Analysis Time..: 17:28		
Thallium	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AE
		Dilution Factor: 1		Analysis Time..: 21:17		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AF
		Dilution Factor: 1		Analysis Time..: 21:17		
Zinc	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLH8W1AG
		Dilution Factor: 1		Analysis Time..: 21:17		

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H100419 **Work Order #...:** MLRLL1AA **Matrix.....:** WATER
MB Lot-Sample #: F1H180000-013

Prep Date.....: 08/17/11 **Analysis Time..:** 10:16
Analysis Date..: 08/17/11 **Prep Batch #...:** 1230013
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	**0.28 J**	**1.0**	**ug/L**	**SW846 8260B**
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	103	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H100419 Work Order #...: MLRLL1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	102	(70 - 120)		
4-Bromofluorobenzene	101	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H110000-087 **Prep Batch #...:** 1223087						
Uranium	ND	1.0	ug/L	SW846 6020A	08/11-08/13/11	MLJ8A1AA
		Dilution Factor: 1				
		Analysis Time..: 04:07				
MB Lot-Sample #: F1H110000-088 **Prep Batch #...:** 1223088						
Aluminum	ND	200	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AD
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Antimony	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AU
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AA
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Barium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AE
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AF
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AH
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Calcium	ND	1000	ug/L	SW846 6010C	08/11-08/16/11	MLJ8D1AG
		Dilution Factor: 1				
		Analysis Time..: 16:06				
Chromium	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AK
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AJ
		Dilution Factor: 1				
		Analysis Time..: 19:53				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AL
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Iron	ND	100	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AM
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Lead	ND	10.0	ug/L	SW846 6010C	08/11-08/16/11	MLJ8D1AT
		Dilution Factor: 1				
		Analysis Time..: 22:04				
Magnesium	ND	1000	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AN
		Dilution Factor: 1				
		Analysis Time..: 14:14				
Manganese	ND	15.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AP
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Nickel	ND	40.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AR
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Selenium	ND	15.0	ug/L	SW846 6010C	08/11-08/16/11	MLJ8D1AV
		Dilution Factor: 1				
		Analysis Time..: 22:04				
Silver	ND	10.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AC
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Sodium	ND	1000	ug/L	SW846 6010C	08/11-08/16/11	MLJ8D1AQ
		Dilution Factor: 1				
		Analysis Time..: 16:06				
Strontium	ND	5.0	ug/L	SW846 6010C	08/11-08/16/11	MLJ8D1AW
		Dilution Factor: 1				
		Analysis Time..: 16:06				
Thallium	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1AX
		Dilution Factor: 1				
		Analysis Time..: 19:53				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1A0
		Dilution Factor: 1				
		Analysis Time..: 19:53				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/11-08/12/11	MLJ8D1A1

Dilution Factor: 1
Analysis Time..: 19:53

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLPPW1AA		MB Lot-Sample #:	F1H120000-136	
	ND	0.20	mg/L	MCAWW 300.0A	08/10/11	1224136
		Dilution Factor: 1				
		Analysis Time..: 04:36				
Chloride		Work Order #: MLPTM1AA		MB Lot-Sample #:	F1H150000-150	
	ND	0.20	mg/L	MCAWW 300.0A	08/11/11	1227150
		Dilution Factor: 1				
		Analysis Time..: 07:04				
Fluoride		Work Order #: MLPP01AA		MB Lot-Sample #:	F1H120000-137	
	ND	0.10	mg/L	MCAWW 300.0A	08/10/11	1224137
		Dilution Factor: 1				
		Analysis Time..: 04:36				
Nitrate		Work Order #: MLPP21AA		MB Lot-Sample #:	F1H120000-138	
	ND	0.020	mg/L	MCAWW 300.0A	08/10/11	1224138
		Dilution Factor: 1				
		Analysis Time..: 04:36				
Nitrite		Work Order #: MLPTL1AA		MB Lot-Sample #:	F1H150000-147	
	ND	0.020	mg/L	MCAWW 300.0A	08/11/11	1227147
		Dilution Factor: 1				
		Analysis Time..: 07:04				
Nitrite		Work Order #: MLTCL1AA		MB Lot-Sample #:	F1H120000-151	
	ND	0.020	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Phosphate as P, Ortho		Work Order #: MLPP71AA		MB Lot-Sample #:	F1H120000-140	
	ND	0.50	mg/L	MCAWW 300.0A	08/10/11	1224140
		Dilution Factor: 1				
		Analysis Time..: 04:36				
Sulfate		Work Order #: MLPP91AA		MB Lot-Sample #:	F1H120000-141	
	ND	0.50	mg/L	MCAWW 300.0A	08/10/11	1224141
		Dilution Factor: 1				
		Analysis Time..: 04:36				
Total Alkalinity		Work Order #: MLRFM1AA		MB Lot-Sample #:	F1H170000-090	
	ND	5.0	mg/L	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1				
		Analysis Time..: 00:00				

(Continued on next page)

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids		Work Order #: MLTMD1AA		MB Lot-Sample #: F1H160000-283		
	ND	10.0	mg/L	MCAWW 160.1	08/16-08/18/11	1228283
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H100419 Work Order #...: MLRLL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: F1H180000-013 MLRLL1AD-LCSD
Prep Date.....: 08/17/11 Analysis Date..: 08/17/11
Prep Batch #...: 1230013 Analysis Time..: 09:23
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	103	(70 - 130)			SW846 8260B
	104	(70 - 130)	0.58	(0-20)	SW846 8260B
Dibromochloromethane	102	(60 - 135)			SW846 8260B
	102	(60 - 135)	0.88	(0-20)	SW846 8260B
Vinyl chloride	94	(50 - 145)			SW846 8260B
	88	(50 - 145)	5.7	(0-20)	SW846 8260B
Bromomethane	106	(30 - 145)			SW846 8260B
	103	(30 - 145)	2.5	(0-20)	SW846 8260B
Chloroethane	94	(60 - 135)			SW846 8260B
	92	(60 - 135)	2.1	(0-20)	SW846 8260B
Acetone	92	(40 - 140)			SW846 8260B
	98	(40 - 140)	6.2	(0-20)	SW846 8260B
1,1-Dichloroethene	104	(70 - 130)			SW846 8260B
	104	(70 - 130)	0.19	(0-20)	SW846 8260B
Methylene chloride	91	(55 - 140)			SW846 8260B
	95	(55 - 140)	4.8	(0-20)	SW846 8260B
Carbon disulfide	98	(35 - 160)			SW846 8260B
	95	(35 - 160)	3.2	(0-20)	SW846 8260B
1,1-Dichloroethane	96	(70 - 135)			SW846 8260B
	95	(70 - 135)	0.38	(0-20)	SW846 8260B
2-Butanone	89	(30 - 150)			SW846 8260B
	94	(30 - 150)	5.9	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	98	(85 - 115)			SW846 8260B
	98	(85 - 115)	0.15	(0-20)	SW846 8260B
Chloroform	93	(65 - 135)			SW846 8260B
	96	(65 - 135)	3.2	(0-20)	SW846 8260B
1,1,1-Trichloroethane	101	(65 - 130)			SW846 8260B
	104	(65 - 130)	3.1	(0-20)	SW846 8260B
Carbon tetrachloride	103	(65 - 140)			SW846 8260B
	103	(65 - 140)	0.090	(0-20)	SW846 8260B
1,2-Dichloroethane	94	(70 - 130)			SW846 8260B
	97	(70 - 130)	2.9	(0-20)	SW846 8260B
Benzene	99	(80 - 120)			SW846 8260B
	99	(80 - 120)	0.14	(0-20)	SW846 8260B
Trichloroethene	93	(70 - 125)			SW846 8260B
	94	(70 - 125)	1.1	(0-20)	SW846 8260B
1,2-Dichloropropane	95	(75 - 125)			SW846 8260B
	95	(75 - 125)	0.37	(0-20)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H100419 Work Order #...: MLRLL1AC-LCS Matrix.....: WATER
LCS Lot-Sample#: F1H180000-013 MLRLL1AD-LCSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	98	(75 - 120)			SW846 8260B
	98	(75 - 120)	0.070	(0-20)	SW846 8260B
1,1,2-Trichloroethane	95	(75 - 125)			SW846 8260B
	100	(75 - 125)	5.0	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	105	(55 - 140)			SW846 8260B
	104	(55 - 140)	1.2	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	106	(75 - 120)	0.28	(0-20)	SW846 8260B
1,3-Dichlorobenzene	101	(75 - 125)			SW846 8260B
	102	(75 - 125)	0.78	(0-20)	SW846 8260B
1,4-Dichlorobenzene	96	(75 - 125)			SW846 8260B
	97	(75 - 125)	0.88	(0-20)	SW846 8260B
2-Hexanone	89	(55 - 130)			SW846 8260B
	88	(55 - 130)	1.3	(0-20)	SW846 8260B
4-Methyl-2-pentanone	96	(60 - 135)			SW846 8260B
	100	(60 - 135)	3.9	(0-20)	SW846 8260B
Chlorobenzene	98	(80 - 120)			SW846 8260B
	98	(80 - 120)	0.37	(0-20)	SW846 8260B
Bromoform	104	(70 - 130)			SW846 8260B
	108	(70 - 130)	3.6	(0-20)	SW846 8260B
Ethylbenzene	105	(75 - 125)			SW846 8260B
	105	(75 - 125)	0.47	(0-20)	SW846 8260B
Styrene	111	(65 - 135)			SW846 8260B
	111	(65 - 135)	0.090	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	92	(65 - 130)			SW846 8260B
	96	(65 - 130)	4.1	(0-20)	SW846 8260B
Tetrachloroethene	105	(45 - 150)			SW846 8260B
	102	(45 - 150)	3.2	(0-20)	SW846 8260B
1,2-Dichlorobenzene	98	(70 - 120)			SW846 8260B
	102	(70 - 120)	3.8	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
	111	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
	107	(85 - 115)
1,2-Dichloroethane-d4	97	(70 - 120)
	102	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)
	101	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H110000-087 **Prep Batch #...:** 1223087					
Uranium	108	(80 - 120)	SW846 6020A	08/11-08/13/11	MLJ8A1AC
		Dilution Factor: 1		Analysis Time..: 04:14	
LCS Lot-Sample#: F1H110000-088 **Prep Batch #...:** 1223088					
Arsenic	103	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1A2
		Dilution Factor: 1		Analysis Time..: 19:59	
Silver	93	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1A3
		Dilution Factor: 1		Analysis Time..: 19:59	
Aluminum	102	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1A4
		Dilution Factor: 1		Analysis Time..: 19:59	
Barium	107	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1A5
		Dilution Factor: 1		Analysis Time..: 19:59	
Beryllium	112	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1A6
		Dilution Factor: 1		Analysis Time..: 19:59	
Calcium	104	(80 - 120)	SW846 6010C	08/11-08/16/11	MLJ8D1A7
		Dilution Factor: 1		Analysis Time..: 16:13	
Cadmium	105	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1A8
		Dilution Factor: 1		Analysis Time..: 19:59	
Cobalt	102	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1A9
		Dilution Factor: 1		Analysis Time..: 19:59	
Chromium	103	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CA
		Dilution Factor: 1		Analysis Time..: 19:59	
Copper	102	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CC
		Dilution Factor: 1		Analysis Time..: 19:59	
Iron	106	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CD
		Dilution Factor: 1		Analysis Time..: 19:59	
Magnesium	100	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CE
		Dilution Factor: 1		Analysis Time..: 14:21	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	105	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CF
		Dilution Factor: 1	Analysis Time..: 19:59		
Sodium	103	(80 - 120)	SW846 6010C	08/11-08/16/11	MLJ8D1CG
		Dilution Factor: 1	Analysis Time..: 16:13		
Nickel	102	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CH
		Dilution Factor: 1	Analysis Time..: 19:59		
Lead	102	(80 - 120)	SW846 6010C	08/11-08/16/11	MLJ8D1CJ
		Dilution Factor: 1	Analysis Time..: 22:11		
Antimony	105	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CK
		Dilution Factor: 1	Analysis Time..: 19:59		
Selenium	106	(80 - 120)	SW846 6010C	08/11-08/16/11	MLJ8D1CL
		Dilution Factor: 1	Analysis Time..: 22:11		
Strontium	100	(80 - 120)	SW846 6010C	08/11-08/16/11	MLJ8D1CM
		Dilution Factor: 1	Analysis Time..: 16:13		
Thallium	100	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CN
		Dilution Factor: 1	Analysis Time..: 19:59		
Vanadium	103	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CP
		Dilution Factor: 1	Analysis Time..: 19:59		
Zinc	111	(80 - 120)	SW846 6010C	08/11-08/12/11	MLJ8D1CQ
		Dilution Factor: 1	Analysis Time..: 19:59		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLPPW1AC	LCS Lot-Sample#: F1H120000-136		
	93	(90 - 110)	MCAWW 300.0A	08/10/11	1224136
		Dilution Factor: 1	Analysis Time..: 04:22		
Chloride		Work Order #: MLPTM1AC	LCS Lot-Sample#: F1H150000-150		
	92	(90 - 110)	MCAWW 300.0A	08/11/11	1227150
		Dilution Factor: 1	Analysis Time..: 06:49		
Fluoride		Work Order #: MLPP01AC	LCS Lot-Sample#: F1H120000-137		
	95	(90 - 110)	MCAWW 300.0A	08/10/11	1224137
		Dilution Factor: 1	Analysis Time..: 04:22		
Nitrate		Work Order #: MLPP21AC	LCS Lot-Sample#: F1H120000-138		
	94	(90 - 110)	MCAWW 300.0A	08/10/11	1224138
		Dilution Factor: 1	Analysis Time..: 04:22		
Nitrite		Work Order #: MLTCL1AC	LCS Lot-Sample#: F1H120000-151		
	97	(90 - 110)	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 1	Analysis Time..: 04:05		
Nitrite		Work Order #: MLPTL1AC	LCS Lot-Sample#: F1H150000-147		
	96	(90 - 110)	MCAWW 300.0A	08/11/11	1227147
		Dilution Factor: 1	Analysis Time..: 06:49		
Phosphate as P, Ortho		Work Order #: MLPP71AC	LCS Lot-Sample#: F1H120000-140		
	97	(90 - 110)	MCAWW 300.0A	08/10/11	1224140
		Dilution Factor: 1	Analysis Time..: 04:22		
Sulfate		Work Order #: MLPP91AC	LCS Lot-Sample#: F1H120000-141		
	94	(90 - 110)	MCAWW 300.0A	08/10/11	1224141
		Dilution Factor: 1	Analysis Time..: 04:22		
Total Alkalinity		Work Order #: MLRFM1AC	LCS Lot-Sample#: F1H170000-090		
	92	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLRFM1AD	LCS Lot-Sample#: F1H170000-090		
	93	(90 - 110)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids		Work Order #: MLTMD1AC	LCS Lot-Sample#: F1H160000-283		
	99	(90 - 113)	MCAWW 160.1	08/16-08/18/11	1228283
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER
Date Sampled...: 08/09/11 08:35 **Date Received..:** 08/10/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H100419-001 **Prep Batch #...:** 1223087							
Uranium	112	(80 - 120)			SW846 6020A	08/11-08/13/11	MLH8E1CG
	113	(80 - 120)	0.47	(0-20)	SW846 6020A	08/11-08/13/11	MLH8E1CH
		Dilution Factor: 1					
		Analysis Time..: 04:35					
MS Lot-Sample #: F1H100419-001 **Prep Batch #...:** 1223088							
Aluminum	104	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1CN
	104	(80 - 120)	0.11	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1CP
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Antimony	104	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1DL
	103	(80 - 120)	0.71	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1DM
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Arsenic	105	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1CJ
	104	(80 - 120)	1.2	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1CK
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Barium	103	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1CQ
	104	(80 - 120)	1.8	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1CR
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Beryllium	108	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1CT
	110	(80 - 120)	2.6	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1CU
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Cadmium	101	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1CX
	99	(80 - 120)	1.5	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1C0
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Calcium	180 N	(80 - 120)			SW846 6010C	08/11-08/16/11	MLH8E1CV
	130 N	(80 - 120)	3.6	(0-20)	SW846 6010C	08/11-08/16/11	MLH8E1CW
		Dilution Factor: 5					
		Analysis Time..: 16:25					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER
Date Sampled...: 08/09/11 08:35 **Date Received..:** 08/10/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	98	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1C3
	99	(80 - 120)	0.73	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1C4
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Cobalt	98	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1C1
	98	(80 - 120)	0.04	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1C2
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Copper	100	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1C5
	101	(80 - 120)	0.91	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1C6
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Iron	101	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1C7
	102	(80 - 120)	0.47	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1C8
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Lead	97	(80 - 120)			SW846 6010C	08/11-08/16/11	MLH8E1DJ
	97	(80 - 120)	0.23	(0-20)	SW846 6010C	08/11-08/16/11	MLH8E1DK
		Dilution Factor: 1					
		Analysis Time..: 22:24					
Magnesium	101	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1C9
	103	(80 - 120)	0.58	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1DA
		Dilution Factor: 1					
		Analysis Time..: 14:33					
Manganese	101	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1DC
	102	(80 - 120)	1.2	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1DD
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Nickel	98	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1DG
	97	(80 - 120)	1.7	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1DH
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Selenium	83	(80 - 120)			SW846 6010C	08/11-08/16/11	MLH8E1DN
	83	(80 - 120)	0.73	(0-20)	SW846 6010C	08/11-08/16/11	MLH8E1DP
		Dilution Factor: 1					
		Analysis Time..: 22:24					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H100419 **Matrix.....:** WATER
Date Sampled...: 08/09/11 08:35 **Date Received..:** 08/10/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	92	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1CL
	92	(80 - 120)	0.08	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1CM
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Sodium	200 N	(80 - 120)			SW846 6010C	08/11-08/16/11	MLH8E1DE
	137 N	(80 - 120)	3.3	(0-20)	SW846 6010C	08/11-08/16/11	MLH8E1DF
		Dilution Factor: 5					
		Analysis Time..: 16:25					
Strontium	117	(80 - 120)			SW846 6010C	08/11-08/16/11	MLH8E1DQ
	110	(80 - 120)	2.3	(0-20)	SW846 6010C	08/11-08/16/11	MLH8E1DR
		Dilution Factor: 5					
		Analysis Time..: 16:25					
Thallium	96	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1DT
	94	(80 - 120)	1.7	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1DU
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Vanadium	100	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1DV
	102	(80 - 120)	1.3	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1DW
		Dilution Factor: 1					
		Analysis Time..: 20:12					
Zinc	111	(80 - 120)			SW846 6010C	08/11-08/12/11	MLH8E1DX
	109	(80 - 120)	2.2	(0-20)	SW846 6010C	08/11-08/12/11	MLH8E1D0
		Dilution Factor: 1					
		Analysis Time..: 20:12					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 **Matrix.....:** WATER
Date Sampled...: 08/09/11 08:35 **Date Received..:** 08/10/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLH8E1D1		MS Lot-Sample #: F1H100419-001	
	95	(90 - 110)	MCAWW 300.0A	08/10/11	1224136
		Dilution Factor: 100	Analysis Time..: 05:20		
Chloride		Work Order #...: MLH8K1CG		MS Lot-Sample #: F1H100419-002	
	103	(90 - 110)	MCAWW 300.0A	08/12/11	1227150
		Dilution Factor: 1000	Analysis Time..: 04:41		
Fluoride		Work Order #...: MLH8E1D3		MS Lot-Sample #: F1H100419-001	
	95	(90 - 110)	MCAWW 300.0A	08/10/11	1224137
		Dilution Factor: 1	Analysis Time..: 04:51		
Nitrate		Work Order #...: MLH8E1D5		MS Lot-Sample #: F1H100419-001	
	106	(90 - 110)	MCAWW 300.0A	08/10/11	1224138
		Dilution Factor: 1	Analysis Time..: 04:51		
Nitrite		Work Order #...: MLH8E1EE		MS Lot-Sample #: F1H100419-001	
	80 N	(90 - 110)	MCAWW 300.0A	08/12/11	1227147
		Dilution Factor: 10	Analysis Time..: 03:14		
Nitrite		Work Order #...: MLLN11CN		MS Lot-Sample #: F1H120447-006	
	71 N	(90 - 110)	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 5	Analysis Time..: 04:49		
Phosphate as P, Ortho		Work Order #...: MLH8E1D9		MS Lot-Sample #: F1H100419-001	
	58 N	(90 - 110)	MCAWW 300.0A	08/10/11	1224140
		Dilution Factor: 1	Analysis Time..: 04:51		
Sulfate		Work Order #...: MLH8E1EC		MS Lot-Sample #: F1H100419-001	
	97	(90 - 110)	MCAWW 300.0A	08/10/11	1224141
		Dilution Factor: 100	Analysis Time..: 05:20		
Total Alkalinity		Work Order #...: MLHLC1EA		MS Lot-Sample #: F1H090496-002	
	98	(80 - 120)	MCAWW 310.1	08/17/11	1229090
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 **Work Order #...:** MLH8E-SMP MLH8E-DUP **Matrix.....:** WATER

Date Sampled...: 08/09/11 08:35 **Date Received..:** 08/10/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H100419-001		
	108	109	mg/L	1.1	(0-20)	MCAWW 300.0A	08/10/11	1224136
		Dilution Factor: 100				Analysis Time..: 05:20		
Fluoride						SD Lot-Sample #: F1H100419-001		
	0.44	0.44	mg/L	0.22	(0-20)	MCAWW 300.0A	08/10/11	1224137
		Dilution Factor: 1				Analysis Time..: 04:51		
Nitrate						SD Lot-Sample #: F1H100419-001		
	0.012 B	0.015 B	mg/L	22	(0-20)	MCAWW 300.0A	08/10/11	1224138
		Dilution Factor: 1				Analysis Time..: 04:51		
Nitrite						SD Lot-Sample #: F1H100419-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/12/11	1227147
		Dilution Factor: 10				Analysis Time..: 03:14		
Phosphate as P, Ortho						SD Lot-Sample #: F1H100419-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/10/11	1224140
		Dilution Factor: 1				Analysis Time..: 04:51		
Sulfate						SD Lot-Sample #: F1H100419-001		
	748	742	mg/L	0.81	(0-20)	MCAWW 300.0A	08/10/11	1224141
		Dilution Factor: 100				Analysis Time..: 05:20		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 **Work Order #...:** MLLN1-SMP **Matrix.....:** WATER
MLLN1-DUP
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrite						SD Lot-Sample #: F1H120447-006		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/12/11	1224151
			Dilution Factor: 5			Analysis Time..: 04:49		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 **Work Order #...:** MLH8K-SMP MLH8K-DUP **Matrix.....:** WATER

Date Sampled...: 08/09/11 09:30 **Date Received..:** 08/10/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #:	F1H100419-002	
	2180	2200	mg/L	0.93	(0-20)	MCAWW 300.0A	08/12/11	1227150

Dilution Factor: 1000 Analysis Time..: 04:41

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 **Work Order #...:** MLH8M-SMP MLH8M-DUP **Matrix.....:** WATER

Date Sampled...: 08/09/11 14:45 **Date Received..:** 08/10/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H100419-003		
	936	944	mg/L	0.85	(0-0.0)	MCAWW 160.1	08/16-08/18/11	1228283
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H100419 **Work Order #...:** MLHLC-SMP MLHLC-DUP **Matrix.....:** WATER

Date Sampled...: 08/05/11 09:30 **Date Received..:** 08/06/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #:	F1H090496-002	
	252	252	mg/L	0.0	(0-20)	MCAWW 310.1	08/17/11	1229090
			Dilution Factor: 1			Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001

Radiochemistry

Lab Sample ID: F1H100419-001
Work Order: MLH8E
Matrix: WATER

Date Collected: 08/09/11 0835
Date Received: 08/10/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 80
Uranium 234	0.212		0.086	0.100	0.037	08/17/11	08/17/11
Uranium 235/236	0.018	U	0.029	0.100	0.047	08/17/11	08/17/11
Uranium 238	0.185		0.080	0.100	0.044	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001

Radiochemistry

Lab Sample ID: F1H100419-002
Work Order: MLH8K
Matrix: WATER

Date Collected: 08/09/11 0930
Date Received: 08/10/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 87
Uranium 234	0.51		0.13	0.10	0.02	08/17/11	08/17/11
Uranium 235/236	0.029		0.033	0.100	0.026	08/17/11	08/17/11
Uranium 238	0.291		0.098	0.100	0.021	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001

Radiochemistry

Lab Sample ID: F1H100419-003
Work Order: MLH8M
Matrix: WATER

Date Collected: 08/09/11 1445
Date Received: 08/10/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1229042		Yld % 60
Uranium 234	2.78		0.42	0.10	0.03	08/17/11	08/17/11
Uranium 235/236	0.092		0.070	0.100	0.036	08/17/11	08/17/11
Uranium 238	2.68		0.41	0.10	0.03	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H100419-004
Work Order: MLH8P
Matrix: WATER

Date Collected: 08/09/11 0835
Date Received: 08/10/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1229042		Yld % 79
Uranium 234	0.50		0.14	0.10	0.05	08/17/11	08/17/11
Uranium 235/236	0.022	U	0.032	0.100	0.030	08/17/11	08/17/11
Uranium 238	0.47		0.14	0.10	0.04	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: MW705DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H100419-005
Work Order: MLH8V
Matrix: WATER

Date Collected: 08/09/11 0930
Date Received: 08/10/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 85
Uranium 234	0.253		0.094	0.100	0.037	08/17/11	08/17/11
Uranium 235/236	0.0	U	0.010	0.100	0.028	08/17/11	08/17/11
Uranium 238	0.189		0.080	0.100	0.022	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW711D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H100419-006
Work Order: MLH8W
Matrix: WATER

Date Collected: 08/09/11 1445
Date Received: 08/10/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1229042	Yld % 51
Uranium 234	2.70		0.44	0.10	0.04	08/17/11	08/17/11
Uranium 235/236	0.16		0.11	0.10	0.08	08/17/11	08/17/11
Uranium 238	2.30		0.40	0.10	0.04	08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H100419
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1229042		Yld % 83		F1H170000-042B
Uranium 234	-0.0060	U	0.0070	0.100	0.047		08/17/11	08/17/11
Uranium 235/236	-0.0025	U	0.0050	0.100	0.046		08/17/11	08/17/11
Uranium 238	0.020	U	0.028	0.100	0.043		08/17/11	08/17/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H100419
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ +/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/L		A-01-R MOD			F1H170000-042C
Uranium 234	3.27	3.26	0.42	0.04	82	100	(76 - 136)
Uranium 238	3.39	3.50	0.44	0.02	82	103	(76 - 134)
	Batch #:	1229042		Analysis Date:	08/17/11		

NOTE(S):

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1H100419
Matrix: WATER

Date Sampled: 08/05/11
Date Received: 08/06/11

Parameter	SAMPLE Result	Total Uncert. (2σ+/-)	% Yld	DUPLICATE Result	Total Uncert. (2 σ+/-)	% Yld	QC Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H090496-005**	
Uranium 234	21.6	2.1	64	23.1	2.2	62	7	%RPD
Uranium 235/236	1.05	0.26	64	1.22	0.28	62	15	%RPD
Uranium 238	21.2	2.0	64	22.7	2.2	62	7	%RPD
Batch #:	1229042 (Sample)			1229042 (Duplicate)				

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

F1H100419

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R252,2-12,METS,

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-10

Project: 140415
Guteryl Steel
Analytical Due Date: 2011-08-18

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 0
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	MW705D0001			2011-08-09 / 835	MLH8E	WATER

SAMPLE COMMENTS:

MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846 8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW 160.1 W	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW 300.0A W	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW 300.0A W	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW 300.0A W	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06			
XX	CX	MCAW 300.0A W	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW 300.0A W	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW 300.0A W	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW 300.0A W	WATER, 300.0A, Nitrile as N	88	NO SAMPLE PREPARATIDN PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H100419

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R252,2-12,METS,

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 0

Date Received: 2011-08-10

Analytical Due Date: 2011-08-18

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	MW705DD0001			2011-08-09 / 930	MLH8K	WATER

SAMPLE COMMENTS:

ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	08	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

Storage Loc: R252,2-12,METS,

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-10

Analytical Due Date: 2011-08-18

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A04DMW711D0001			2011-08-09 / 1445	MLH8M	WATER

SAMPLE COMMENTS:

SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

Storage Loc: R252,2-12,METS,

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 0

Date Received: 2011-08-10

Analytical Due Date: 2011-08-18

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE # 4 | CLIENT SAMPLE ID: MW705D0001 DISSOLVED | Site ID | Client Matrix: WATER | DATE/TIME SAMPLED: 2011-08-09 / 835 | WORKORDER: MLH8P

SAMPLE COMMENTS:

NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromalography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE # 5 | CLIENT SAMPLE ID: MW705DD0001 DISSOLVED | Site ID | Client Matrix: WATER | DATE/TIME SAMPLED: 2011-08-09 / 930 | WORKORDER: MLH8V

SAMPLE COMMENTS:

AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

Storage Loc: R252,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-10

Analytical Due Date: 2011-08-18

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LCT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	A04DMW711D0001 DISSOLVED			2011-08-09 / 1445	MLH8W	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H100419

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R252,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guteryl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-10
Analytical Due Date: 2011-08-18
Report Due Date: 2011-08-22
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

stAmerica St. Louis
15 Rider Trail North
h City, MO 63045
ne 314.298.8566 fax 314.298.8757

CUK 1456

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/09/2011	COC No: 005
w Environmental & infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
0 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
cinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below _____			SDG No.
3) 782-4807 FAX	X 2 weeks			
ject Name: Former Guteri Specialty Steel Corporation FUSRA	1 week			
: Lockport, NY	2 days			
#	1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury					Sample Specific Notes:
7705D0001	8/9/2011	0835	Grab	GW	10	X		X	X	X	X	X	X	X								3xVOA	4xLP 2x250P 1x500P
7705DD0001	8/9/2011	0930	Grab	GW	10	X		X	X	X	X	X	X	X								↓	↓ ↓ ↓
-DMW711D0001	8/9/2011	1445	Grab	GW	10	X		X	X	X	X	X	X	X								↓	↓ ↓ ↓

servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

sible Hazard Identification

] Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client X Disposal By Lab ☐ Archive For _____ Months

cial Instructions/QC Requirements & Comments:

nquished by:	Company: Shaw E & I. Inc.	Date/Time: 8/9/11 1650	Received by:	Company: BFLO	Date/Time: 08-09-11 16:50
nquished by:	Company: BFLO	Date/Time: 08-09-11 17:15	Received by:	Company: TA-BUFFALO	Date/Time: 08/09/11 1715
nquished by:	Company: TA-BUFFALO	Date/Time: 08/09/11	Received by:	Company: TA-STL	Date/Time: 08/10/11 0920

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): FIH100419 TestAmerica St. Louis

CUR Form #: 456

CONDITION UPON RECEIPT FORM

Client: SHAW

Quote No: 89251

COC/RFA No: 005

Initiated By: NVO Date: 8/10/11 Time: 0920

Shipping Information

Shipper: FedEx UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*				Sample Temperature (s):**			
1.	4485 0258 3252	6.		1.	2	6.	
2.	4485 0258 3263	7.		2.	AMBIENT	7.	
3.		8.		3.		8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

Client Contact Name: _____ Informed by: _____

1. Sample(s) processed "as is"
2. Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 8/10/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guteryl Steel

Lot #: F1H110460

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 24, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H110460

This report contains the analytical results for the 14 samples received under chain of custody by TestAmerica in St. Louis on August 11, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1230199
Tertahydrofuran was removed from the initial calibration lowest point due to poor response. Isobutanol, n-Butanol, 2-Chloroethylvinyl ether, 4-Methyl-2-pentanone and 2-Hexanone were removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration. The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

Affected Samples:
F1H110460 (8): A04MW604D0001
F1H110460 (9): A04DMW709D0001
F1H110460 (10): A04BMW605D0001
F1H110460 (11): A04BMW260001
F1H110460 (12): A04BMW9000
F1H110460 (13): A04BMW9001
F1H110460 (14): A04DMW704DD0001

The sample was screened to determine if high concentrations of target analytes were present. The sample was analyzed at a dilution of 5X and 50X due to high concentrations of target analytes. The reporting limit has been adjusted for the dilution since no analysis at a lesser dilution was performed.

Affected Samples:
F1H110460 (11): A04BMW260001

The internal standard(s) recovery is outside the lower QC limit, indicating a potential positive bias. There were no target analytes associated with this internal standard observed above the reporting limit in the sample; therefore the sample data was not adversely affected by this excursion. The original sample results are provided.

Affected Samples:
F1H110460 (10): A04BMW605D0001
F1H110460 (11): A04BMW260001
F1H110460 (12): A04BMW9000

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1224018
Strontium was observed in the CCB above the reporting limit. Associated samples which exhibit concentrations greater than ten (10) times the concentrations observed in the CCB, do not require re-analysis. Original results are reported.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H110460 (1): A04MW604D0001 DISSOLVED
F1H110460 (2): A04DMW709DD0001 DISSOLVED
F1H110460 (3): A04BMW605D0001 DISSOLVED
F1H110460 (4): A04BMW260001 DISSOLVED
F1H110460 (6): A04BMW9001 DISSOLVED
F1H110460 (7): A04DMW704DD0001 DISSOLVED
F1H110460 (8): A04MW604D0001
F1H110460 (9): A04DMW709D0001
F1H110460 (11): A04BMW260001
F1H110460 (13): A04BMW9001
F1H110460 (14): A04DMW704DD0001

Fluoride (MCAWW 300.0A)

Batch: 1224143
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H110460 (10): A04BMW605D0001
F1H110460 (12): A04BMW9000

Nitrate as N (MCAWW 300.0A)

Batch: 1224144
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H110460 (13): A04BMW9001
F1H110460 (14): A04DMW704DD0001

Sulfate (MCAWW 300.0A)

Batch: 1224147
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H110460 (8): A04MW604D0001
F1H110460 (9): A04DMW709D0001
F1H110460 (10): A04BMW605D0001
F1H110460 (11): A04BMW260001
F1H110460 (12): A04BMW9000
F1H110460 (13): A04BMW9001
F1H110460 (14): A04DMW704DD0001

Nitrite as N (MCAWW 300.0A)

Batch: 1224145
The following samples were reported ND for Nitrite, due to matrix interference with Chloride in the undiluted analyse. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H110460 (8): A04MW604D0001
F1H110460 (9): A04DMW709D0001
F1H110460 (10): A04BMW605D0001
F1H110460 (11): A04BMW260001
F1H110460 (12): A04BMW9000
F1H110460 (13): A04BMW9001
F1H110460 (14): A04DMW704DD0001

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1224146
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H110460 (8): A04MW604D0001
F1H110460 (9): A04DMW709D0001
F1H110460 (10): A04BMW605D0001
F1H110460 (11): A04BMW260001
F1H110460 (12): A04BMW9000
F1H110460 (13): A04BMW9001
F1H110460 (14): A04DMW704DD0001

Isotopic Uranium by Alpha Spectroscopy (A-01-R MOD)

Batch: 1231145
The reporting limit for Uranium 238 was not met due to the presence of the nuclide in the sample. The data is reported with the MDA achieved.

Affected Samples:
F1H110460 (3): A04BMW605D0001 DISSOLVED
F1H110460 (10): A04BMW605D0001

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H110460

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H110460

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLKHP	001	A04MW604D0001 DISSOLVED	08/10/11	08:30
MLKHV	002	A04DMW709DD0001 DISSOLVED	08/10/11	09:30
MLKH4	003	A04BMW605D0001 DISSOLVED	08/10/11	10:15
MLKH8	004	A04BMW260001 DISSOLVED	08/10/11	13:20
MLKJD	005	A04BMW9000 DISSOLVED	08/10/11	
MLKJE	006	A04BMW9001 DISSOLVED	08/10/11	
MLKJJ	007	A04DMW704DD0001 DISSOLVED	08/10/11	11:15
MLKJL	008	A04MW604D0001	08/10/11	08:30
MLKJ5	009	A04DMW709D0001	08/10/11	09:30
MLKKA	010	A04BMW605D0001	08/10/11	10:15
MLKKD	011	A04BMW260001	08/10/11	13:20
MLKKH	012	A04BMW9000	08/10/11	
MLKKK	013	A04BMW9001	08/10/11	
MLKKN	014	A04DMW704DD0001	08/10/11	11:15

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-001 Matrix.....: WATER
Date Sampled...: 08/10/11 08:30 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**101**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKHP1A3**
		Dilution Factor: 1		Analysis Time..: 21:32		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AD
		Dilution Factor: 1		Analysis Time..: 13:26		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AE
		Dilution Factor: 1		Analysis Time..: 13:26		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AC
		Dilution Factor: 1		Analysis Time..: 13:26		
Barium	**74.3**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHP1AF**
		Dilution Factor: 1		Analysis Time..: 13:26		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AG
		Dilution Factor: 1		Analysis Time..: 13:26		
Calcium	**98600**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHP1AH**
		Dilution Factor: 1		Analysis Time..: 13:26		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AJ
		Dilution Factor: 1		Analysis Time..: 13:26		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AK
		Dilution Factor: 1		Analysis Time..: 13:26		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AL
		Dilution Factor: 1		Analysis Time..: 13:26		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AM
		Dilution Factor: 1		Analysis Time..: 13:26		
Iron	ND	100	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AN
		Dilution Factor: 1		Analysis Time..: 13:26		
Magnesium	**25800**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHP1AP**
		Dilution Factor: 1		Analysis Time..: 13:26		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**33.6**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHP1AQ**
		Dilution Factor: 1		Analysis Time..: 13:26		
Sodium	**296000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKHP1AR**
		Dilution Factor: 5		Analysis Time..: 16:26		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AT
		Dilution Factor: 1		Analysis Time..: 13:26		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AU
		Dilution Factor: 1		Analysis Time..: 13:26		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AV
		Dilution Factor: 1		Analysis Time..: 13:26		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1AW
		Dilution Factor: 1		Analysis Time..: 13:26		
Strontium	**413**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHP1AX**
		Dilution Factor: 1		Analysis Time..: 13:26		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1A0
		Dilution Factor: 1		Analysis Time..: 13:26		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHP1A1
		Dilution Factor: 1		Analysis Time..: 13:26		
Zinc	**118**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHP1A2**
		Dilution Factor: 1		Analysis Time..: 13:26		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-002 Matrix.....: WATER
Date Sampled...: 08/10/11 09:30 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**55.4**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKHV1AE**
		Dilution Factor: 1		Analysis Time..: 21:58		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AJ
		Dilution Factor: 1		Analysis Time..: 13:58		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AK
		Dilution Factor: 1		Analysis Time..: 13:58		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AH
		Dilution Factor: 1		Analysis Time..: 13:58		
Barium	**68.5**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHV1AL**
		Dilution Factor: 1		Analysis Time..: 13:58		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AM
		Dilution Factor: 1		Analysis Time..: 13:58		
Calcium	**121000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHV1AN**
		Dilution Factor: 1		Analysis Time..: 13:58		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AP
		Dilution Factor: 1		Analysis Time..: 13:58		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AQ
		Dilution Factor: 1		Analysis Time..: 13:58		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AR
		Dilution Factor: 1		Analysis Time..: 13:58		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AT
		Dilution Factor: 1		Analysis Time..: 13:58		
Iron	**127**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHV1AU**
		Dilution Factor: 1		Analysis Time..: 13:58		
Magnesium	**37800**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHV1AV**
		Dilution Factor: 1		Analysis Time..: 13:58		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**25.6**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHV1AW**
		Dilution Factor: 1		Analysis Time..: 13:58		
Sodium	**203000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKHV1AX**
		Dilution Factor: 5		Analysis Time..: 16:45		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1A0
		Dilution Factor: 1		Analysis Time..: 13:58		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1A1
		Dilution Factor: 1		Analysis Time..: 13:58		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1A2
		Dilution Factor: 1		Analysis Time..: 13:58		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1A3
		Dilution Factor: 1		Analysis Time..: 13:58		
Strontium	**1240**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKHV1A4**
		Dilution Factor: 1		Analysis Time..: 13:58		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AA
		Dilution Factor: 1		Analysis Time..: 13:58		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AC
		Dilution Factor: 1		Analysis Time..: 13:58		
Zinc	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKHV1AD
		Dilution Factor: 1		Analysis Time..: 13:58		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-003 **Matrix.....:** WATER
Date Sampled...: 08/10/11 10:15 **Date Received..:** 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**209**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKH41AE**
		Dilution Factor: 1		Analysis Time..: 22:12		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AJ
		Dilution Factor: 1		Analysis Time..: 14:11		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AK
		Dilution Factor: 1		Analysis Time..: 14:11		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AH
		Dilution Factor: 1		Analysis Time..: 14:11		
Barium	**46.5 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH41AL**
		Dilution Factor: 1		Analysis Time..: 14:11		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AM
		Dilution Factor: 1		Analysis Time..: 14:11		
Calcium	**68100**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH41AN**
		Dilution Factor: 1		Analysis Time..: 14:11		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AP
		Dilution Factor: 1		Analysis Time..: 14:11		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AQ
		Dilution Factor: 1		Analysis Time..: 14:11		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AR
		Dilution Factor: 1		Analysis Time..: 14:11		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AT
		Dilution Factor: 1		Analysis Time..: 14:11		
Iron	**132**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH41AU**
		Dilution Factor: 1		Analysis Time..: 14:11		
Magnesium	**34300**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH41AV**
		Dilution Factor: 1		Analysis Time..: 14:11		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	278	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AW
		Dilution Factor: 1		Analysis Time..: 14:11		
Sodium	60100 B	5000	ug/L	SW846 6010C	08/12-08/19/11	MLKH41AX
		Dilution Factor: 5		Analysis Time..: 16:58		
Nickel	19.3 J	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41A0
		Dilution Factor: 1		Analysis Time..: 14:11		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41A1
		Dilution Factor: 1		Analysis Time..: 14:11		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41A2
		Dilution Factor: 1		Analysis Time..: 14:11		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41A3
		Dilution Factor: 1		Analysis Time..: 14:11		
Strontium	178	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41A4
		Dilution Factor: 1		Analysis Time..: 14:11		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AA
		Dilution Factor: 1		Analysis Time..: 14:11		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AC
		Dilution Factor: 1		Analysis Time..: 14:11		
Zinc	22.5	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH41AD
		Dilution Factor: 1		Analysis Time..: 14:11		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-004 **Matrix.....:** WATER
Date Sampled...: 08/10/11 13:20 **Date Received..:** 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**94.6**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKH81AE**
		Dilution Factor: 1		Analysis Time..: 22:18		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AJ
		Dilution Factor: 1		Analysis Time..: 14:24		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AK
		Dilution Factor: 1		Analysis Time..: 14:24		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AH
		Dilution Factor: 1		Analysis Time..: 14:24		
Barium	**59.1**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH81AL**
		Dilution Factor: 1		Analysis Time..: 14:24		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AM
		Dilution Factor: 1		Analysis Time..: 14:24		
Calcium	**85500**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH81AN**
		Dilution Factor: 1		Analysis Time..: 14:24		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AP
		Dilution Factor: 1		Analysis Time..: 14:24		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AQ
		Dilution Factor: 1		Analysis Time..: 14:24		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AR
		Dilution Factor: 1		Analysis Time..: 14:24		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AT
		Dilution Factor: 1		Analysis Time..: 14:24		
Iron	**52.9 J**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH81AU**
		Dilution Factor: 1		Analysis Time..: 14:24		
Magnesium	**23000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH81AV**
		Dilution Factor: 1		Analysis Time..: 14:24		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**115**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH81AW**
		Dilution Factor: 1		Analysis Time..: 14:24		
Sodium	**321000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKH81AX**
		Dilution Factor: 5		Analysis Time..: 17:11		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81A0
		Dilution Factor: 1		Analysis Time..: 14:24		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81A1
		Dilution Factor: 1		Analysis Time..: 14:24		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81A2
		Dilution Factor: 1		Analysis Time..: 14:24		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81A3
		Dilution Factor: 1		Analysis Time..: 14:24		
Strontium	**382**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH81A4**
		Dilution Factor: 1		Analysis Time..: 14:24		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AA
		Dilution Factor: 1		Analysis Time..: 14:24		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKH81AC
		Dilution Factor: 1		Analysis Time..: 14:24		
Zinc	**57.5**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKH81AD**
		Dilution Factor: 1		Analysis Time..: 14:24		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-005 Matrix.....: WATER
Date Sampled...: 08/10/11 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	212	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKJD1AE**
		Dilution Factor: 1		Analysis Time..: 22:38		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AJ
		Dilution Factor: 1		Analysis Time..: 14:30		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AK
		Dilution Factor: 1		Analysis Time..: 14:30		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AH
		Dilution Factor: 1		Analysis Time..: 14:30		
Barium	**45.6 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1AL**
		Dilution Factor: 1		Analysis Time..: 14:30		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AM
		Dilution Factor: 1		Analysis Time..: 14:30		
Calcium	**67200**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1AN**
		Dilution Factor: 1		Analysis Time..: 14:30		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AP
		Dilution Factor: 1		Analysis Time..: 14:30		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AQ
		Dilution Factor: 1		Analysis Time..: 14:30		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AR
		Dilution Factor: 1		Analysis Time..: 14:30		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AT
		Dilution Factor: 1		Analysis Time..: 14:30		
Iron	**121**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1AU**
		Dilution Factor: 1		Analysis Time..: 14:30		
Magnesium	**34000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1AV**
		Dilution Factor: 1		Analysis Time..: 14:30		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**278**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1AW**
		Dilution Factor: 1		Analysis Time..: 14:30		
Sodium	**62400 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKJD1AX**
		Dilution Factor: 5		Analysis Time..: 17:30		
Nickel	**19.8 J**	**40.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1A0**
		Dilution Factor: 1		Analysis Time..: 14:30		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1A1
		Dilution Factor: 1		Analysis Time..: 14:30		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1A2
		Dilution Factor: 1		Analysis Time..: 14:30		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1A3
		Dilution Factor: 1		Analysis Time..: 14:30		
Strontium	**180**	**25.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1A4**
		Dilution Factor: 5		Analysis Time..: 08:44		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AA
		Dilution Factor: 1		Analysis Time..: 14:30		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJD1AC
		Dilution Factor: 1		Analysis Time..: 14:30		
Zinc	**21.2**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJD1AD**
		Dilution Factor: 1		Analysis Time..: 14:30		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-006 Matrix.....: WATER
Date Sampled...: 08/10/11 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**26.9**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKJE1AE**
		Dilution Factor: 1		Analysis Time..: 22:45		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AJ
		Dilution Factor: 1		Analysis Time..: 14:37		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AK
		Dilution Factor: 1		Analysis Time..: 14:37		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AH
		Dilution Factor: 1		Analysis Time..: 14:37		
Barium	**55.4**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJE1AL**
		Dilution Factor: 1		Analysis Time..: 14:37		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AM
		Dilution Factor: 1		Analysis Time..: 14:37		
Calcium	**273000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJE1AN**
		Dilution Factor: 1		Analysis Time..: 14:37		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AP
		Dilution Factor: 1		Analysis Time..: 14:37		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AQ
		Dilution Factor: 1		Analysis Time..: 14:37		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AR
		Dilution Factor: 1		Analysis Time..: 14:37		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AT
		Dilution Factor: 1		Analysis Time..: 14:37		
Iron	ND	100	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AU
		Dilution Factor: 1		Analysis Time..: 14:37		
Magnesium	**107000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJE1AV**
		Dilution Factor: 1		Analysis Time..: 14:37		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**68.8**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJE1AW**
		Dilution Factor: 1		Analysis Time..: 14:37		
Sodium	**109000 B**	**10000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKJE1AX**
		Dilution Factor: 10		Analysis Time..: 17:36		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1A0
		Dilution Factor: 1		Analysis Time..: 14:37		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1A1
		Dilution Factor: 1		Analysis Time..: 14:37		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1A2
		Dilution Factor: 1		Analysis Time..: 14:37		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1A3
		Dilution Factor: 1		Analysis Time..: 14:37		
Strontium	**4730**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJE1A4**
		Dilution Factor: 1		Analysis Time..: 14:37		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AA
		Dilution Factor: 1		Analysis Time..: 14:37		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AC
		Dilution Factor: 1		Analysis Time..: 14:37		
Zinc	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJE1AD
		Dilution Factor: 1		Analysis Time..: 14:37		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-007 Matrix.....: WATER
Date Sampled...: 08/10/11 11:15 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	26.3	1.0	ug/L	SW846 6020A	08/12-08/17/11	MLKJJ1AE
		Dilution Factor: 1		Analysis Time..: 22:52		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AJ
		Dilution Factor: 1		Analysis Time..: 14:43		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AK
		Dilution Factor: 1		Analysis Time..: 14:43		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AH
		Dilution Factor: 1		Analysis Time..: 14:43		
Barium	55.8	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AL
		Dilution Factor: 1		Analysis Time..: 14:43		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AM
		Dilution Factor: 1		Analysis Time..: 14:43		
Calcium	275000	1000	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AN
		Dilution Factor: 1		Analysis Time..: 14:43		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AP
		Dilution Factor: 1		Analysis Time..: 14:43		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AQ
		Dilution Factor: 1		Analysis Time..: 14:43		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AR
		Dilution Factor: 1		Analysis Time..: 14:43		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AT
		Dilution Factor: 1		Analysis Time..: 14:43		
Iron	ND	100	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AU
		Dilution Factor: 1		Analysis Time..: 14:43		
Magnesium	107000	1000	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AV
		Dilution Factor: 1		Analysis Time..: 14:43		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H110460-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**66.7**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJJ1AW**
		Dilution Factor: 1		Analysis Time..: 14:43		
Sodium	**112000 B**	**10000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKJJ1AX**
		Dilution Factor: 10		Analysis Time..: 17:43		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1A0
		Dilution Factor: 1		Analysis Time..: 14:43		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1A1
		Dilution Factor: 1		Analysis Time..: 14:43		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1A2
		Dilution Factor: 1		Analysis Time..: 14:43		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1A3
		Dilution Factor: 1		Analysis Time..: 14:43		
Strontium	**4890**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJJ1A4**
		Dilution Factor: 1		Analysis Time..: 14:43		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AA
		Dilution Factor: 1		Analysis Time..: 14:43		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AC
		Dilution Factor: 1		Analysis Time..: 14:43		
Zinc	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJJ1AD
		Dilution Factor: 1		Analysis Time..: 14:43		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-008 Work Order #...: MLKJL1AC Matrix.....: WATER
Date Sampled...: 08/10/11 08:30 Date Received..: 08/11/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 15:34
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.41 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**18**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**3.9**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**21**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**0.42 J**	**1.0**	**ug/L**
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**42**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**16**	**1.0**	**ug/L**
Vinyl chloride	**1.2 J**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-008 **Work Order #...:** MLKJL1AC **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	112	(85 - 115)
1,2-Dichloroethane-d4	108	(70 - 120)
4-Bromofluorobenzene	105	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001

TOTAL Metals

Lot-Sample #...: F1H110460-008 Matrix.....: WATER
Date Sampled...: 08/10/11 08:30 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**103**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKJL1A5**
		Dilution Factor: 1		Analysis Time..: 22:58		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AF
		Dilution Factor: 1		Analysis Time..: 14:50		
Aluminum	**725**	**200**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1AG**
		Dilution Factor: 1		Analysis Time..: 14:50		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AE
		Dilution Factor: 1		Analysis Time..: 14:50		
Barium	**78.7**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1AH**
		Dilution Factor: 1		Analysis Time..: 14:50		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AJ
		Dilution Factor: 1		Analysis Time..: 14:50		
Calcium	**106000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1AK**
		Dilution Factor: 1		Analysis Time..: 14:50		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AL
		Dilution Factor: 1		Analysis Time..: 14:50		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AM
		Dilution Factor: 1		Analysis Time..: 14:50		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AN
		Dilution Factor: 1		Analysis Time..: 14:50		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AP
		Dilution Factor: 1		Analysis Time..: 14:50		
Iron	**552**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1AQ**
		Dilution Factor: 1		Analysis Time..: 14:50		
Magnesium	**28400**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1AR**
		Dilution Factor: 1		Analysis Time..: 14:50		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001

TOTAL Metals

Lot-Sample #...: F1H110460-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**114**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1AT**
		Dilution Factor: 1		Analysis Time..: 14:50		
Sodium	**307000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKJL1AU**
		Dilution Factor: 5		Analysis Time..: 17:49		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AV
		Dilution Factor: 1		Analysis Time..: 14:50		
Lead	**2.5 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1AW**
		Dilution Factor: 1		Analysis Time..: 14:50		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1AX
		Dilution Factor: 1		Analysis Time..: 14:50		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1A0
		Dilution Factor: 1		Analysis Time..: 14:50		
Strontium	**419**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1A1**
		Dilution Factor: 1		Analysis Time..: 14:50		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1A2
		Dilution Factor: 1		Analysis Time..: 14:50		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJL1A3
		Dilution Factor: 1		Analysis Time..: 14:50		
Zinc	**170**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJL1A4**
		Dilution Factor: 1		Analysis Time..: 14:50		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001

General Chemistry

Lot-Sample #...: F1H110460-008 Work Order #...: MLKJL Matrix.....: WATER
Date Sampled...: 08/10/11 08:30 Date Received..: 08/11/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	471	100	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 500		Analysis Time..: 11:47		
Fluoride	1.2	0.10	mg/L	MCAWW 300.0A	08/11/11	1224143
		Dilution Factor: 1		Analysis Time..: 07:18		
Nitrate	0.044	0.020	mg/L	MCAWW 300.0A	08/11/11	1224144
		Dilution Factor: 1		Analysis Time..: 07:18		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/11/11	1224145
		Dilution Factor: 10		Analysis Time..: 07:33		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/11/11	1224146
		Dilution Factor: 1		Analysis Time..: 07:18		
Sulfate	50.2	5.0	mg/L	MCAWW 300.0A	08/11/11	1224147
		Dilution Factor: 10		Analysis Time..: 07:33		
Total Alkalinity	323	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1240	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709D0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-009 Work Order #...: MLKJ51AN Matrix.....: WATER
Date Sampled...: 08/10/11 09:30 Date Received..: 08/11/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 16:00
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	**0.13 J**	**1.0**	**ug/L**
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**0.18 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**0.13 J**	**2.0**	**ug/L**
Chloroform	**0.49 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**33**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**13**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**31**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	**0.25 J**	**1.0**	**ug/L**
Toluene	**0.32 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	**19**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**16**	**1.0**	**ug/L**
Vinyl chloride	**1.3 J**	**2.0**	**ug/L**
Xylenes (total)	**0.47 J**	**5.0**	**ug/L**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709D0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-009 **Work Order #...:** MLKJ51AN **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
1,2-Dichloroethane-d4	101	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709D0001

TOTAL Metals

Lot-Sample #...: F1H110460-009 Matrix.....: WATER
Date Sampled...: 08/10/11 09:30 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	52.8	1.0	ug/L	SW846 6020A	08/12-08/17/11	MLKJ51AG
		Dilution Factor: 1		Analysis Time..: 23:05		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AR
		Dilution Factor: 1		Analysis Time..: 15:09		
Aluminum	102 J	200	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AT
		Dilution Factor: 1		Analysis Time..: 15:09		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AQ
		Dilution Factor: 1		Analysis Time..: 15:09		
Barium	73.4	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AU
		Dilution Factor: 1		Analysis Time..: 15:09		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AV
		Dilution Factor: 1		Analysis Time..: 15:09		
Calcium	125000	1000	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AW
		Dilution Factor: 1		Analysis Time..: 15:09		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AX
		Dilution Factor: 1		Analysis Time..: 15:09		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A0
		Dilution Factor: 1		Analysis Time..: 15:09		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A1
		Dilution Factor: 1		Analysis Time..: 15:09		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A2
		Dilution Factor: 1		Analysis Time..: 15:09		
Iron	239	100	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A3
		Dilution Factor: 1		Analysis Time..: 15:09		
Magnesium	38500	1000	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A4
		Dilution Factor: 1		Analysis Time..: 15:09		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709D0001

TOTAL Metals

Lot-Sample #...: F1H110460-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**35.7**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJ51A5**
		Dilution Factor: 1		Analysis Time..: 15:09		
Sodium	**203000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKJ51A6**
		Dilution Factor: 5		Analysis Time..: 17:55		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A7
		Dilution Factor: 1		Analysis Time..: 15:09		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A8
		Dilution Factor: 1		Analysis Time..: 15:09		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51A9
		Dilution Factor: 1		Analysis Time..: 15:09		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AA
		Dilution Factor: 1		Analysis Time..: 15:09		
Strontium	**1270**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJ51AC**
		Dilution Factor: 1		Analysis Time..: 15:09		
Thallium	**4.4 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKJ51AD**
		Dilution Factor: 1		Analysis Time..: 15:09		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AE
		Dilution Factor: 1		Analysis Time..: 15:09		
Zinc	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKJ51AF
		Dilution Factor: 1		Analysis Time..: 15:09		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709D0001

General Chemistry

Lot-Sample #...: F1H110460-009 Work Order #...: MLKJ5 Matrix.....: WATER
Date Sampled...: 08/10/11 09:30 Date Received..: 08/11/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	346	20.0	mg/L	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 100		Analysis Time..: 12:16		
Fluoride	0.98	0.10	mg/L	MCAWW 300.0A	08/11/11	1224143
		Dilution Factor: 1		Analysis Time..: 09:28		
Nitrate	0.014 B	0.020	mg/L	MCAWW 300.0A	08/11/11	1224144
		Dilution Factor: 1		Analysis Time..: 09:28		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/11/11	1224145
		Dilution Factor: 10		Analysis Time..: 10:11		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/11/11	1224146
		Dilution Factor: 1		Analysis Time..: 09:28		
Sulfate	153	5.0	mg/L	MCAWW 300.0A	08/11/11	1224147
		Dilution Factor: 10		Analysis Time..: 10:11		
Total Alkalinity	256	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1100	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-010 Work Order #...: MLKKA1A1 Matrix.....: WATER
Date Sampled...: 08/10/11 10:15 Date Received..: 08/11/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 16:26
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.20 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**2.2**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**0.16 J**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**0.34 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**3.1**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**2.4**	**1.0**	**ug/L**
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-010 **Work Order #...:** MLKKA1A1 **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001

TOTAL Metals

Lot-Sample #...: F1H110460-010 **Matrix.....:** WATER
Date Sampled...: 08/10/11 10:15 **Date Received..:** 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**214**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKKA1AT**
		Dilution Factor: 1		Analysis Time..: 23:11		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1A4
		Dilution Factor: 1		Analysis Time..: 15:15		
Aluminum	**937**	**200**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1A5**
		Dilution Factor: 1		Analysis Time..: 15:15		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1A3
		Dilution Factor: 1		Analysis Time..: 15:15		
Barium	**53.0**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1A6**
		Dilution Factor: 1		Analysis Time..: 15:15		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1A7
		Dilution Factor: 1		Analysis Time..: 15:15		
Calcium	**85700**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1A8**
		Dilution Factor: 1		Analysis Time..: 15:15		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1A9
		Dilution Factor: 1		Analysis Time..: 15:15		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1AA
		Dilution Factor: 1		Analysis Time..: 15:15		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1AC
		Dilution Factor: 1		Analysis Time..: 15:15		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1AD
		Dilution Factor: 1		Analysis Time..: 15:15		
Iron	**957**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1AE**
		Dilution Factor: 1		Analysis Time..: 15:15		
Magnesium	**40800**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1AF**
		Dilution Factor: 1		Analysis Time..: 15:15		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001

TOTAL Metals

Lot-Sample #...: F1H110460-010 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**413**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1AG**
		Dilution Factor: 1		Analysis Time..: 15:15		
Sodium	**62200 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKKA1AH**
		Dilution Factor: 5		Analysis Time..: 18:02		
Nickel	**24.6 J**	**40.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1AJ**
		Dilution Factor: 1		Analysis Time..: 15:15		
Lead	**5.0 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1AK**
		Dilution Factor: 1		Analysis Time..: 15:15		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1AL
		Dilution Factor: 1		Analysis Time..: 15:15		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1AM
		Dilution Factor: 1		Analysis Time..: 15:15		
Strontium	**190**	**25.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1AN**
		Dilution Factor: 5		Analysis Time..: 08:50		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1AP
		Dilution Factor: 1		Analysis Time..: 15:15		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKA1AQ
		Dilution Factor: 1		Analysis Time..: 15:15		
Zinc	**73.1**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKA1AR**
		Dilution Factor: 1		Analysis Time..: 15:15		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001

General Chemistry

Lot-Sample #...: F1H110460-010 Work Order #...: MLKKA Matrix.....: WATER
Date Sampled...: 08/10/11 10:15 Date Received..: 08/11/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	38.8	2.0	mg/L	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 10		Analysis Time..: 12:30		
Fluoride	3.3	0.50	mg/L	MCAWW 300.0A	08/11/11	1224143
		Dilution Factor: 5		Analysis Time..: 10:54		
Nitrate	0.57	0.020	mg/L	MCAWW 300.0A	08/11/11	1224144
		Dilution Factor: 1		Analysis Time..: 10:40		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/11/11	1224145
		Dilution Factor: 5		Analysis Time..: 10:54		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/11/11	1224146
		Dilution Factor: 1		Analysis Time..: 10:40		
Sulfate	89.6	2.5	mg/L	MCAWW 300.0A	08/11/11	1224147
		Dilution Factor: 5		Analysis Time..: 10:54		
Total Alkalinity	354	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	502	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001

GC/MS Volatiles

Lot-Sample #...: F1H110460-011 Work Order #...: MLKKD1A1 Matrix.....: WATER
Date Sampled...: 08/10/11 13:20 Date Received..: 08/11/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 20:23
Dilution Factor: 5
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dichlorobenzene	ND	5.0	ug/L
1,4-Dichlorobenzene	ND	5.0	ug/L
Acetone	ND	10	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	25	ug/L
Carbon disulfide	ND	10	ug/L
Carbon tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	10	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chloroethane	ND	10	ug/L
Chloroform	ND	5.0	ug/L
1,2-Dichlorobenzene	ND	5.0	ug/L
1,1-Dichloroethane	**56 D**	**5.0**	**ug/L**
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	**21 D**	**5.0**	**ug/L**
1,2-Dichloroethene (total)	**64 D**	**10**	**ug/L**
1,2-Dichloropropane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	5.0	ug/L
2-Hexanone	ND	25	ug/L
Methylene chloride	**1.8 J,D**	**5.0**	**ug/L**
4-Methyl-2-pentanone	ND	25	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
Trichloroethene	**44 D**	**5.0**	**ug/L**
Vinyl chloride	**6.0 J,D**	**10**	**ug/L**
Xylenes (total)	ND	25	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001

GC/MS Volatiles

Lot-Sample #...: F1H110460-011 **Work Order #...:** MLKKD1A1 **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	102	(70 - 120)
4-Bromofluorobenzene	106	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001

GC/MS Volatiles

Lot-Sample #...:	F1H110460-011	**Work Order #...:**	MLKKD2A1	**Matrix.....:**	WATER
Date Sampled...:	08/10/11 13:20	**Date Received..:**	08/11/11		
Prep Date.....:	08/18/11	**Analysis Date..:**	08/18/11		
Prep Batch #...:	1230199	**Analysis Time..:**	16:53		
Dilution Factor:	50				
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,1-Trichloroethane	**290 D**	**50**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
1,2-Dichloroethane-d4	105	(70 - 120)
4-Bromofluorobenzene	100	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001

TOTAL Metals

Lot-Sample #...: F1H110460-011 Matrix.....: WATER
Date Sampled...: 08/10/11 13:20 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**107**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKKD1AT**
		Dilution Factor: 1		Analysis Time..: 23:18		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1A4
		Dilution Factor: 1		Analysis Time..: 15:22		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1A5
		Dilution Factor: 1		Analysis Time..: 15:22		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1A3
		Dilution Factor: 1		Analysis Time..: 15:22		
Barium	**54.5**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKD1A6**
		Dilution Factor: 1		Analysis Time..: 15:22		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1A7
		Dilution Factor: 1		Analysis Time..: 15:22		
Calcium	**83000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKD1A8**
		Dilution Factor: 1		Analysis Time..: 15:22		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1A9
		Dilution Factor: 1		Analysis Time..: 15:22		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AA
		Dilution Factor: 1		Analysis Time..: 15:22		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AC
		Dilution Factor: 1		Analysis Time..: 15:22		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AD
		Dilution Factor: 1		Analysis Time..: 15:22		
Iron	**166**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKD1AE**
		Dilution Factor: 1		Analysis Time..: 15:22		
Magnesium	**22100**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKD1AF**
		Dilution Factor: 1		Analysis Time..: 15:22		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001

TOTAL Metals

Lot-Sample #...: F1H110460-011 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	145	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKD1AG**
		Dilution Factor: 1		Analysis Time..: 15:22		
Sodium	**325000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKKD1AH**
		Dilution Factor: 5		Analysis Time..: 18:08		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AJ
		Dilution Factor: 1		Analysis Time..: 15:22		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AK
		Dilution Factor: 1		Analysis Time..: 15:22		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AL
		Dilution Factor: 1		Analysis Time..: 15:22		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AM
		Dilution Factor: 1		Analysis Time..: 15:22		
Strontium	**373**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKD1AN**
		Dilution Factor: 1		Analysis Time..: 15:22		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AP
		Dilution Factor: 1		Analysis Time..: 15:22		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKD1AQ
		Dilution Factor: 1		Analysis Time..: 15:22		
Zinc	**59.4**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKD1AR**
		Dilution Factor: 1		Analysis Time..: 15:22		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001

General Chemistry

Lot-Sample #...: F1H110460-011 Work Order #...: MLKKD Matrix.....: WATER
Date Sampled...: 08/10/11 13:20 Date Received..: 08/11/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	530	100	mg/L	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 500		Analysis Time..: 01:13		
Fluoride	1.7	0.10	mg/L	MCAWW 300.0A	08/11/11	1224143
		Dilution Factor: 1		Analysis Time..: 11:38		
Nitrate	0.061	0.020	mg/L	MCAWW 300.0A	08/11/11	1224144
		Dilution Factor: 1		Analysis Time..: 11:38		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/11/11	1224145
		Dilution Factor: 10		Analysis Time..: 11:52		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/11/11	1224146
		Dilution Factor: 1		Analysis Time..: 11:38		
Sulfate	63.2	5.0	mg/L	MCAWW 300.0A	08/11/11	1224147
		Dilution Factor: 10		Analysis Time..: 11:52		
Total Alkalinity	159	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1230	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000

GC/MS Volatiles

Lot-Sample #...:	F1H110460-012	**Work Order #...:**	MLKKH1A1	**Matrix.....:**	WATER
Date Sampled...:	08/10/11	**Date Received..:**	08/11/11		
Prep Date.....:	08/18/11	**Analysis Date..:**	08/18/11		
Prep Batch #...:	1230199	**Analysis Time..:**	17:19		
Dilution Factor:	1				
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.20 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**2.0**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**0.14 J**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**0.25 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.30 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**2.8**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**2.2**	**1.0**	**ug/L**
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000

GC/MS Volatiles

Lot-Sample #...: F1H110460-012 Work Order #...: MLKKH1A1 Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	105	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000

TOTAL Metals

Lot-Sample #...: F1H110460-012 Matrix.....: WATER
Date Sampled...: 08/10/11 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	210	1.0	ug/L	SW846 6020A	08/12-08/17/11	MLKKH1AT
		Dilution Factor: 1		Analysis Time..: 23:25		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1A4
		Dilution Factor: 1		Analysis Time..: 15:28		
Aluminum	1620	200	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1A5
		Dilution Factor: 1		Analysis Time..: 15:28		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1A3
		Dilution Factor: 1		Analysis Time..: 15:28		
Barium	57.7	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1A6
		Dilution Factor: 1		Analysis Time..: 15:28		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1A7
		Dilution Factor: 1		Analysis Time..: 15:28		
Calcium	94900	1000	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1A8
		Dilution Factor: 1		Analysis Time..: 15:28		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1A9
		Dilution Factor: 1		Analysis Time..: 15:28		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AA
		Dilution Factor: 1		Analysis Time..: 15:28		
Chromium	3.2 J	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AC
		Dilution Factor: 1		Analysis Time..: 15:28		
Copper	6.4 J	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AD
		Dilution Factor: 1		Analysis Time..: 15:28		
Iron	1570	100	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AE
		Dilution Factor: 1		Analysis Time..: 15:28		
Magnesium	44700	1000	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AF
		Dilution Factor: 1		Analysis Time..: 15:28		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000

TOTAL Metals

Lot-Sample #...: F1H110460-012 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**489**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKH1AG**
		Dilution Factor: 1		Analysis Time..: 15:28		
Sodium	**60100 B**	**5000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKKH1AH**
		Dilution Factor: 5		Analysis Time..: 18:14		
Nickel	**28.6 J**	**40.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKH1AJ**
		Dilution Factor: 1		Analysis Time..: 15:28		
Lead	**8.6 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKH1AK**
		Dilution Factor: 1		Analysis Time..: 15:28		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AL
		Dilution Factor: 1		Analysis Time..: 15:28		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AM
		Dilution Factor: 1		Analysis Time..: 15:28		
Strontium	**188**	**25.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKH1AN**
		Dilution Factor: 5		Analysis Time..: 08:56		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AP
		Dilution Factor: 1		Analysis Time..: 15:28		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKH1AQ
		Dilution Factor: 1		Analysis Time..: 15:28		
Zinc	**109**	**20.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKH1AR**
		Dilution Factor: 1		Analysis Time..: 15:28		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000

General Chemistry

Lot-Sample #...: F1H110460-012 Work Order #...: MLKKH Matrix.....: WATER
Date Sampled...: 08/10/11 Date Received..: 08/11/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	38.4	2.0	mg/L	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 10		Analysis Time..: 01:28		
Fluoride	3.4	0.50	mg/L	MCAWW 300.0A	08/12/11	1224143
		Dilution Factor: 5		Analysis Time..: 01:04		
Nitrate	0.30	0.020	mg/L	MCAWW 300.0A	08/12/11	1224144
		Dilution Factor: 1		Analysis Time..: 12:21		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/12/11	1224145
		Dilution Factor: 5		Analysis Time..: 01:04		
Phosphate as P, Ortho	0.12 B,J	0.50	mg/L	MCAWW 300.0A	08/12/11	1224146
		Dilution Factor: 1		Analysis Time..: 12:21		
Sulfate	87.2	2.5	mg/L	MCAWW 300.0A	08/12/11	1224147
		Dilution Factor: 5		Analysis Time..: 01:04		
Total Alkalinity	354	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	496	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001

GC/MS Volatiles

Lot-Sample #...: F1H110460-013 Work Order #...: MLKKK1A1 Matrix.....: WATER
Date Sampled...: 08/10/11 Date Received..: 08/11/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 17:45
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	**0.18 J**	**1.0**	**ug/L**
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**2.7**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**2.8**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.67 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.41 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	**2.3**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	**0.49 J**	**5.0**	**ug/L**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001

GC/MS Volatiles

Lot-Sample #...: F1H110460-013 **Work Order #...:** MLKKK1A1 **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
1,2-Dichloroethane-d4	105	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001

TOTAL Metals

Lot-Sample #...: F1H110460-013 **Matrix.....:** WATER
Date Sampled...: 08/10/11 **Date Received..:** 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**24.7**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKKK1AT**
		Dilution Factor: 1		Analysis Time..: 23:31		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1A4
		Dilution Factor: 1		Analysis Time..: 15:35		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1A5
		Dilution Factor: 1		Analysis Time..: 15:35		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1A3
		Dilution Factor: 1		Analysis Time..: 15:35		
Barium	**55.7**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKK1A6**
		Dilution Factor: 1		Analysis Time..: 15:35		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1A7
		Dilution Factor: 1		Analysis Time..: 15:35		
Calcium	**271000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKK1A8**
		Dilution Factor: 1		Analysis Time..: 15:35		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1A9
		Dilution Factor: 1		Analysis Time..: 15:35		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AA
		Dilution Factor: 1		Analysis Time..: 15:35		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AC
		Dilution Factor: 1		Analysis Time..: 15:35		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AD
		Dilution Factor: 1		Analysis Time..: 15:35		
Iron	ND	100	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AE
		Dilution Factor: 1		Analysis Time..: 15:35		
Magnesium	**106000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKK1AF**
		Dilution Factor: 1		Analysis Time..: 15:35		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001

TOTAL Metals

Lot-Sample #...: F1H110460-013 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**65.5**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKK1AG**
		Dilution Factor: 1		Analysis Time..: 15:35		
Sodium	**107000 B**	**10000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKKK1AH**
		Dilution Factor: 10		Analysis Time..: 18:21		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AJ
		Dilution Factor: 1		Analysis Time..: 15:35		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AK
		Dilution Factor: 1		Analysis Time..: 15:35		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AL
		Dilution Factor: 1		Analysis Time..: 15:35		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AM
		Dilution Factor: 1		Analysis Time..: 15:35		
Strontium	**4840**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKK1AN**
		Dilution Factor: 1		Analysis Time..: 15:35		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AP
		Dilution Factor: 1		Analysis Time..: 15:35		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AQ
		Dilution Factor: 1		Analysis Time..: 15:35		
Zinc	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKK1AR
		Dilution Factor: 1		Analysis Time..: 15:35		

NOTE(S):

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001

General Chemistry

Lot-Sample #...: F1H110460-013 Work Order #...: MLKKK Matrix.....: WATER
Date Sampled...: 08/10/11 Date Received..: 08/11/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	206	20.0	mg/L	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 100		Analysis Time..: 01:42		
Fluoride	0.34	0.10	mg/L	MCAWW 300.0A	08/12/11	1224143
		Dilution Factor: 1		Analysis Time..: 01:48		
Nitrate	43.8	2.0	mg/L	MCAWW 300.0A	08/12/11	1224144
		Dilution Factor: 100		Analysis Time..: 02:16		
Nitrite	0.15 B	0.20	mg/L	MCAWW 300.0A	08/12/11	1224145
		Dilution Factor: 10		Analysis Time..: 02:02		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224146
		Dilution Factor: 1		Analysis Time..: 01:48		
Sulfate	787	50.0	mg/L	MCAWW 300.0A	08/12/11	1224147
		Dilution Factor: 100		Analysis Time..: 02:16		
Total Alkalinity	85.6	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	2170	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-014 Work Order #...: MLKKN1A1 Matrix.....: WATER
Date Sampled...: 08/10/11 11:15 Date Received..: 08/11/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 18:12
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	**0.19 J**	**1.0**	**ug/L**
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**2.9**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**2.9**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.75 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.43 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	**2.4**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	**0.28 J**	**5.0**	**ug/L**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001

GC/MS Volatiles

Lot-Sample #...: F1H110460-014 **Work Order #...:** MLKKN1A1 **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	111	(85 - 115)
1,2-Dichloroethane-d4	108	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001

TOTAL Metals

Lot-Sample #...: F1H110460-014 Matrix.....: WATER
Date Sampled...: 08/10/11 11:15 Date Received..: 08/11/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1224017						
Uranium	**23.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/12-08/17/11**	**MLKKN1AT**
		Dilution Factor: 1		Analysis Time..: 23:38		
Prep Batch #...: 1224018						
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1A4
		Dilution Factor: 1		Analysis Time..: 15:41		
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1A5
		Dilution Factor: 1		Analysis Time..: 15:41		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1A3
		Dilution Factor: 1		Analysis Time..: 15:41		
Barium	**56.9**	**50.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKN1A6**
		Dilution Factor: 1		Analysis Time..: 15:41		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1A7
		Dilution Factor: 1		Analysis Time..: 15:41		
Calcium	**274000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKN1A8**
		Dilution Factor: 1		Analysis Time..: 15:41		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1A9
		Dilution Factor: 1		Analysis Time..: 15:41		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AA
		Dilution Factor: 1		Analysis Time..: 15:41		
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AC
		Dilution Factor: 1		Analysis Time..: 15:41		
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AD
		Dilution Factor: 1		Analysis Time..: 15:41		
Iron	**30.2 J**	**100**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKN1AE**
		Dilution Factor: 1		Analysis Time..: 15:41		
Magnesium	**106000**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKN1AF**
		Dilution Factor: 1		Analysis Time..: 15:41		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001

TOTAL Metals

Lot-Sample #...: F1H110460-014 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**69.4**	**15.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKN1AG**
		Dilution Factor: 1		Analysis Time..: 15:41		
Sodium	**105000 B**	**10000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLKKN1AH**
		Dilution Factor: 10		Analysis Time..: 18:27		
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AJ
		Dilution Factor: 1		Analysis Time..: 15:41		
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AK
		Dilution Factor: 1		Analysis Time..: 15:41		
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AL
		Dilution Factor: 1		Analysis Time..: 15:41		
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AM
		Dilution Factor: 1		Analysis Time..: 15:41		
Strontium	**4990**	**5.0**	**ug/L**	**SW846 6010C**	**08/12-08/20/11**	**MLKKN1AN**
		Dilution Factor: 1		Analysis Time..: 15:41		
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AP
		Dilution Factor: 1		Analysis Time..: 15:41		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AQ
		Dilution Factor: 1		Analysis Time..: 15:41		
Zinc	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLKKN1AR
		Dilution Factor: 1		Analysis Time..: 15:41		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001

General Chemistry

Lot-Sample #...: F1H110460-014 Work Order #...: MLKKN Matrix.....: WATER
Date Sampled...: 08/10/11 11:15 Date Received..: 08/11/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	206	20.0	mg/L	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 100		Analysis Time..: 01:57		
Fluoride	0.34	0.10	mg/L	MCAWW 300.0A	08/12/11	1224143
		Dilution Factor: 1		Analysis Time..: 02:31		
Nitrate	44.8	2.0	mg/L	MCAWW 300.0A	08/12/11	1224144
		Dilution Factor: 100		Analysis Time..: 03:00		
Nitrite	0.10 B	0.20	mg/L	MCAWW 300.0A	08/12/11	1224145
		Dilution Factor: 10		Analysis Time..: 02:45		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224146
		Dilution Factor: 1		Analysis Time..: 02:31		
Sulfate	782	50.0	mg/L	MCAWW 300.0A	08/12/11	1224147
		Dilution Factor: 100		Analysis Time..: 03:00		
Total Alkalinity	88.4	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	2130	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H110460 **Work Order #...:** MLTVV1AA **Matrix.....:** WATER
MB Lot-Sample #: F1H180000-199

Prep Date.....: 08/18/11 **Analysis Time..:** 11:50
Analysis Date..: 08/18/11 **Prep Batch #...:** 1230199
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	107	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H110460 Work Order #...: MLTVV1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	106	(70 - 120)		
4-Bromofluorobenzene	100	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H120000-017 **Prep Batch #...:** 1224017						
Uranium	ND	1.0	ug/L	SW846 6020A	08/12-08/17/11	MLK321AA
		Dilution Factor: 1				
		Analysis Time..: 21:19				
MB Lot-Sample #: F1H120000-018 **Prep Batch #...:** 1224018						
Aluminum	ND	200	ug/L	SW846 6010C	08/12-08/20/11	MLK351AD
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Antimony	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AU
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AA
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Barium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AE
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AF
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AH
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Calcium	ND	1000	ug/L	SW846 6010C	08/12-08/20/11	MLK351AG
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Chromium	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AK
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AJ
		Dilution Factor: 1				
		Analysis Time..: 13:13				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AL
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Iron	ND	100	ug/L	SW846 6010C	08/12-08/20/11	MLK351AM
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Lead	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AT
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Magnesium	ND	1000	ug/L	SW846 6010C	08/12-08/20/11	MLK351AN
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Manganese	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AP
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Nickel	ND	40.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AR
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Selenium	ND	15.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AV
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Silver	ND	10.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AC
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Sodium	**498 J**	**1000**	**ug/L**	**SW846 6010C**	**08/12-08/19/11**	**MLK351AQ**
		Dilution Factor: 1				
		Analysis Time..: 16:13				
Strontium	ND	5.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AW
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Thallium	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351AX
		Dilution Factor: 1				
		Analysis Time..: 13:13				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351A0
		Dilution Factor: 1				
		Analysis Time..: 13:13				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/12-08/20/11	MLK351A1
		Dilution Factor: 1				
		Analysis Time..: 13:13				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H110460 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLTCF1AA		MB Lot-Sample #:	F1H120000-148	
	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Fluoride		Work Order #: MLPTC1AA		MB Lot-Sample #:	F1H120000-143	
	ND	0.10	mg/L	MCAWW 300.0A	08/11/11	1224143
		Dilution Factor: 1				
		Analysis Time..: 07:04				
Nitrate		Work Order #: MLPTD1AA		MB Lot-Sample #:	F1H120000-144	
	ND	0.020	mg/L	MCAWW 300.0A	08/11/11	1224144
		Dilution Factor: 1				
		Analysis Time..: 07:04				
Nitrite		Work Order #: MLPTF1AA		MB Lot-Sample #:	F1H120000-145	
	ND	0.020	mg/L	MCAWW 300.0A	08/11/11	1224145
		Dilution Factor: 1				
		Analysis Time..: 07:04				
Phosphate as P, Ortho		Work Order #: MLPTG1AA		MB Lot-Sample #:	F1H120000-146	
	0.084 B	**0.50**	**mg/L**	**MCAWW 300.0A**	**08/11/11**	**1224146**
		Dilution Factor: 1				
		Analysis Time..: 07:04				
Sulfate		Work Order #: MLPTJ1AA		MB Lot-Sample #:	F1H120000-147	
	ND	0.50	mg/L	MCAWW 300.0A	08/11/11	1224147
		Dilution Factor: 1				
		Analysis Time..: 07:04				
Total Alkalinity		Work Order #: MLWW41AC		MB Lot-Sample #:	F1H220000-085	
	ND	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLQ6G1AA		MB Lot-Sample #:	F1H170000-108	
	ND	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H110460 Work Order #...: MLTVV1AC Matrix.....: WATER
LCS Lot-Sample#: F1H180000-199
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 10:30
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichloroethane	97	(70 - 130)	SW846 8260B
Benzene	95	(80 - 120)	SW846 8260B
Trichloroethene	90	(70 - 125)	SW846 8260B
1,2-Dichloropropane	91	(75 - 125)	SW846 8260B
Bromodichloromethane	98	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	98	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	107	(55 - 140)	SW846 8260B
Toluene	103	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	102	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	96	(75 - 125)	SW846 8260B
2-Hexanone	95	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	103	(60 - 135)	SW846 8260B
Chlorobenzene	96	(80 - 120)	SW846 8260B
Bromoform	108	(70 - 130)	SW846 8260B
Ethylbenzene	101	(75 - 125)	SW846 8260B
Styrene	109	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	93	(65 - 130)	SW846 8260B
Tetrachloroethene	101	(45 - 150)	SW846 8260B
1,2-Dichlorobenzene	100	(70 - 120)	SW846 8260B
cis-1,3-Dichloropropene	104	(70 - 130)	SW846 8260B
Dibromochloromethane	104	(60 - 135)	SW846 8260B
Vinyl chloride	87	(50 - 145)	SW846 8260B
Bromomethane	99	(30 - 145)	SW846 8260B
Chloroethane	90	(60 - 135)	SW846 8260B
Acetone	93	(40 - 140)	SW846 8260B
1,1-Dichloroethene	95	(70 - 130)	SW846 8260B
Methylene chloride	88	(55 - 140)	SW846 8260B
Carbon disulfide	84	(35 - 160)	SW846 8260B
1,1-Dichloroethane	93	(70 - 135)	SW846 8260B
2-Butanone	88	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	96	(85 - 115)	SW846 8260B
Chloroform	93	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	99	(65 - 130)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H110460 **Work Order #...:** MLTVV1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H180000-199

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Carbon tetrachloride	**99**	**(65 - 140)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	101	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H120000-017 **Prep Batch #...:** 1224017					
Uranium	103	(80 - 120)	SW846 6020A	08/12-08/17/11	MLK321AC
		Dilution Factor: 1		Analysis Time..: 21:25	
LCS Lot-Sample#: F1H120000-018 **Prep Batch #...:** 1224018					
Arsenic	101	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A2
		Dilution Factor: 1		Analysis Time..: 13:20	
Silver	92	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A3
		Dilution Factor: 1		Analysis Time..: 13:20	
Aluminum	100	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A4
		Dilution Factor: 1		Analysis Time..: 13:20	
Barium	103	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A5
		Dilution Factor: 1		Analysis Time..: 13:20	
Beryllium	108	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A6
		Dilution Factor: 1		Analysis Time..: 13:20	
Calcium	104	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A7
		Dilution Factor: 1		Analysis Time..: 13:20	
Cadmium	102	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A8
		Dilution Factor: 1		Analysis Time..: 13:20	
Cobalt	98	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351A9
		Dilution Factor: 1		Analysis Time..: 13:20	
Chromium	98	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CA
		Dilution Factor: 1		Analysis Time..: 13:20	
Copper	97	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CC
		Dilution Factor: 1		Analysis Time..: 13:20	
Iron	102	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CD
		Dilution Factor: 1		Analysis Time..: 13:20	
Magnesium	100	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CE
		Dilution Factor: 1		Analysis Time..: 13:20	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	101	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CF
		Dilution Factor: 1	Analysis Time..: 13:20		
Sodium	111	(80 - 120)	SW846 6010C	08/12-08/19/11	MLK351CG
		Dilution Factor: 1	Analysis Time..: 16:20		
Nickel	99	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CH
		Dilution Factor: 1	Analysis Time..: 13:20		
Lead	99	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CJ
		Dilution Factor: 1	Analysis Time..: 13:20		
Antimony	103	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CK
		Dilution Factor: 1	Analysis Time..: 13:20		
Selenium	102	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CL
		Dilution Factor: 1	Analysis Time..: 13:20		
Strontium	109	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CM
		Dilution Factor: 1	Analysis Time..: 13:20		
Thallium	98	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CN
		Dilution Factor: 1	Analysis Time..: 13:20		
Vanadium	99	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CP
		Dilution Factor: 1	Analysis Time..: 13:20		
Zinc	108	(80 - 120)	SW846 6010C	08/12-08/20/11	MLK351CQ
		Dilution Factor: 1	Analysis Time..: 13:20		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H110460 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLTCF1AC	LCS Lot-Sample#: F1H120000-148		
	91	(90 - 110)	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 1	Analysis Time..: 04:05		
Fluoride		Work Order #: MLPTC1AC	LCS Lot-Sample#: F1H120000-143		
	93	(90 - 110)	MCAWW 300.0A	08/11/11	1224143
		Dilution Factor: 1	Analysis Time..: 06:49		
Nitrate		Work Order #: MLPTD1AC	LCS Lot-Sample#: F1H120000-144		
	97	(90 - 110)	MCAWW 300.0A	08/11/11	1224144
		Dilution Factor: 1	Analysis Time..: 06:49		
Nitrite		Work Order #: MLPTF1AC	LCS Lot-Sample#: F1H120000-145		
	96	(90 - 110)	MCAWW 300.0A	08/11/11	1224145
		Dilution Factor: 1	Analysis Time..: 06:49		
Phosphate as P, Ortho		Work Order #: MLPTG1AC	LCS Lot-Sample#: F1H120000-146		
	97	(90 - 110)	MCAWW 300.0A	08/11/11	1224146
		Dilution Factor: 1	Analysis Time..: 06:49		
Sulfate		Work Order #: MLPTJ1AC	LCS Lot-Sample#: F1H120000-147		
	93	(90 - 110)	MCAWW 300.0A	08/11/11	1224147
		Dilution Factor: 1	Analysis Time..: 06:49		
Total Alkalinity		Work Order #: MLWW41AA	LCS Lot-Sample#: F1H220000-085		
	93	(90 - 110)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLWW41AD	LCS Lot-Sample#: F1H220000-085		
	94	(90 - 110)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLQ6G1AC	LCS Lot-Sample#: F1H170000-108		
	97	(90 - 113)	MCAWW 160.1	08/17-08/22/11	1229108
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H110460 Work Order #...: MLLN11CV-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-006 MLLN11CW-MSD
Date Sampled...: 08/11/11 09:15 Date Received..: 08/12/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 19:05
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	86	(70 - 130)			SW846 8260B
	98	(70 - 130)	13	(0-20)	SW846 8260B
Dibromochloromethane	94	(60 - 135)			SW846 8260B
	103	(60 - 135)	8.5	(0-20)	SW846 8260B
Vinyl chloride	78	(50 - 145)			SW846 8260B
	91	(50 - 145)	15	(0-20)	SW846 8260B
Bromomethane	87	(30 - 145)			SW846 8260B
	95	(30 - 145)	9.2	(0-20)	SW846 8260B
Chloroethane	87	(60 - 135)			SW846 8260B
	97	(60 - 135)	11	(0-20)	SW846 8260B
Acetone	94	(40 - 140)			SW846 8260B
	96	(40 - 140)	2.0	(0-20)	SW846 8260B
1,1-Dichloroethene	97	(70 - 130)			SW846 8260B
	105	(70 - 130)	7.2	(0-20)	SW846 8260B
Methylene chloride	88	(55 - 140)			SW846 8260B
	95	(55 - 140)	7.3	(0-20)	SW846 8260B
Carbon disulfide	91	(35 - 160)			SW846 8260B
	96	(35 - 160)	5.6	(0-20)	SW846 8260B
1,1-Dichloroethane	92	(70 - 135)			SW846 8260B
	100	(70 - 135)	8.3	(0-20)	SW846 8260B
2-Butanone	88	(30 - 150)			SW846 8260B
	94	(30 - 150)	7.1	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	91	(85 - 115)			SW846 8260B
	100	(85 - 115)	9.8	(0-20)	SW846 8260B
Chloroform	89	(65 - 135)			SW846 8260B
	97	(65 - 135)	8.4	(0-20)	SW846 8260B
1,1,1-Trichloroethane	95	(65 - 130)			SW846 8260B
	103	(65 - 130)	8.8'	(0-20)	SW846 8260B
Carbon tetrachloride	95	(65 - 140)			SW846 8260B
	103	(65 - 140)	8.2	(0-20)	SW846 8260B
1,2-Dichloroethane	89	(70 - 130)			SW846 8260B
	100	(70 - 130)	12	(0-20)	SW846 8260B
Benzene	92	(80 - 120)			SW846 8260B
	100	(80 - 120)	8.3	(0-20)	SW846 8260B
Trichloroethene	89	(70 - 125)			SW846 8260B
	93	(70 - 125)	4.5	(0-20)	SW846 8260B
1,2-Dichloropropane	89	(75 - 125)			SW846 8260B
	96	(75 - 125)	8.4	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H110460 Work Order #...: MLLN11CV-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-006 MLLN11CW-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	94	(75 - 120)			SW846 8260B
	102	(75 - 120)	8.1	(0-20)	SW846 8260B
1,1,2-Trichloroethane	92	(75 - 125)			SW846 8260B
	102	(75 - 125)	11	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	96	(55 - 140)			SW846 8260B
	106	(55 - 140)	9.7	(0-20)	SW846 8260B
Toluene	100	(75 - 120)			SW846 8260B
	103	(75 - 120)	3.2	(0-20)	SW846 8260B
1,3-Dichlorobenzene	98	(75 - 125)			SW846 8260B
	102	(75 - 125)	3.4	(0-20)	SW846 8260B
1,4-Dichlorobenzene	94	(75 - 125)			SW846 8260B
	99	(75 - 125)	4.5	(0-20)	SW846 8260B
2-Hexanone	82	(55 - 130)			SW846 8260B
	98	(55 - 130)	17	(0-20)	SW846 8260B
4-Methyl-2-pentanone	88	(60 - 135)			SW846 8260B
	102	(60 - 135)	15	(0-20)	SW846 8260B
Chlorobenzene	93	(80 - 120)			SW846 8260B
	98	(80 - 120)	5.5	(0-20)	SW846 8260B
Bromoform	100	(70 - 130)			SW846 8260B
	108	(70 - 130)	7.6	(0-20)	SW846 8260B
Ethylbenzene	98	(75 - 125)			SW846 8260B
	104	(75 - 125)	5.7	(0-20)	SW846 8260B
Styrene	106	(65 - 135)			SW846 8260B
	112	(65 - 135)	6.0	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	90	(65 - 130)			SW846 8260B
	99	(65 - 130)	9.1	(0-20)	SW846 8260B
Tetrachloroethene	96	(45 - 150)			SW846 8260B
	101	(45 - 150)	5.7	(0-20)	SW846 8260B
1,2-Dichlorobenzene	95	(70 - 120)			SW846 8260B
	100	(70 - 120)	5.3	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
	105	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
	108	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
	105	(70 - 120)
4-Bromofluorobenzene	97	(75 - 120)
	98	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER
Date Sampled...: 08/10/11 08:30 **Date Received..:** 08/11/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H110460-001 **Prep Batch #...:** 1224017							
Uranium	102	(80 - 120)			SW846 6020A	08/12-08/17/11	MLKHP1A5
	102	(80 - 120)	0.17	(0-20)	SW846 6020A	08/12-08/17/11	MLKHP1A6
		Dilution Factor: 1					
		Analysis Time..: 21:45					
MS Lot-Sample #: F1H110460-001 **Prep Batch #...:** 1224018							
Aluminum	99	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CC
	99	(80 - 120)	0.34	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CD
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Antimony	100	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1C9
	99	(80 - 120)	1.1	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1DA
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Arsenic	100	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1A7
	99	(80 - 120)	1.2	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1A8
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Barium	97	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CE
	98	(80 - 120)	1.0	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CF
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Beryllium	104	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CG
	105	(80 - 120)	1.1	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CH
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Cadmium	97	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CL
	95	(80 - 120)	1.7	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CM
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Calcium	85	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CJ
	90	(80 - 120)	0.43	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CK
		Dilution Factor: 1					
		Analysis Time..: 13:32					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER
Date Sampled...: 08/10/11 08:30 **Date Received..:** 08/11/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	93	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CQ
	93	(80 - 120)	0.12	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CR
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Cobalt	92	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CN
	92	(80 - 120)	0.53	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CP
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Copper	95	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CT
	95	(80 - 120)	0.19	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CU
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Iron	96	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CV
	95	(80 - 120)	0.44	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CW
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Lead	92	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1C7
	91	(80 - 120)	1.4	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1C8
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Magnesium	90	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1CX
	93	(80 - 120)	0.86	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1C0
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Manganese	95	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1C1
	95	(80 - 120)	0.34	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1C2
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Nickel	93	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1C5
	92	(80 - 120)	1.8	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1C6
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Selenium	100	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1DC
	98	(80 - 120)	2.3	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1DD
		Dilution Factor: 1					
		Analysis Time..: 13:32					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H110460 **Matrix.....:** WATER
Date Sampled...: 08/10/11 08:30 **Date Received..:** 08/11/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	90	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1A9
	90	(80 - 120)	0.34	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1CA
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Sodium	80	(80 - 120)			SW846 6010C	08/12-08/19/11	MLKHP1C3
	85	(80 - 120)	0.17	(0-20)	SW846 6010C	08/12-08/19/11	MLKHP1C4
		Dilution Factor: 5					
		Analysis Time..: 16:32					
Strontium	103	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1DE
	103	(80 - 120)	0.09	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1DF
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Thallium	91	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1DG
	90	(80 - 120)	1.2	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1DH
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Vanadium	95	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1DJ
	95	(80 - 120)	0.32	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1DK
		Dilution Factor: 1					
		Analysis Time..: 13:32					
Zinc	106	(80 - 120)			SW846 6010C	08/12-08/20/11	MLKHP1DL
	104	(80 - 120)	2.2	(0-20)	SW846 6010C	08/12-08/20/11	MLKHP1DM
		Dilution Factor: 1					
		Analysis Time..: 13:32					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H110460 **Matrix.....:** WATER
Date Sampled...: 08/10/11 08:30 **Date Received..:** 08/11/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLKJL1CV		MS Lot-Sample #: F1H110460-008	
	103	(90 - 110)	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 500	Analysis Time..: 11:47		
Chloride		Work Order #...: MLLN11CG		MS Lot-Sample #: F1H120447-006	
	95	(90 - 110)	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100	Analysis Time..: 05:18		
Fluoride		Work Order #...: MLKJL1CH		MS Lot-Sample #: F1H110460-008	
	102	(90 - 110)	MCAWW 300.0A	08/11/11	1224143
		Dilution Factor: 1	Analysis Time..: 07:18		
Nitrate		Work Order #...: MLKJL1CK		MS Lot-Sample #: F1H110460-008	
	98	(90 - 110)	MCAWW 300.0A	08/11/11	1224144
		Dilution Factor: 1	Analysis Time..: 07:18		
Nitrite		Work Order #...: MLKJL1CM		MS Lot-Sample #: F1H110460-008	
	58 N	(90 - 110)	MCAWW 300.0A	08/11/11	1224145
		Dilution Factor: 10	Analysis Time..: 07:33		
Phosphate as P, Ortho		Work Order #...: MLKJL1CP		MS Lot-Sample #: F1H110460-008	
	77 N	(90 - 110)	MCAWW 300.0A	08/11/11	1224146
		Dilution Factor: 1	Analysis Time..: 07:18		
Sulfate		Work Order #...: MLKJL1CR		MS Lot-Sample #: F1H110460-008	
	97	(90 - 110)	MCAWW 300.0A	08/11/11	1224147
		Dilution Factor: 10	Analysis Time..: 07:33		
Total Alkalinity		Work Order #...: MLKJ51CF		MS Lot-Sample #: F1H110460-009	
	96	(80 - 120)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H110460 **Work Order #...:** MLLN1-SMP MLLN1-DUP **Matrix.....:** WATER

Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #:	F1H120447-006	
	87.7	86.1	mg/L	1.9	(0-20)	MCAWW 300.0A	08/12/11	1224148

Dilution Factor: 100 Analysis Time..: 05:18

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H110460 **Work Order #...:** MLKJL-SMP MLKJL-DUP **Matrix.....:** WATER

Date Sampled...: 08/10/11 08:30 **Date Received..:** 08/11/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H110460-008		
	1240	1240	mg/L	0.81	(0-0.0)	MCAWW 160.1	08/17-08/22/11	1229108
			Dilution Factor: 1			Analysis Time..: 00:00		
Fluoride						SD Lot-Sample #: F1H110460-008		
	1.2	1.2	mg/L	1.0	(0-20)	MCAWW 300.0A	08/11/11	1224143
			Dilution Factor: 1			Analysis Time..: 07:18		
Nitrate						SD Lot-Sample #: F1H110460-008		
	0.044	0.043	mg/L	0.76	(0-20)	MCAWW 300.0A	08/11/11	1224144
			Dilution Factor: 1			Analysis Time..: 07:18		
Nitrite						SD Lot-Sample #: F1H110460-008		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/11/11	1224145
			Dilution Factor: 10			Analysis Time..: 07:33		
Phosphate as P, Ortho						SD Lot-Sample #: F1H110460-008		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/11/11	1224146
			Dilution Factor: 1			Analysis Time..: 07:18		
Sulfate						SD Lot-Sample #: F1H110460-008		
	50.2	49.7	mg/L	1.1	(0-20)	MCAWW 300.0A	08/11/11	1224147
			Dilution Factor: 10			Analysis Time..: 07:33		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H110460 **Work Order #...:** MLKJ5-SMP MLKJ5-DUP **Matrix.....:** WATER

Date Sampled...: 08/10/11 09:30 **Date Received..:** 08/11/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #:	F1H110460-009	
	256	257	mg/L	0.31	(0-20)	MCAWW 310.1	08/22/11	1234085
			Dilution Factor: 1			Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H110460-001
Work Order: MLKHP
Matrix: WATER

Date Collected: 08/10/11 0830
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 57
Uranium 234	31.4		2.9	0.1	0.06	08/19/11	08/21/11
Uranium 235/236	1.52		0.33	0.10	0.04	08/19/11	08/21/11
Uranium 238	30.4		2.8	0.1	0.03	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H110460-002
Work Order: MLKHV
Matrix: WATER

Date Collected: 08/10/11 0930
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 67
Uranium 234	18.5		1.8	0.1	0.06	08/19/11	08/21/11
Uranium 235/236	0.70		0.20	0.10	0.07	08/19/11	08/21/11
Uranium 238	17.4		1.7	0.1	0.06	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H110460-003
Work Order: MLKH4
Matrix: WATER

Date Collected: 08/10/11 1015
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 37
Uranium 234	68.6		6.2	0.1	0.09	08/19/11	08/21/11
Uranium 235/236	3.38		0.64	0.10	0.06	08/19/11	08/21/11
Uranium 238	67.1		6.1	0.1	0.2	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H110460-004
Work Order: MLKH8
Matrix: WATER

Date Collected: 08/10/11 1320
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 53
Uranium 234	32.1		3.0	0.1	0.09	08/19/11	08/21/11
Uranium 235/236	1.62		0.35	0.10	0.1	08/19/11	08/21/11
Uranium 238	32.7		3.0	0.1	0.08	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000 DISSOLVED

Radiochemistry

Lab Sample ID: F1H110460-005
Work Order: MLKJD
Matrix: WATER

Date Collected: 08/10/11 0000
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1231145		Yld % 35
Uranium 234	70.0		6.3	0.1	0.1	08/19/11	08/21/11
Uranium 235/236	3.67		0.66	0.10	0.06	08/19/11	08/21/11
Uranium 238	67.5		6.1	0.1	0.1	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H110460-006
Work Order: MLKJE
Matrix: WATER

Date Collected: 08/10/11 0000
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 74
Uranium 234	10.8		1.1	0.1	0.04	08/19/11	08/21/11
Uranium 235/236	0.41		0.14	0.10	0.07	08/19/11	08/21/11
Uranium 238	8.77		0.93	0.10	0.06	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H110460-007
Work Order: MLKJJ
Matrix: WATER

Date Collected: 08/10/11 1115
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1231145		Yld % 74
Uranium 234	10.8		1.1	0.1	0.06	08/19/11	08/21/11
Uranium 235/236	0.46		0.15	0.10	0.06	08/19/11	08/21/11
Uranium 238	8.36		0.89	0.10	0.06	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW604D0001

Radiochemistry

Lab Sample ID: F1H110460-008
Work Order: MLKJL
Matrix: WATER

Date Collected: 08/10/11 0830
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1231145		Yld % 45
Uranium 234	37.1		3.5	0.1	0.1	08/19/11	08/21/11
Uranium 235/236	1.79		0.40	0.10	0.05	08/19/11	08/21/11
Uranium 238	37.0		3.5	0.1	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709D0001

Radiochemistry

Lab Sample ID: F1H110460-009
Work Order: MLKJ5
Matrix: WATER

Date Collected: 08/10/11 0930
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 65
Uranium 234	16.8		1.6	0.1	0.06	08/19/11	08/21/11
Uranium 235/236	0.71		0.20	0.10	0.06	08/19/11	08/21/11
Uranium 238	16.0		1.6	0.1	0.07	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0001

Radiochemistry

Lab Sample ID: F1H110460-010
Work Order: MLKKA
Matrix: WATER

Date Collected: 08/10/11 1015
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 40
Uranium 234	67.5		6.1	0.1	0.1	08/19/11	08/21/11
Uranium 235/236	3.43		0.61	0.10	0.1	08/19/11	08/21/11
Uranium 238	65.8		5.9	0.1	0.1	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260001

Radiochemistry

Lab Sample ID: F1H110460-011
Work Order: MLKKD
Matrix: WATER

Date Collected: 08/10/11 1320
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 52
Uranium 234	34.7		3.2	0.1	0.09	08/19/11	08/21/11
Uranium 235/236	1.97		0.39	0.10	0.07	08/19/11	08/21/11
Uranium 238	35.0		3.2	0.1	0.03	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9000

Radiochemistry

Lab Sample ID: F1H110460-012
Work Order: MLKKH
Matrix: WATER

Date Collected: 08/10/11 0000
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 38
Uranium 234	69.2		6.2	0.1	0.1	08/19/11	08/21/11
Uranium 235/236	3.13		0.60	0.10	0.10	08/19/11	08/21/11
Uranium 238	68.1		6.1	0.1	0.08	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9001

Radiochemistry

Lab Sample ID: F1H110460-013
Work Order: MLKKK
Matrix: WATER

Date Collected: 08/10/11 0000
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 80
Uranium 234	9.54		0.99	0.10	0.05	08/19/11	08/21/11
Uranium 235/236	0.30		0.12	0.10	0.05	08/19/11	08/21/11
Uranium 238	7.26		0.79	0.10	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0001

Radiochemistry

Lab Sample ID: F1H110460-014
Work Order: MLKKN
Matrix: WATER

Date Collected: 08/10/11 1115
Date Received: 08/11/11 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231145	Yld % 79
Uranium 234	9.35		0.98	0.10	0.05	08/19/11	08/21/11
Uranium 235/236	0.38		0.13	0.10	0.03	08/19/11	08/21/11
Uranium 238	7.31		0.80	0.10	0.05	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H110460
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1231145		Yld % 98		F1H190000-145B
Uranium 234	0.005	U	0.015	0.100	0.033		08/19/11	08/21/11
Uranium 235/236	0.0	U	0.0089	0.100	0.024		08/19/11	08/21/11
Uranium 238	0.005	U	0.015	0.100	0.032		08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F1H110460
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ+/-)	% Yld	% Rec	QC Control Limits	Precision	
							Lab Sample ID		
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**A-01-R MOD**			**F1H190000-145C**		
Uranium 234		3.26	3.55	0.47	79	109	(76 - 136)		
	Spk 2	3.26	3.11	0.40	88	95	(76 - 136)	13	%RPD
Uranium 238		3.39	3.48	0.46	79	103	(76 - 134)		
	Spk 2	3.39	3.41	0.43	88	101	(76 - 134)	2	%RPD
		Batch #:	1231145		Analysis Date:		08/21/11		

NOTE(S):

Calculations are performed before rounding to avoid round-off error in calculated results

F1H110460

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R256

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-11

Project: 140415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 0
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A04MW604D0001 DISSOLVED			2011-08-10 / 830	MLKHP	WATER

SAMPLE COMMENTS:

SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Ise U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A04DMW709DD0001 DISSOLVED			2011-08-10 / 930	MLKHV	WATER

SAMPLE COMMENTS:

MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R256

Project Manager: LMF
Quote #: 89251
SDG:

Project: 140415
Guteryl Steel

PO#: 697886
Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-11
Analytical Due Date: 2011-08-19
Report Due Date: 2011-08-22
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A04BMW605D0001 DISSOLVED			2011-08-10 / 1015	MLKH4	WATER

SAMPLE COMMENTS:

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

CLIENT ANALYSIS SUMMARY

Storage Loc: TestAmerica St. Louis R256

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706 Shaw Environmental & Infrastructure Inc

Quote #: 89251 SDG:
Guteryl Steel
Report to: Kevin Cronin

#SMPS In LOT: 0

Date Received: 2011-08-11
Analytical Due Date: 2011-08-19
Report Due Date: 2011-08-22
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
4	A04BMW260001 DISSOLVED			2011-08-10 / 1320	MLKH8	WATER

SAMPLE COMMENTS:

ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

F1H110460

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R256

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-11

Analytical Due Date: 2011-08-19

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	A04BMW9000 DISSOLVED			2011-08-10 / 0	MLKJD	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	A04BMW9001 DISSOLVED			2011-08-10 / 0	MLKJE	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

Storage Loc: TestAmerica St. Louis R256

Project Manager: LMF
Quote #: 89251
SDG:
Project: 140415
Guteryl Steel
PO#: 697886
Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 0

Date Received: 2011-08-11
Analytical Due Date: 2011-08-19
Report Due Date: 2011-08-22
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	A04DMW704DD0001 DISSOLVED			2011-08-10 / 1115	MLKJJ	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-11

Analytical Due Date: 2011-08-19

Report Due Date: 2011-08-22

Report Type: B Standard Report

#SMPS in LOT: 0 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography, Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE # 8 | CLIENT SAMPLE ID: A04MW604D0001 | Site ID | Client Matrix: WATER | DATE/TIME SAMPLED: 2011-08-10 / 830 | WORKORDER: MLKJL

SAMPLE COMMENTS:

CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	A04DMW709D0001			2011-08-10 / 930	MLKJ5	WATER

SAMPLE COMMENTS:

PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H110460

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R256,V11

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-11

Analytical Due Date: 2011-08-19

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
10	A04BMW605D0001			2011-08-10 / 1015	MLKKA	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

Storage Loc: R256,V11

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-11

Analytical Due Date: 2011-08-19

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium lstead of 200.8

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
11	A04BMW260001			2011-08-10 / 1320	MLKKD	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANOARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	08		
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
12	A04BMW9000			2011-08-10 / 0	MLKKH	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H110460

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R256,V11

Project Manager: LMF
Quote #: 89251 SDG:
Project: 140415 Guteryl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 0

Date Received: 2011-08-11
Analytical Due Date: 2011-08-19
Report Due Date: 2011-08-22
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	*Extraction Chromatography - Sequential Actinides*	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
13	A04BMW9001			2011-08-10 / 0	MLKKK	WATER

SAMPLE COMMENTS:

CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R256,V11

Project Manager: LMF
Quote #: 89251 SDG:
Project: 140415 Guteryl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 0

Date Received: 2011-08-11
Analytical Due Date: 2011-08-19
Report Due Date: 2011-08-22
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
14	A04DMW704DD0001			2011-08-10 / 1115	MLKKN	WATER

SAMPLE COMMENTS:

CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H110460

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R256,V11

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 0

Date Received: 2011-08-11

Analytical Due Date: 2011-08-19

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A, Phosphate as P, Ortho	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

estAmerica St. Louis
715 Rider Trail North
th City, MO 63045
one 314.298.8566 fax 314.298.8757

cal 17

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/10/2011	COC No: 006
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
ncinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below			SDG No.
3) 782-4807 FAX	[X] 2 weeks			
oject Name: Former Guterl Specialty Steel Corporation FUSRA	[ ] 1 week			
e: Lockport, NY	[ ] 2 days			
) #	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
4MW604D0001	8/10/2011	0830	Grab	GW	10	X		X	X	X	X	X	X	X					
4DMW709DD0001	8/10/2011	0930	Grab	GW	10	X		X	X	X	X	X	X	X					
4BMW605D0001	8/10/2011	1015	Grab	GW	10	X		X	X	X	X	X	X	X					
4BMW260001	8/10/2011	1320	Grab	GW	10	X		X	X	X	X	X	X	X					
4BMW9000	8/10/2011	---	Grab	GW	10	X		X	X	X	X	X	X	X					
4BMW9001	8/10/2011	---	Grab	GW	10	X		X	X	X	X	X	X	X					
4DMW704DD0001	8/10/2011	1115	Grab	GW	10	X	Dissolved 2xLP	X	X	X 250P	X 500P	X	X	X 3x40					
							Total 2xLP			2500			40	8.11.11					

servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

sible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [X] Disposal By Lab [ ] Archive For _____ Months

ecial Instructions/QC Requirements & Comments:

inquished by: Kurt Cronin	Company: Shaw E & I, Inc.	Date/Time: 8/10/11 1700	Received by:	Company: TEST AMERICA	Date/Time: 8/10/2011 @ 1700
inquished by:	Company: TEST AMERICA	Date/Time: 17:24 8/10/2011	Received by:	Company: TASL	Date/Time: 8.11.11 0930
inquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

1084 8/10/11

TestAmerica St. Louis

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F1H110460 TestAmerica St. Louis

CUR Form #: 0 7 7

CONDITION UPON RECEIPT FORM

Client: Shaw Env.

Quote No: 89251

COC/RFA No: 006

Initiated By: SN Date: 8.11.11 Time: 0930

Shipping Information

Shipper: FedEx UPS DHL Courier Client Other: _____ Multiple Packages: Y N

Shipping # (s):*		Sample Temperature (s):**	
1. 4485 0258 3333	6.	1. 2	6.
2. 3403	7.	2. ambient	7.
3. 3425	8.	3.	8.
4.	9.	4.	9.
5.	10.	5.	10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	Y N	Are there custody seals present on the cooler?	8.	Y N	Are there custody seals present on bottles?
2.	Y N N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N N/A	Do custody seals on bottles appear to be tampered with?
3.	Y N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	Y N	Sample received with Chain of Custody?	11.	Y N N/A	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	Y N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	Y N	Sample received in proper containers?
6.	Y N	Was sample received broken?	13.	Y N N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	Y N	Is sample volume sufficient for analysis?	14.	Y N N/A	Was Internal COC/Worksharc received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

A04DW709DD0001 filtered & total and
6040001
had pH of 7; per L.F. used HNO_3 lot K11059
to correct pH.

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 8/12/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004 rev13, REVISED 05/27/11 \\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin-0004 CUR.doc

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. Y40415

Guteryl Steel

Lot #: F1H120447

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 25, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H120447

This report contains the analytical results for the 10 samples received under chain of custody by TestAmerica in St. Louis on August 12, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1230199 and 1231041
Tertahydrofuran was removed from the initial calibration lowest point due to poor response. Isobutanol, n-Butanol, 2-Chloroethylvinyl ether, 4-Methyl-2-pentanone and 2-Hexanone were removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration. The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

Affected Samples:
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Batch: 1230199
The internal standard(s) recovery is outside the lower QC limit, indicating a potential positive bias. There were no target analytes associated with this internal standard observed above the reporting limit in the sample; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1H120447 (6): A04MW602D0001

Batch: 1231041
The sample was analyzed at a dilution due to high concentrations of target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

The internal standard recoveries are within QC limits as compared to the IS limits set by the CCV for this 12 hour clock. However, the client requirement for DOD4.1 has the IS limits set to the mid-point of the ICAL as requested. The internal standard(s) recovery is outside the lower QC limit, indicating a potential positive bias. There were no target analytes associated with this internal standard observed above the reporting limit in the sample; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1227139
The MS (MSD) recovery for calcium and sodium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

Strontium was observed in the CCB above the reporting limit. Associated samples which exhibit concentrations greater than ten (10) times the concentrations observed in the CCB, do not require re-analysis.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H120447 (1): A04MW602D0001 DISSOLVED
F1H120447 (2): A04MW702DD0001 DISSOLVED
F1H120447 (3): A03AMW13D0001 DISSOLVED
F1H120447 (4): A04DMW708DD0001 DISSOLVED
F1H120447 (5): A04DMW9002 DISSOLVED
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (8): A03AMW13D0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Chloride (MCAWW 300.0A)

Batch: 1224148
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (8): A03AMW13D0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Fluoride (MCAWW 300.0A)

Batch: 1224149
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (8): A03AMW13D0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Sulfate (MCAWW 300.0A)

Batch: 1224153
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (8): A03AMW13D0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Nitrite as N (MCAWW 300.0A)

Batch: 1224151
The following samples were reported ND at dilution for Nitrite, due to interference with Chloride in the undiluted runs. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (8): A03AMW13D0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1224152
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (8): A03AMW13D0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)
There was insufficient sample provided to perform the sample duplicate, an LCS duplicate was used instead.

Affected Samples:
F1H120447 (1): A04MW602D0001 DISSOLVED
F1H120447 (2): A04MW702DD0001 DISSOLVED
F1H120447 (3): A03AMW13D0001 DISSOLVED
F1H120447 (4): A04DMW708DD0001 DISSOLVED
F1H120447 (5): A04DMW9002 DISSOLVED
F1H120447 (6): A04MW602D0001
F1H120447 (7): A04MW702DD0001
F1H120447 (8): A03AMW13D0001
F1H120447 (9): A04DMW708DD0001
F1H120447 (10): A04DMW9002

There was insufficient sample provided to perform the analysis at the method specified amount. A reduced sample amount was prepared. Count times were adjusted accordingly to meet client reporting limits. The Uranium reporting limit was achieved without adjustment to the count time.

Affected Samples:
F1H120447 (1): A04MW602D0001 DISSOLVED

Total Dissolved Solids (MCAWW 160.1)
The samples were analyzed at a dilution based on high concentrations of target analytes. The reporting limit has been adjusted accordingly.

Affected Samples:
F1H120447 (7): A04MW702DD0001

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H120447

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H120447

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLLNJ	001	A04MW602D0001 DISSOLVED	08/11/11	09:15
MLLNT	002	A04MW702DD0001 DISSOLVED	08/11/11	10:15
MLLNV	003	A03AMW13D0001 DISSOLVED	08/11/11	12:00
MLLNW	004	A04DMW708DD0001 DISSOLVED	08/11/11	14:10
MLLNX	005	A04DMW9002 DISSOLVED	08/11/11	
MLLN1	006	A04MW602D0001	08/11/11	09:15
MLLN7	007	A04MW702DD0001	08/11/11	10:15
MLLN9	008	A03AMW13D0001	08/11/11	12:00
MLLPA	009	A04DMW708DD0001	08/11/11	14:10
MLLPE	010	A04DMW9002	08/11/11	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-001 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**112**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLLNJ1A3**
		Dilution Factor: 1		Analysis Time..: 17:59		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AD
		Dilution Factor: 1		Analysis Time..: 10:13		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AE
		Dilution Factor: 1		Analysis Time..: 10:13		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AC
		Dilution Factor: 1		Analysis Time..: 10:13		
Barium	**26.0 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1AF**
		Dilution Factor: 1		Analysis Time..: 10:13		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AG
		Dilution Factor: 1		Analysis Time..: 10:13		
Calcium	**86100**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1AH**
		Dilution Factor: 1		Analysis Time..: 10:13		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AJ
		Dilution Factor: 1		Analysis Time..: 10:13		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AK
		Dilution Factor: 1		Analysis Time..: 10:13		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AL
		Dilution Factor: 1		Analysis Time..: 10:13		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AM
		Dilution Factor: 1		Analysis Time..: 10:13		
Iron	**57.5 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1AN**
		Dilution Factor: 1		Analysis Time..: 10:13		
Magnesium	**39500**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1AP**
		Dilution Factor: 1		Analysis Time..: 10:13		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**8.4 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1AQ**
		Dilution Factor: 1		Analysis Time..: 10:13		
Sodium	**76300 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLNJ1AR**
		Dilution Factor: 5		Analysis Time..: 13:01		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AT
		Dilution Factor: 1		Analysis Time..: 10:13		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AU
		Dilution Factor: 1		Analysis Time..: 10:13		
Antimony	**6.3 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1AV**
		Dilution Factor: 1		Analysis Time..: 10:13		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1AW
		Dilution Factor: 1		Analysis Time..: 10:13		
Strontium	**500 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1AX**
		Dilution Factor: 1		Analysis Time..: 10:13		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1A0
		Dilution Factor: 1		Analysis Time..: 10:13		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNJ1A1
		Dilution Factor: 1		Analysis Time..: 10:13		
Zinc	**20.5**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNJ1A2**
		Dilution Factor: 1		Analysis Time..: 10:13		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-002 **Matrix.....:** WATER
Date Sampled...: 08/11/11 10:15 **Date Received..:** 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**5.8**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLLNT1AE**
		Dilution Factor: 1		Analysis Time..: 18:26		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AJ
		Dilution Factor: 1		Analysis Time..: 10:32		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AK
		Dilution Factor: 1		Analysis Time..: 10:32		
Arsenic	**2.7 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNT1AH**
		Dilution Factor: 1		Analysis Time..: 10:32		
Barium	**11.4 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNT1AL**
		Dilution Factor: 1		Analysis Time..: 10:32		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AM
		Dilution Factor: 1		Analysis Time..: 10:32		
Calcium	**473000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNT1AN**
		Dilution Factor: 1		Analysis Time..: 10:32		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AP
		Dilution Factor: 1		Analysis Time..: 10:32		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AQ
		Dilution Factor: 1		Analysis Time..: 10:32		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AR
		Dilution Factor: 1		Analysis Time..: 10:32		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AT
		Dilution Factor: 1		Analysis Time..: 10:32		
Iron	ND	100	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AU
		Dilution Factor: 1		Analysis Time..: 10:32		
Magnesium	**171000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNT1AV**
		Dilution Factor: 1		Analysis Time..: 10:32		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**52.4**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNT1AW**
		Dilution Factor: 1		Analysis Time..: 10:32		
Sodium	**176000 B**	**20000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLNT1AX**
		Dilution Factor: 20		Analysis Time..: 13:21		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1A0
		Dilution Factor: 1		Analysis Time..: 10:32		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1A1
		Dilution Factor: 1		Analysis Time..: 10:32		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1A2
		Dilution Factor: 1		Analysis Time..: 10:32		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1A3
		Dilution Factor: 1		Analysis Time..: 10:32		
Strontium	**9540 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNT1A4**
		Dilution Factor: 1		Analysis Time..: 10:32		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AA
		Dilution Factor: 1		Analysis Time..: 10:32		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AC
		Dilution Factor: 1		Analysis Time..: 10:32		
Zinc	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNT1AD
		Dilution Factor: 1		Analysis Time..: 10:32		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03AMW13D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-003 **Matrix.....:** WATER
Date Sampled...: 08/11/11 12:00 **Date Received..:** 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**80.2**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLLNV1AE**
		Dilution Factor: 1		Analysis Time..: 18:39		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AJ
		Dilution Factor: 1		Analysis Time..: 10:45		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AK
		Dilution Factor: 1		Analysis Time..: 10:45		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AH
		Dilution Factor: 1		Analysis Time..: 10:45		
Barium	**61.3**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNV1AL**
		Dilution Factor: 1		Analysis Time..: 10:45		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AM
		Dilution Factor: 1		Analysis Time..: 10:45		
Calcium	**50300**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNV1AN**
		Dilution Factor: 1		Analysis Time..: 10:45		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AP
		Dilution Factor: 1		Analysis Time..: 10:45		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AQ
		Dilution Factor: 1		Analysis Time..: 10:45		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AR
		Dilution Factor: 1		Analysis Time..: 10:45		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AT
		Dilution Factor: 1		Analysis Time..: 10:45		
Iron	**61.8 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNV1AU**
		Dilution Factor: 1		Analysis Time..: 10:45		
Magnesium	**17600**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNV1AV**
		Dilution Factor: 1		Analysis Time..: 10:45		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03AMW13D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**189**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNV1AW**
		Dilution Factor: 1		Analysis Time..: 10:45		
Sodium	**208000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLNV1AX**
		Dilution Factor: 5		Analysis Time..: 13:33		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1A0
		Dilution Factor: 1		Analysis Time..: 10:45		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1A1
		Dilution Factor: 1		Analysis Time..: 10:45		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1A2
		Dilution Factor: 1		Analysis Time..: 10:45		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1A3
		Dilution Factor: 1		Analysis Time..: 10:45		
Strontium	**176 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNV1A4**
		Dilution Factor: 1		Analysis Time..: 10:45		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AA
		Dilution Factor: 1		Analysis Time..: 10:45		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNV1AC
		Dilution Factor: 1		Analysis Time..: 10:45		
Zinc	**168**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNV1AD**
		Dilution Factor: 1		Analysis Time..: 10:45		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-004 **Matrix.....:** WATER
Date Sampled...: 08/11/11 14:10 **Date Received..:** 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**23.0**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLLNW1AE**
		Dilution Factor: 1		Analysis Time..: 18:46		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AJ
		Dilution Factor: 1		Analysis Time..: 10:58		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AK
		Dilution Factor: 1		Analysis Time..: 10:58		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AH
		Dilution Factor: 1		Analysis Time..: 10:58		
Barium	**11.6 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNW1AL**
		Dilution Factor: 1		Analysis Time..: 10:58		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AM
		Dilution Factor: 1		Analysis Time..: 10:58		
Calcium	**182000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNW1AN**
		Dilution Factor: 1		Analysis Time..: 10:58		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AP
		Dilution Factor: 1		Analysis Time..: 10:58		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AQ
		Dilution Factor: 1		Analysis Time..: 10:58		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AR
		Dilution Factor: 1		Analysis Time..: 10:58		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AT
		Dilution Factor: 1		Analysis Time..: 10:58		
Iron	**144**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNW1AU**
		Dilution Factor: 1		Analysis Time..: 10:58		
Magnesium	**51000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNW1AV**
		Dilution Factor: 1		Analysis Time..: 10:58		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**11.0 J**	15.0	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNW1AW**
		Dilution Factor: 1		Analysis Time..: 10:58		
Sodium	**114000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLNW1AX**
		Dilution Factor: 5		Analysis Time..: 13:46		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1A0
		Dilution Factor: 1		Analysis Time..: 10:58		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1A1
		Dilution Factor: 1		Analysis Time..: 10:58		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1A2
		Dilution Factor: 1		Analysis Time..: 10:58		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1A3
		Dilution Factor: 1		Analysis Time..: 10:58		
Strontium	**1970 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLNW1A4**
		Dilution Factor: 1		Analysis Time..: 10:58		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AA
		Dilution Factor: 1		Analysis Time..: 10:58		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AC
		Dilution Factor: 1		Analysis Time..: 10:58		
Zinc	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNW1AD
		Dilution Factor: 1		Analysis Time..: 10:58		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-005 Matrix.....: WATER
Date Sampled...: 08/11/11 Date Received..: 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	23.2	1.0	ug/L	SW846 6020A	08/15-08/17/11	MLLNX1AE
		Dilution Factor: 1		Analysis Time..: 19:06		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AJ
		Dilution Factor: 1		Analysis Time..: 11:17		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AK
		Dilution Factor: 1		Analysis Time..: 11:17		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AH
		Dilution Factor: 1		Analysis Time..: 11:17		
Barium	11.6 J	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AL
		Dilution Factor: 1		Analysis Time..: 11:17		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AM
		Dilution Factor: 1		Analysis Time..: 11:17		
Calcium	177000	1000	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AN
		Dilution Factor: 1		Analysis Time..: 11:17		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AP
		Dilution Factor: 1		Analysis Time..: 11:17		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AQ
		Dilution Factor: 1		Analysis Time..: 11:17		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AR
		Dilution Factor: 1		Analysis Time..: 11:17		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AT
		Dilution Factor: 1		Analysis Time..: 11:17		
Iron	147	100	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AU
		Dilution Factor: 1		Analysis Time..: 11:17		
Magnesium	49400	1000	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AV
		Dilution Factor: 1		Analysis Time..: 11:17		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H120447-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	10.2 J	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AW
		Dilution Factor: 1		Analysis Time..: 11:17		
Sodium	113000 B	5000	ug/L	SW846 6010C	08/15-08/19/11	MLLNX1AX
		Dilution Factor: 5		Analysis Time..: 14:05		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1A0
		Dilution Factor: 1		Analysis Time..: 11:17		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1A1
		Dilution Factor: 1		Analysis Time..: 11:17		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1A2
		Dilution Factor: 1		Analysis Time..: 11:17		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1A3
		Dilution Factor: 1		Analysis Time..: 11:17		
Strontium	1940 B	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1A4
		Dilution Factor: 1		Analysis Time..: 11:17		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AA
		Dilution Factor: 1		Analysis Time..: 11:17		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AC
		Dilution Factor: 1		Analysis Time..: 11:17		
Zinc	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLNX1AD
		Dilution Factor: 1		Analysis Time..: 11:17		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001

GC/MS Volatiles

Lot-Sample #...: F1H120447-006 **Work Order #...:** MLLN11AC **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11
Prep Date.....: 08/18/11 **Analysis Date..:** 08/18/11
Prep Batch #...: 1230199 **Analysis Time..:** 18:38
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.17 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**0.15 J**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001

GC/MS Volatiles

Lot-Sample #...: F1H120447-006 Work Order #...: MLLN11AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	112	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	108	(70 - 120)
4-Bromofluorobenzene	105	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001

TOTAL Metals

Lot-Sample #...: F1H120447-006 Matrix.....: WATER
Date Sampled...: 08/11/11 09:15 Date Received..: 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**113**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLLN11A5**
		Dilution Factor: 1		Analysis Time..: 19:12		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AF
		Dilution Factor: 1		Analysis Time..: 11:24		
Aluminum	**791**	**200**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11AG**
		Dilution Factor: 1		Analysis Time..: 11:24		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AE
		Dilution Factor: 1		Analysis Time..: 11:24		
Barium	**29.2 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11AH**
		Dilution Factor: 1		Analysis Time..: 11:24		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AJ
		Dilution Factor: 1		Analysis Time..: 11:24		
Calcium	**107000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11AK**
		Dilution Factor: 1		Analysis Time..: 11:24		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AL
		Dilution Factor: 1		Analysis Time..: 11:24		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AM
		Dilution Factor: 1		Analysis Time..: 11:24		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AN
		Dilution Factor: 1		Analysis Time..: 11:24		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AP
		Dilution Factor: 1		Analysis Time..: 11:24		
Iron	**861**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11AQ**
		Dilution Factor: 1		Analysis Time..: 11:24		
Magnesium	**46200**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11AR**
		Dilution Factor: 1		Analysis Time..: 11:24		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001

TOTAL Metals

Lot-Sample #...: F1H120447-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**100**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11AT**
		Dilution Factor: 1		Analysis Time..: 11:24		
Sodium	**79100 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLN11AU**
		Dilution Factor: 5		Analysis Time..: 14:12		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AV
		Dilution Factor: 1		Analysis Time..: 11:24		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AW
		Dilution Factor: 1		Analysis Time..: 11:24		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11AX
		Dilution Factor: 1		Analysis Time..: 11:24		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11A0
		Dilution Factor: 1		Analysis Time..: 11:24		
Strontium	**504 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11A1**
		Dilution Factor: 1		Analysis Time..: 11:24		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11A2
		Dilution Factor: 1		Analysis Time..: 11:24		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN11A3
		Dilution Factor: 1		Analysis Time..: 11:24		
Zinc	**38.9**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN11A4**
		Dilution Factor: 1		Analysis Time..: 11:24		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001

General Chemistry

Lot-Sample #...: F1H120447-006 Work Order #...: MLLN1 Matrix.....: WATER
Date Sampled...: 08/11/11 09:15 Date Received..: 08/12/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	87.7	20.0	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100		Analysis Time..: 05:18		
Fluoride	2.1	0.10	mg/L	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 1		Analysis Time..: 04:34		
Nitrate	0.011 B	0.020	mg/L	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1		Analysis Time..: 04:34		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 5		Analysis Time..: 04:49		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1		Analysis Time..: 04:34		
Sulfate	122	5.0	mg/L	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 10		Analysis Time..: 05:03		
Total Alkalinity	320	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	645	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001

GC/MS Volatiles

Lot-Sample #...: F1H120447-007 Work Order #...: MLLN71AN Matrix.....: WATER
Date Sampled...: 08/11/11 10:15 Date Received..: 08/12/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 06:14
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**0.20 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.18 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.35 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001

GC/MS Volatiles

Lot-Sample #...: F1H120447-007 **Work Order #...:** MLLN71AN **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	107	(85 - 115)
1,2-Dichloroethane-d4	108	(70 - 120)
4-Bromofluorobenzene	104	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001

TOTAL Metals

Lot-Sample #...: F1H120447-007 Matrix.....: WATER
Date Sampled...: 08/11/11 10:15 Date Received..: 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**4.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLLN71AG**
		Dilution Factor: 1		Analysis Time..: 19:19		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71AR
		Dilution Factor: 1		Analysis Time..: 11:30		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLLN71AT
		Dilution Factor: 1		Analysis Time..: 11:30		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71AQ
		Dilution Factor: 1		Analysis Time..: 11:30		
Barium	**10.9 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71AU**
		Dilution Factor: 1		Analysis Time..: 11:30		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71AV
		Dilution Factor: 1		Analysis Time..: 11:30		
Calcium	**468000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71AW**
		Dilution Factor: 1		Analysis Time..: 11:30		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71AX
		Dilution Factor: 1		Analysis Time..: 11:30		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71A0
		Dilution Factor: 1		Analysis Time..: 11:30		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71A1
		Dilution Factor: 1		Analysis Time..: 11:30		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71A2
		Dilution Factor: 1		Analysis Time..: 11:30		
Iron	**28.4 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71A3**
		Dilution Factor: 1		Analysis Time..: 11:30		
Magnesium	**181000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71A4**
		Dilution Factor: 1		Analysis Time..: 11:30		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001

TOTAL Metals

Lot-Sample #...: F1H120447-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**54.2**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71A5**
		Dilution Factor: 1		Analysis Time..: 11:30		
Sodium	**204000 B**	**20000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLN71A6**
		Dilution Factor: 20		Analysis Time..: 14:18		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71A7
		Dilution Factor: 1		Analysis Time..: 11:30		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71A8
		Dilution Factor: 1		Analysis Time..: 11:30		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71A9
		Dilution Factor: 1		Analysis Time..: 11:30		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71AA
		Dilution Factor: 1		Analysis Time..: 11:30		
Strontium	**9620 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71AC**
		Dilution Factor: 1		Analysis Time..: 11:30		
Thallium	**4.4 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71AD**
		Dilution Factor: 1		Analysis Time..: 11:30		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN71AE
		Dilution Factor: 1		Analysis Time..: 11:30		
Zinc	**13.1 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN71AF**
		Dilution Factor: 1		Analysis Time..: 11:30		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001

General Chemistry

Lot-Sample #...: F1H120447-007 Work Order #...: MLLN7 Matrix.....: WATER
Date Sampled...: 08/11/11 10:15 Date Received..: 08/12/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	179	20.0	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100		Analysis Time..: 08:25		
Fluoride	1.2	1.0	mg/L	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 10		Analysis Time..: 08:11		
Nitrate	31.8	2.0	mg/L	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 100		Analysis Time..: 08:25		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 10		Analysis Time..: 08:11		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1		Analysis Time..: 07:56		
Sulfate	1960	50.0	mg/L	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 100		Analysis Time..: 08:25		
Total Alkalinity	210	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	3720	50.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 5		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03AMW13D0001

TOTAL Metals

Lot-Sample #...: F1H120447-008 Matrix.....: WATER
Date Sampled...: 08/11/11 12:00 Date Received..: 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**79.8**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLLN91AG**
		Dilution Factor: 1		Analysis Time..: 19:25		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AR
		Dilution Factor: 1		Analysis Time..: 11:37		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AT
		Dilution Factor: 1		Analysis Time..: 11:37		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AQ
		Dilution Factor: 1		Analysis Time..: 11:37		
Barium	**61.8**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN91AU**
		Dilution Factor: 1		Analysis Time..: 11:37		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AV
		Dilution Factor: 1		Analysis Time..: 11:37		
Calcium	**50400**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN91AW**
		Dilution Factor: 1		Analysis Time..: 11:37		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AX
		Dilution Factor: 1		Analysis Time..: 11:37		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91A0
		Dilution Factor: 1		Analysis Time..: 11:37		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91A1
		Dilution Factor: 1		Analysis Time..: 11:37		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91A2
		Dilution Factor: 1		Analysis Time..: 11:37		
Iron	**80.6 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN91A3**
		Dilution Factor: 1		Analysis Time..: 11:37		
Magnesium	**17600**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN91A4**
		Dilution Factor: 1		Analysis Time..: 11:37		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03AMW13D0001

TOTAL Metals

Lot-Sample #...: F1H120447-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**183**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN91A5**
		Dilution Factor: 1		Analysis Time..: 11:37		
Sodium	**217000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLN91A6**
		Dilution Factor: 5		Analysis Time..: 14:24		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91A7
		Dilution Factor: 1		Analysis Time..: 11:37		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91A8
		Dilution Factor: 1		Analysis Time..: 11:37		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91A9
		Dilution Factor: 1		Analysis Time..: 11:37		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AA
		Dilution Factor: 1		Analysis Time..: 11:37		
Strontium	**177 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN91AC**
		Dilution Factor: 1		Analysis Time..: 11:37		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AD
		Dilution Factor: 1		Analysis Time..: 11:37		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLN91AE
		Dilution Factor: 1		Analysis Time..: 11:37		
Zinc	**166**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLN91AF**
		Dilution Factor: 1		Analysis Time..: 11:37		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03AMW13D0001

General Chemistry

Lot-Sample #...: F1H120447-008 Work Order #...: MLLN9 Matrix.....: WATER
Date Sampled...: 08/11/11 12:00 Date Received..: 08/12/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	135	20.0	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100		Analysis Time..: 09:23		
Fluoride	3.6	0.50	mg/L	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 5		Analysis Time..: 08:54		
Nitrate	0.0084 B	0.020	mg/L	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1		Analysis Time..: 08:39		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 5		Analysis Time..: 08:54		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1		Analysis Time..: 08:39		
Sulfate	41.3	2.5	mg/L	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 5		Analysis Time..: 08:54		
Total Alkalinity	396	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	719	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001

GC/MS Volatiles

Lot-Sample #...: F1H120447-009 Work Order #...: MLLPA1CE Matrix.....: WATER
Date Sampled...: 08/11/11 14:10 Date Received..: 08/12/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 08:01
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**2.5**	**2.0**	**ug/L**
Chloroform	**0.34 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**8.7**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**30**	**1.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.37 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	**3.4**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	105	(70 - 120)
4-Bromofluorobenzene	107	(75 - 120)

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001

GC/MS Volatiles

Lot-Sample #...: F1H120447-009 Work Order #...: MLLPA1CE Matrix.....: WATER

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001

GC/MS Volatiles

Lot-Sample #...:	F1H120447-009	Work Order #...:	MLLPA2CE	Matrix.....:	WATER
Date Sampled...:	08/11/11 14:10	Date Received..:	08/12/11		
Prep Date.....:	08/19/11	Analysis Date..:	08/19/11		
Prep Batch #...:	1231041	Analysis Time..:	06:41		
Dilution Factor:	5				
		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,2-Dichloroethene (total)	83 D	10	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	111	(85 - 115)
1,2-Dichloroethane-d4	107	(70 - 120)
4-Bromofluorobenzene	101	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001

TOTAL Metals

Lot-Sample #...: F1H120447-009 Matrix.....: WATER
Date Sampled...: 08/11/11 14:10 Date Received..: 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	22.4	1.0	ug/L	SW846 6020A	08/15-08/17/11	MLLPA1AT
		Dilution Factor: 1		Analysis Time..: 19:32		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1A3
		Dilution Factor: 1		Analysis Time..: 11:43		
Aluminum	89.5 J	200	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1A4
		Dilution Factor: 1		Analysis Time..: 11:43		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1A2
		Dilution Factor: 1		Analysis Time..: 11:43		
Barium	12.4 J	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1A5
		Dilution Factor: 1		Analysis Time..: 11:43		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1A6
		Dilution Factor: 1		Analysis Time..: 11:43		
Calcium	178000	1000	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1A7
		Dilution Factor: 1		Analysis Time..: 11:43		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1A8
		Dilution Factor: 1		Analysis Time..: 11:43		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AA
		Dilution Factor: 1		Analysis Time..: 11:43		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AC
		Dilution Factor: 1		Analysis Time..: 11:43		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AD
		Dilution Factor: 1		Analysis Time..: 11:43		
Iron	234	100	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AE
		Dilution Factor: 1		Analysis Time..: 11:43		
Magnesium	52200	1000	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AF
		Dilution Factor: 1		Analysis Time..: 11:43		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001

TOTAL Metals

Lot-Sample #...: F1H120447-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**19.4**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLPA1AG**
		Dilution Factor: 1		Analysis Time..: 11:43		
Sodium	**113000 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLPA1AH**
		Dilution Factor: 5		Analysis Time..: 14:31		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AJ
		Dilution Factor: 1		Analysis Time..: 11:43		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AK
		Dilution Factor: 1		Analysis Time..: 11:43		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AL
		Dilution Factor: 1		Analysis Time..: 11:43		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AM
		Dilution Factor: 1		Analysis Time..: 11:43		
Strontium	**1890 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLPA1AN**
		Dilution Factor: 1		Analysis Time..: 11:43		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AP
		Dilution Factor: 1		Analysis Time..: 11:43		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AQ
		Dilution Factor: 1		Analysis Time..: 11:43		
Zinc	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPA1AR
		Dilution Factor: 1		Analysis Time..: 11:43		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001

General Chemistry

Lot-Sample #...: F1H120447-009 Work Order #...: MLLPA Matrix.....: WATER
Date Sampled...: 08/11/11 14:10 Date Received..: 08/12/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	211	20.0	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100		Analysis Time..: 10:35		
Fluoride	0.56	0.10	mg/L	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 1		Analysis Time..: 09:37		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1		Analysis Time..: 09:37		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 10		Analysis Time..: 10:20		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1		Analysis Time..: 09:37		
Sulfate	357	50.0	mg/L	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 100		Analysis Time..: 10:35		
Total Alkalinity	231	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1240	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002

GC/MS Volatiles

Lot-Sample #...: F1H120447-010 **Work Order #...:** MLLPE1CE **Matrix.....:** WATER
Date Sampled...: 08/11/11 **Date Received..:** 08/12/11
Prep Date.....: 08/19/11 **Analysis Date..:** 08/19/11
Prep Batch #...: 1231041 **Analysis Time..:** 08:27
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	**3.5**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**2.6**	**2.0**	**ug/L**
Chloroform	**0.32 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**8.7**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**37**	**1.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.38 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.10 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
1,2-Dichloroethane-d4	108	(70 - 120)
4-Bromofluorobenzene	109	(75 - 120)

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002

GC/MS Volatiles

Lot-Sample #...: F1H120447-010 Work Order #...: MLLPE1CE Matrix.....: WATER

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002

GC/MS Volatiles

Lot-Sample #...: F1H120447-010 Work Order #...: MLLPE2CE Matrix.....: WATER
Date Sampled...: 08/11/11 Date Received..: 08/12/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 07:08
Dilution Factor: 5

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,2-Dichloroethene (total)	79 D	10	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
1,2-Dichloroethane-d4	105	(70 - 120)
4-Bromofluorobenzene	101	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002

TOTAL Metals

Lot-Sample #...: F1H120447-010 Matrix.....: WATER
Date Sampled...: 08/11/11 Date Received..: 08/12/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	22.5	1.0	ug/L	SW846 6020A	08/15-08/17/11	MLLPE1A5
		Dilution Factor: 1		Analysis Time..: 19:39		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AE
		Dilution Factor: 1		Analysis Time..: 11:49		
Aluminum	151 J	200	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AF
		Dilution Factor: 1		Analysis Time..: 11:49		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AD
		Dilution Factor: 1		Analysis Time..: 11:49		
Barium	13.3 J	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AG
		Dilution Factor: 1		Analysis Time..: 11:49		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AH
		Dilution Factor: 1		Analysis Time..: 11:49		
Calcium	187000	1000	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AJ
		Dilution Factor: 1		Analysis Time..: 11:49		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AK
		Dilution Factor: 1		Analysis Time..: 11:49		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AM
		Dilution Factor: 1		Analysis Time..: 11:49		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AN
		Dilution Factor: 1		Analysis Time..: 11:49		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AP
		Dilution Factor: 1		Analysis Time..: 11:49		
Iron	268	100	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AQ
		Dilution Factor: 1		Analysis Time..: 11:49		
Magnesium	55600	1000	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AR
		Dilution Factor: 1		Analysis Time..: 11:49		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002

TOTAL Metals

Lot-Sample #...: F1H120447-010 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	21.4	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLPE1AT**
		Dilution Factor: 1		Analysis Time..: 11:49		
Sodium	115000 B	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLLPE1AU**
		Dilution Factor: 5		Analysis Time..: 14:37		
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AV
		Dilution Factor: 1		Analysis Time..: 11:49		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AW
		Dilution Factor: 1		Analysis Time..: 11:49		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1AX
		Dilution Factor: 1		Analysis Time..: 11:49		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1A0
		Dilution Factor: 1		Analysis Time..: 11:49		
Strontium	1980 B	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLLPE1A1**
		Dilution Factor: 1		Analysis Time..: 11:49		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1A2
		Dilution Factor: 1		Analysis Time..: 11:49		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1A3
		Dilution Factor: 1		Analysis Time..: 11:49		
Zinc	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLLPE1A4
		Dilution Factor: 1		Analysis Time..: 11:49		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002

General Chemistry

Lot-Sample #...: F1H120447-010 Work Order #...: MLLPE Matrix.....: WATER
Date Sampled...: 08/11/11 Date Received..: 08/12/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	207	20.0	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100		Analysis Time..: 11:18		
Fluoride	0.60	0.10	mg/L	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 1		Analysis Time..: 10:49		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1		Analysis Time..: 10:49		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 10		Analysis Time..: 11:04		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1		Analysis Time..: 10:49		
Sulfate	346	50.0	mg/L	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 100		Analysis Time..: 11:18		
Total Alkalinity	232	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1220	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLTVV1AA Matrix.....: WATER
MB Lot-Sample #: F1H180000-199

Prep Date.....: 08/18/11 Analysis Time..: 11:50
Analysis Date..: 08/18/11 Prep Batch #...: 1230199
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	107	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLTVV1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	106	(70 - 120)		
4-Bromofluorobenzene	100	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLTXM1AA Matrix.....: WATER
MB Lot-Sample #: F1H190000-041

Prep Date.....: 08/19/11 Analysis Time..: 05:48
Analysis Date..: 08/19/11 Prep Batch #...: 1231041
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	106	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLTXM1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	103	(70 - 120)		
4-Bromofluorobenzene	103	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H150000-138 **Prep Batch #...:** 1227138						
Uranium	ND	1.0	ug/L	SW846 6020A	08/15-08/17/11	MLM771AA
		Dilution Factor: 1				
		Analysis Time..: 17:46				
MB Lot-Sample #: F1H150000-139 **Prep Batch #...:** 1227139						
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLM781A4
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CK
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A2
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Barium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A5
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Beryllium	**0.87 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLM781A6**
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A8
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Calcium	ND	1000	ug/L	SW846 6010C	08/15-08/20/11	MLM781A7
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CA
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A9
		Dilution Factor: 1				
		Analysis Time..: 10:00				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CC
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Iron	ND	100	ug/L	SW846 6010C	08/15-08/20/11	MLM781CD
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CJ
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Magnesium	ND	1000	ug/L	SW846 6010C	08/15-08/20/11	MLM781CE
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Manganese	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CF
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CH
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CL
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A3
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Sodium	**399 J**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLM781CG**
		Dilution Factor: 1				
		Analysis Time..: 12:49				
Strontium	**0.80 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLM781CM**
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CN
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CP
		Dilution Factor: 1				
		Analysis Time..: 10:00				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CQ

Dilution Factor: 1
Analysis Time..: 10:00

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H120447 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLTCF1AA		MB Lot-Sample #:	F1H120000-148	
	ND	0.20	mg/L	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Fluoride		Work Order #: MLTCH1AA		MB Lot-Sample #:	F1H120000-149	
	ND	0.10	mg/L	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Nitrate		Work Order #: MLTCJ1AA		MB Lot-Sample #:	F1H120000-150	
	ND	0.020	mg/L	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Nitrite		Work Order #: MLTCL1AA		MB Lot-Sample #:	F1H120000-151	
	ND	0.020	mg/L	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Phosphate as P, Ortho		Work Order #: MLTCM1AA		MB Lot-Sample #:	F1H120000-152	
	0.069 B	0.50	mg/L	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Sulfate		Work Order #: MLTCN1AA		MB Lot-Sample #:	F1H120000-153	
	ND	0.50	mg/L	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 1				
		Analysis Time..: 04:20				
Total Alkalinity		Work Order #: MLWW41AC		MB Lot-Sample #:	F1H220000-085	
	ND	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLQ6P1AA		MB Lot-Sample #:	F1H170000-114	
	ND	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLTVV1AC Matrix.....: WATER
LCS Lot-Sample#: F1H180000-199
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 10:30
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichloroethane	97	(70 - 130)	SW846 8260B
Benzene	95	(80 - 120)	SW846 8260B
Trichloroethene	90	(70 - 125)	SW846 8260B
1,2-Dichloropropane	91	(75 - 125)	SW846 8260B
Bromodichloromethane	98	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	98	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	107	(55 - 140)	SW846 8260B
Toluene	103	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	102	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	96	(75 - 125)	SW846 8260B
2-Hexanone	95	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	103	(60 - 135)	SW846 8260B
Chlorobenzene	96	(80 - 120)	SW846 8260B
Bromoform	108	(70 - 130)	SW846 8260B
Ethylbenzene	101	(75 - 125)	SW846 8260B
Styrene	109	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	93	(65 - 130)	SW846 8260B
Tetrachloroethene	101	(45 - 150)	SW846 8260B
1,2-Dichlorobenzene	100	(70 - 120)	SW846 8260B
cis-1,3-Dichloropropene	104	(70 - 130)	SW846 8260B
Dibromochloromethane	104	(60 - 135)	SW846 8260B
Vinyl chloride	87	(50 - 145)	SW846 8260B
Bromomethane	99	(30 - 145)	SW846 8260B
Chloroethane	90	(60 - 135)	SW846 8260B
Acetone	93	(40 - 140)	SW846 8260B
1,1-Dichloroethene	95	(70 - 130)	SW846 8260B
Methylene chloride	88	(55 - 140)	SW846 8260B
Carbon disulfide	84	(35 - 160)	SW846 8260B
1,1-Dichloroethane	93	(70 - 135)	SW846 8260B
2-Butanone	88	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	96	(85 - 115)	SW846 8260B
Chloroform	93	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	99	(65 - 130)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 **Work Order #...:** MLTVV1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H180000-199

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Carbon tetrachloride	**99**	**(65 - 140)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	101	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLTXM1AC Matrix.....: WATER
LCS Lot-Sample#: F1H190000-041
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 04:55
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Styrene	110	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	101	(65 - 130)	SW846 8260B
Tetrachloroethene	101	(45 - 150)	SW846 8260B
1,2-Dichlorobenzene	100	(70 - 120)	SW846 8260B
cis-1,3-Dichloropropene	106	(70 - 130)	SW846 8260B
Dibromochloromethane	103	(60 - 135)	SW846 8260B
Vinyl chloride	83	(50 - 145)	SW846 8260B
Bromomethane	101	(30 - 145)	SW846 8260B
Chloroethane	90	(60 - 135)	SW846 8260B
Acetone	93	(40 - 140)	SW846 8260B
1,1-Dichloroethene	99	(70 - 130)	SW846 8260B
Methylene chloride	92	(55 - 140)	SW846 8260B
Carbon disulfide	90	(35 - 160)	SW846 8260B
1,1-Dichloroethane	94	(70 - 135)	SW846 8260B
2-Butanone	101	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	97	(85 - 115)	SW846 8260B
Chloroform	94	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	100	(65 - 130)	SW846 8260B
Carbon tetrachloride	100	(65 - 140)	SW846 8260B
1,2-Dichloroethane	96	(70 - 130)	SW846 8260B
Benzene	95	(80 - 120)	SW846 8260B
Trichloroethene	91	(70 - 125)	SW846 8260B
1,2-Dichloropropane	95	(75 - 125)	SW846 8260B
Bromodichloromethane	100	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	96	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	106	(55 - 140)	SW846 8260B
Toluene	104	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	103	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	99	(75 - 125)	SW846 8260B
2-Hexanone	96	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	108	(60 - 135)	SW846 8260B
Chlorobenzene	95	(80 - 120)	SW846 8260B
Bromoform	109	(70 - 130)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 **Work Order #...:** MLTXM1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H190000-041

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Ethylbenzene	102	**(75 - 125)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H150000-138 **Prep Batch #...:** 1227138					
Uranium	105	(80 - 120)	SW846 6020A	08/15-08/17/11	MLM771AC
		Dilution Factor: 1		Analysis Time..: 17:52	
LCS Lot-Sample#: F1H150000-139 **Prep Batch #...:** 1227139					
Arsenic	106	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AA
		Dilution Factor: 1		Analysis Time..: 10:06	
Silver	95	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AC
		Dilution Factor: 1		Analysis Time..: 10:06	
Aluminum	104	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AD
		Dilution Factor: 1		Analysis Time..: 10:06	
Barium	103	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AE
		Dilution Factor: 1		Analysis Time..: 10:06	
Beryllium	108	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AF
		Dilution Factor: 1		Analysis Time..: 10:06	
Calcium	106	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AG
		Dilution Factor: 1		Analysis Time..: 10:06	
Cadmium	107	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AH
		Dilution Factor: 1		Analysis Time..: 10:06	
Cobalt	101	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AJ
		Dilution Factor: 1		Analysis Time..: 10:06	
Chromium	100	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AK
		Dilution Factor: 1		Analysis Time..: 10:06	
Copper	99	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AL
		Dilution Factor: 1		Analysis Time..: 10:06	
Iron	104	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AM
		Dilution Factor: 1		Analysis Time..: 10:06	
Magnesium	102	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AN
		Dilution Factor: 1		Analysis Time..: 10:06	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	103	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AP
		Dilution Factor: 1	Analysis Time..: 10:06		
Sodium	108	(80 - 120)	SW846 6010C	08/15-08/19/11	MLM781AQ
		Dilution Factor: 1	Analysis Time..: 12:55		
Nickel	104	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AR
		Dilution Factor: 1	Analysis Time..: 10:06		
Lead	103	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AT
		Dilution Factor: 1	Analysis Time..: 10:06		
Antimony	105	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AU
		Dilution Factor: 1	Analysis Time..: 10:06		
Selenium	110	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AV
		Dilution Factor: 1	Analysis Time..: 10:06		
Strontium	113	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AW
		Dilution Factor: 1	Analysis Time..: 10:06		
Thallium	101	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AX
		Dilution Factor: 1	Analysis Time..: 10:06		
Vanadium	100	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781A0
		Dilution Factor: 1	Analysis Time..: 10:06		
Zinc	115	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781A1
		Dilution Factor: 1	Analysis Time..: 10:06		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H120447 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLTCF1AC LCS Lot-Sample#: F1H120000-148			
	91	(90 - 110)	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 1	Analysis Time..: 04:05		
Fluoride		Work Order #: MLTCH1AC LCS Lot-Sample#: F1H120000-149			
	95	(90 - 110)	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 1	Analysis Time..: 04:05		
Nitrate		Work Order #: MLTCJ1AC LCS Lot-Sample#: F1H120000-150			
	99	(90 - 110)	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1	Analysis Time..: 04:05		
Nitrite		Work Order #: MLTCL1AC LCS Lot-Sample#: F1H120000-151			
	97	(90 - 110)	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 1	Analysis Time..: 04:05		
Phosphate as P, Ortho		Work Order #: MLTCM1AC LCS Lot-Sample#: F1H120000-152			
	94	(90 - 110)	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1	Analysis Time..: 04:05		
Sulfate		Work Order #: MLTCN1AC LCS Lot-Sample#: F1H120000-153			
	93	(90 - 110)	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 1	Analysis Time..: 04:05		
Total Alkalinity		Work Order #: MLWW41AA LCS Lot-Sample#: F1H220000-085			
	93	(90 - 110)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLWW41AD LCS Lot-Sample#: F1H220000-085			
	94	(90 - 110)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLQ6P1AC LCS Lot-Sample#: F1H170000-114			
	98	(90 - 113)	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLLN11CV-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-006 MLLN11CW-MSD
Date Sampled...: 08/11/11 09:15 Date Received..: 08/12/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 19:05
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	86	(70 - 130)			SW846 8260B
	98	(70 - 130)	13	(0-20)	SW846 8260B
Dibromochloromethane	94	(60 - 135)			SW846 8260B
	103	(60 - 135)	8.5	(0-20)	SW846 8260B
Vinyl chloride	78	(50 - 145)			SW846 8260B
	91	(50 - 145)	15	(0-20)	SW846 8260B
Bromomethane	87	(30 - 145)			SW846 8260B
	95	(30 - 145)	9.2	(0-20)	SW846 8260B
Chloroethane	87	(60 - 135)			SW846 8260B
	97	(60 - 135)	11	(0-20)	SW846 8260B
Acetone	94	(40 - 140)			SW846 8260B
	96	(40 - 140)	2.0	(0-20)	SW846 8260B
1,1-Dichloroethene	97	(70 - 130)			SW846 8260B
	105	(70 - 130)	7.2	(0-20)	SW846 8260B
Methylene chloride	88	(55 - 140)			SW846 8260B
	95	(55 - 140)	7.3	(0-20)	SW846 8260B
Carbon disulfide	91	(35 - 160)			SW846 8260B
	96	(35 - 160)	5.6	(0-20)	SW846 8260B
1,1-Dichloroethane	92	(70 - 135)			SW846 8260B
	100	(70 - 135)	8.3	(0-20)	SW846 8260B
2-Butanone	88	(30 - 150)			SW846 8260B
	94	(30 - 150)	7.1	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	91	(85 - 115)			SW846 8260B
	100	(85 - 115)	9.8	(0-20)	SW846 8260B
Chloroform	89	(65 - 135)			SW846 8260B
	97	(65 - 135)	8.4	(0-20)	SW846 8260B
1,1,1-Trichloroethane	95	(65 - 130)			SW846 8260B
	103	(65 - 130)	8.8	(0-20)	SW846 8260B
Carbon tetrachloride	95	(65 - 140)			SW846 8260B
	103	(65 - 140)	8.2	(0-20)	SW846 8260B
1,2-Dichloroethane	89	(70 - 130)			SW846 8260B
	100	(70 - 130)	12	(0-20)	SW846 8260B
Benzene	92	(80 - 120)			SW846 8260B
	100	(80 - 120)	8.3	(0-20)	SW846 8260B
Trichloroethene	89	(70 - 125)			SW846 8260B
	93	(70 - 125)	4.5	(0-20)	SW846 8260B
1,2-Dichloropropane	89	(75 - 125)			SW846 8260B
	96	(75 - 125)	8.4	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLLN11CV-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-006 MLLN11CW-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	94	(75 - 120)			SW846 8260B
	102	(75 - 120)	8.1	(0-20)	SW846 8260B
1,1,2-Trichloroethane	92	(75 - 125)			SW846 8260B
	102	(75 - 125)	11	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	96	(55 - 140)			SW846 8260B
	106	(55 - 140)	9.7	(0-20)	SW846 8260B
Toluene	100	(75 - 120)			SW846 8260B
	103	(75 - 120)	3.2	(0-20)	SW846 8260B
1,3-Dichlorobenzene	98	(75 - 125)			SW846 8260B
	102	(75 - 125)	3.4	(0-20)	SW846 8260B
1,4-Dichlorobenzene	94	(75 - 125)			SW846 8260B
	99	(75 - 125)	4.5	(0-20)	SW846 8260B
2-Hexanone	82	(55 - 130)			SW846 8260B
	98	(55 - 130)	17	(0-20)	SW846 8260B
4-Methyl-2-pentanone	88	(60 - 135)			SW846 8260B
	102	(60 - 135)	15	(0-20)	SW846 8260B
Chlorobenzene	93	(80 - 120)			SW846 8260B
	98	(80 - 120)	5.5	(0-20)	SW846 8260B
Bromoform	100	(70 - 130)			SW846 8260B
	108	(70 - 130)	7.6	(0-20)	SW846 8260B
Ethylbenzene	98	(75 - 125)			SW846 8260B
	104	(75 - 125)	5.7	(0-20)	SW846 8260B
Styrene	106	(65 - 135)			SW846 8260B
	112	(65 - 135)	6.0	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	90	(65 - 130)			SW846 8260B
	99	(65 - 130)	9.1	(0-20)	SW846 8260B
Tetrachloroethene	96	(45 - 150)			SW846 8260B
	101	(45 - 150)	5.7	(0-20)	SW846 8260B
1,2-Dichlorobenzene	95	(70 - 120)			SW846 8260B
	100	(70 - 120)	5.3	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
	105	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
	108	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
	105	(70 - 120)
4-Bromofluorobenzene	97	(75 - 120)
	98	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLLN71CF-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-007 MLLN71CG-MSD
Date Sampled...: 08/11/11 10:15 Date Received..: 08/12/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 09:20
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	101	(70 - 130)			SW846 8260B
	103	(70 - 130)	2.4	(0-20)	SW846 8260B
Dibromochloromethane	104	(60 - 135)			SW846 8260B
	102	(60 - 135)	1.6	(0-20)	SW846 8260B
Vinyl chloride	93	(50 - 145)			SW846 8260B
	96	(50 - 145)	2.4	(0-20)	SW846 8260B
Bromomethane	107	(30 - 145)			SW846 8260B
	102	(30 - 145)	5.0	(0-20)	SW846 8260B
Chloroethane	100	(60 - 135)			SW846 8260B
	97	(60 - 135)	3.2	(0-20)	SW846 8260B
Acetone	111	(40 - 140)			SW846 8260B
	95	(40 - 140)	15	(0-20)	SW846 8260B
1,1-Dichloroethene	107	(70 - 130)			SW846 8260B
	96	(70 - 130)	11	(0-20)	SW846 8260B
Methylene chloride	133	(55 - 140)			SW846 8260B
	135	(55 - 140)	1.7	(0-20)	SW846 8260B
Carbon disulfide	97	(35 - 160)			SW846 8260B
	86	(35 - 160)	12	(0-20)	SW846 8260B
1,1-Dichloroethane	100	(70 - 135)			SW846 8260B
	95	(70 - 135)	4.6	(0-20)	SW846 8260B
2-Butanone	91	(30 - 150)			SW846 8260B
	97	(30 - 150)	6.4	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	100	(85 - 115)			SW846 8260B
	98	(85 - 115)	2.4	(0-20)	SW846 8260B
Chloroform	99	(65 - 135)			SW846 8260B
	94	(65 - 135)	5.1	(0-20)	SW846 8260B
1,1,1-Trichloroethane	108	(65 - 130)			SW846 8260B
	102	(65 - 130)	5.6	(0-20)	SW846 8260B
Carbon tetrachloride	108	(65 - 140)			SW846 8260B
	102	(65 - 140)	5.4	(0-20)	SW846 8260B
1,2-Dichloroethane	99	(70 - 130)			SW846 8260B
	100	(70 - 130)	0.19	(0-20)	SW846 8260B
Benzene	100	(80 - 120)			SW846 8260B
	98	(80 - 120)	2.2	(0-20)	SW846 8260B
Trichloroethene	93	(70 - 125)			SW846 8260B
	94	(70 - 125)	0.16	(0-20)	SW846 8260B
1,2-Dichloropropane	99	(75 - 125)			SW846 8260B
	98	(75 - 125)	0.89	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H120447 Work Order #...: MLLN71CF-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-007 MLLN71CG-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	103	(75 - 120)			SW846 8260B
	102	(75 - 120)	0.87	(0-20)	SW846 8260B
1,1,2-Trichloroethane	102	(75 - 125)			SW846 8260B
	97	(75 - 125)	5.2	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	107	(55 - 140)			SW846 8260B
	107	(55 - 140)	0.56	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	102	(75 - 120)	3.8	(0-20)	SW846 8260B
1,3-Dichlorobenzene	107	(75 - 125)			SW846 8260B
	105	(75 - 125)	2.2	(0-20)	SW846 8260B
1,4-Dichlorobenzene	100	(75 - 125)			SW846 8260B
	101	(75 - 125)	1.0	(0-20)	SW846 8260B
2-Hexanone	96	(55 - 130)			SW846 8260B
	91	(55 - 130)	5.8	(0-20)	SW846 8260B
4-Methyl-2-pentanone	96	(60 - 135)			SW846 8260B
	98	(60 - 135)	2.8	(0-20)	SW846 8260B
Chlorobenzene	100	(80 - 120)			SW846 8260B
	98	(80 - 120)	1.7	(0-20)	SW846 8260B
Bromoform	107	(70 - 130)			SW846 8260B
	111	(70 - 130)	3.0	(0-20)	SW846 8260B
Ethylbenzene	105	(75 - 125)			SW846 8260B
	104	(75 - 125)	1.2	(0-20)	SW846 8260B
Styrene	114	(65 - 135)			SW846 8260B
	110	(65 - 135)	3.6	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	97	(65 - 130)			SW846 8260B
	96	(65 - 130)	1.5	(0-20)	SW846 8260B
Tetrachloroethene	104	(45 - 150)			SW846 8260B
	101	(45 - 150)	2.3	(0-20)	SW846 8260B
1,2-Dichlorobenzene	104	(70 - 120)			SW846 8260B
	103	(70 - 120)	1.2	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
	102	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
	102	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)
	100	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H120447-001 **Prep Batch #...:** 1227138							
Uranium	107	(80 - 120)			SW846 6020A	08/15-08/17/11	MLLNJ1A5
	109	(80 - 120)	1.4	(0-20)	SW846 6020A	08/15-08/17/11	MLLNJ1A6
		Dilution Factor: 1					
		Analysis Time..: 18:12					
MS Lot-Sample #: F1H120447-001 **Prep Batch #...:** 1227139							
Aluminum	103	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CC
	97	(80 - 120)	5.6	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CD
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Antimony	101	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C9
	96	(80 - 120)	5.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DA
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Arsenic	104	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1A7
	98	(80 - 120)	5.8	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1A8
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Barium	101	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CE
	96	(80 - 120)	4.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CF
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Beryllium	105	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CG
	101	(80 - 120)	3.9	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CH
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Cadmium	101	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CL
	96	(80 - 120)	5.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CM
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Calcium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CJ
	63 N	(80 - 120)	3.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CK
		Dilution Factor: 1					
		Analysis Time..: 10:19					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CQ
	92	(80 - 120)	4.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CR
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Cobalt	95	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CN
	90	(80 - 120)	4.9	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CP
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Copper	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CT
	92	(80 - 120)	4.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CU
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Iron	99	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CV
	94	(80 - 120)	4.6	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CW
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Lead	97	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C7
	92	(80 - 120)	5.8	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C8
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Magnesium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CX
	80	(80 - 120)	3.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C0
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Manganese	98	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C1
	94	(80 - 120)	4.0	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C2
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Nickel	97	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C5
	91	(80 - 120)	5.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C6
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Selenium	105	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DC
	98	(80 - 120)	7.1	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DD
		Dilution Factor: 1					
		Analysis Time..: 10:19					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H120447 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	92	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1A9
	88	(80 - 120)	4.6	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CA
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Sodium	104	(80 - 120)			SW846 6010C	08/15-08/19/11	MLLNJ1C3
	161 N	(80 - 120)	6.3	(0-20)	SW846 6010C	08/15-08/19/11	MLLNJ1C4
		Dilution Factor: 5					
		Analysis Time..: 13:08					
Strontium	109	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DE
	101	(80 - 120)	4.9	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DF
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Thallium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DG
	91	(80 - 120)	5.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DH
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Vanadium	97	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DJ
	93	(80 - 120)	3.8	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DK
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Zinc	110	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DL
	103	(80 - 120)	6.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DM
		Dilution Factor: 1					
		Analysis Time..: 10:19					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H120447 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLKJL1CV		MS Lot-Sample #: F1H110460-008	
	103	(90 - 110)	MCAWW 300.0A	08/13/11	1224148
		Dilution Factor: 500	Analysis Time..: 11:47		
Chloride		Work Order #...: MLLN11CG		MS Lot-Sample #: F1H120447-006	
	95	(90 - 110)	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100	Analysis Time..: 05:18		
Fluoride		Work Order #...: MLLN11CJ		MS Lot-Sample #: F1H120447-006	
	110	(90 - 110)	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 1	Analysis Time..: 04:34		
Nitrate		Work Order #...: MLLN11CL		MS Lot-Sample #: F1H120447-006	
	97	(90 - 110)	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1	Analysis Time..: 04:34		
Nitrite		Work Order #...: MLLN11CN		MS Lot-Sample #: F1H120447-006	
	71 N	(90 - 110)	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 5	Analysis Time..: 04:49		
Phosphate as P, Ortho		Work Order #...: MLLN11CQ		MS Lot-Sample #: F1H120447-006	
	71 N	(90 - 110)	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1	Analysis Time..: 04:34		
Sulfate		Work Order #...: MLLN11CT		MS Lot-Sample #: F1H120447-006	
	100	(90 - 110)	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 10	Analysis Time..: 05:03		
Total Alkalinity		Work Order #...: MLKJ51CF		MS Lot-Sample #: F1H110460-009	
	96	(80 - 120)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H120447 **Work Order #...:** MLLN1-SMP MLLN1-DUP **Matrix.....:** WATER

Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #:	F1H120447-006	
	645	665	mg/L	3.1	(0-0.0)	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1				Analysis Time..: 00:00		
Chloride						SD Lot-Sample #:	F1H120447-006	
	87.7	86.1	mg/L	1.9	(0-20)	MCAWW 300.0A	08/12/11	1224148
		Dilution Factor: 100				Analysis Time..: 05:18		
Fluoride						SD Lot-Sample #:	F1H120447-006	
	2.1	2.1	mg/L	0.25	(0-20)	MCAWW 300.0A	08/12/11	1224149
		Dilution Factor: 1				Analysis Time..: 04:34		
Nitrate						SD Lot-Sample #:	F1H120447-006	
	0.011 B	0.015 B	mg/L	28	(0-20)	MCAWW 300.0A	08/12/11	1224150
		Dilution Factor: 1				Analysis Time..: 04:34		
Nitrite						SD Lot-Sample #:	F1H120447-006	
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/12/11	1224151
		Dilution Factor: 5				Analysis Time..: 04:49		
Phosphate as P, Ortho						SD Lot-Sample #:	F1H120447-006	
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/12/11	1224152
		Dilution Factor: 1				Analysis Time..: 04:34		
Sulfate						SD Lot-Sample #:	F1H120447-006	
	122	121	mg/L	0.87	(0-20)	MCAWW 300.0A	08/12/11	1224153
		Dilution Factor: 10				Analysis Time..: 05:03		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H120447 **Work Order #...:** MLKJ5-SMP MLKJ5-DUP **Matrix.....:** WATER

Date Sampled...: 08/10/11 09:30 **Date Received..:** 08/11/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #:	F1H110460-009	
	256	257	mg/L	0.31	(0-20)	MCAWW 310.1	08/22/11	1234085

Dilution Factor: 1 Analysis Time..: 00:00

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H120447-001
Work Order: MLLNJ
Matrix: WATER

Date Collected: 08/11/11 0915
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1231165		Yld % 52
Uranium 234	36.9		3.4	0.1	0.06	08/19/11	08/21/11
Uranium 235/236	2.08		0.42	0.10	0.05	08/19/11	08/21/11
Uranium 238	36.8		3.4	0.1	0.06	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H120447-002
Work Order: MLLNT
Matrix: WATER

Date Collected: 08/11/11 1015
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1231165		Yld % 65
Uranium 234	4.94		0.61	0.10	0.05	08/19/11	08/21/11
Uranium 235/236	0.123		0.081	0.100	0.057	08/19/11	08/21/11
Uranium 238	1.47		0.27	0.10	0.05	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03AMW13D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H120447-003
Work Order: MLLNV
Matrix: WATER

Date Collected: 08/11/11 1200
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1231165		Yld % 61
Uranium 234	22.6		2.1	0.1	0.03	08/19/11	08/21/11
Uranium 235/236	1.13		0.27	0.10	0.04	08/19/11	08/21/11
Uranium 238	23.6		2.2	0.1	0.03	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H120447-004
Work Order: MLLNW
Matrix: WATER

Date Collected: 08/11/11 1410
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1231165		Yld % 79
Uranium 234	7.19		0.77	0.10	0.02	08/19/11	08/21/11
Uranium 235/236	0.30		0.11	0.10	0.03	08/19/11	08/21/11
Uranium 238	6.90		0.75	0.10	0.02	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002 DISSOLVED

Radiochemistry

Lab Sample ID: F1H120447-005
Work Order: MLLNX
Matrix: WATER

Date Collected: 08/11/11 0000
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 74
Uranium 234	7.51		0.83	0.10	0.05	08/19/11	08/21/11
Uranium 235/236	0.43		0.15	0.10	0.03	08/19/11	08/21/11
Uranium 238	7.06		0.79	0.10	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW602D0001

Radiochemistry

Lab Sample ID: F1H120447-006
Work Order: MLLN1
Matrix: WATER

Date Collected: 08/11/11 0915
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 46
Uranium 234	36.5		3.4	0.1	0.07	08/19/11	08/21/11
Uranium 235/236	1.84		0.40	0.10	0.05	08/19/11	08/21/11
Uranium 238	36.0		3.4	0.1	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04MW702DD0001

Radiochemistry

Lab Sample ID: F1H120447-007
Work Order: MLLN7
Matrix: WATER

Date Collected: 08/11/11 1015
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1231165		Yld % 64
Uranium 234	6.65		0.77	0.10	0.03	08/19/11	08/21/11
Uranium 235/236	0.103		0.076	0.100	0.060	08/19/11	08/21/11
Uranium 238	1.84		0.32	0.10	0.03	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03AMW13D0001

Radiochemistry

Lab Sample ID: F1H120447-008
Work Order: MLLN9
Matrix: WATER

Date Collected: 08/11/11 1200
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 57
Uranium 234	23.9		2.3	0.1	0.05	08/19/11	08/21/11
Uranium 235/236	1.13		0.28	0.10	0.04	08/19/11	08/21/11
Uranium 238	24.6		2.3	0.1	0.03	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0001

Radiochemistry

Lab Sample ID: F1H120447-009
Work Order: MLLPA
Matrix: WATER

Date Collected: 08/11/11 1410
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1231165		Yld % 67
Uranium 234	7.18		0.81	0.10	0.07	08/19/11	08/21/11
Uranium 235/236	0.31		0.13	0.10	0.08	08/19/11	08/21/11
Uranium 238	7.03		0.79	0.10	0.09	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW9002

Radiochemistry

Lab Sample ID: F1H120447-010
Work Order: MLLPE
Matrix: WATER

Date Collected: 08/11/11 0000
Date Received: 08/12/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1231165		Yld % 73
Uranium 234	7.03		0.78	0.10	0.06	08/19/11	08/21/11
Uranium 235/236	0.50		0.16	0.10	0.05	08/19/11	08/21/11
Uranium 238	7.39		0.81	0.10	0.06	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H120447
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1231165		Yld % 91	F1H190000-165B
Uranium 234	0.013	U	0.021	0.100	0.034	08/19/11	08/21/11
Uranium 235/236	0.009	U	0.018	0.100	0.025	08/19/11	08/21/11
Uranium 238	-0.0037	U	0.0053	0.100	0.039	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F1H120447
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ +/-)	% Yld	% Rec	QC Control Limits	Lab Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	A-01-R MOD			F1H190000-165C		
Uranium 234		3.26	2.97	0.40	89	91	(76 - 136)		
	Spk 2	3.26	3.27	0.43	80	100	(76 - 136)	10	%RPD
Uranium 238		3.39	3.32	0.43	89	98	(76 - 134)		
	Spk 2	3.39	3.60	0.46	80	106	(76 - 134)	8	%RPD
		Batch #:	1231165		Analysis Date:		08/21/11		

NOTE(S)
Calculations are performed before rounding to avoid round-off error in calculated results

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R262-3

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 10

Date Received: 2011-08-12

Analytical Due Date: 2011-08-19

Report Due Date: 2011-08-22

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A04MW602D0001 DISSOLVED			2011-08-11 / 915	MLLNJ	WATER

SAMPLE COMMENTS:

	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
D	MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R262-3

Project Manager: LMF Quote #: 89251 SDG:

Project: Y40415 Guteryl Steel

PO#: 697886 Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-12

Analytical Due Date: 2011-08-19

Report Due Date: 2011-08-22

Report Type: B Standard Report

#SMPS in LOT: 10 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

D	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R262-3

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-12

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
Report Type: B Standard Report

#SMPS in LOT: 10
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A04MW702DD0001 DISSOLVED			2011-08-11 / 1015	MLLNT	WATER

SAMPLE COMMENTS:

SE	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MN	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MG	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CR	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846 6020A		WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A03AMW13D0001 DISSOLVED			2011-08-11 / 1200	MLLNV	WATER

SAMPLE COMMENTS:

MN	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846 6010C		WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R262-3

Project Manager: LMF
Quote #: 89251 SDG:
Project: Y40415 Guteryl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-12
Analytical Due Date: 2011-08-19
Report Due Date: 2011-08-22
Report Type: B Standard Report
#SMPS In LOT: 10 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	A04DMW708DD0001 DISSOLVED			2011-08-11 / 1410	MLLNW	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R262-3

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-12

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 10
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	A04DMW9002 DISSOLVED			2011-08-11 / 0	MLLNX	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R262-3

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-12

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
Report Type: B Standard Report

#SMPS In LOT: 10
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	A04MW602D0001			2011-08-11 / 915	MLLN1	WATER

SAMPLE COMMENTS:

FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R262-3,2-45

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-12

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 10
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	A04MW702DD0001			2011-08-11 / 1015	MLLN7	WATER

SAMPLE COMMENTS:

SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06 TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R262-3,2-45

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-12

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 10
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	A03AMW13D0001			2011-08-11 / 1200	MLLN9	WATER

SAMPLE COMMENTS:

PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R262-3,2-45

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-12

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 10
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
9	A04DMW708DD0001			2011-08-11 / 1410	MLLPA	WATER

SAMPLE COMMENTS:

FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H120447

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R262-3,2-45

Project Manager: LMF
Quote #: 89251 SDG:
Date Received: 2011-08-12

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-19

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 10
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
10	A04DMW9002			2011-08-11 / 0	MLLPE	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

715 Rider Trail North

th City, MO 63045

ne 314.298.8566 fax 314.298.8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/11/2011	COC No: 007
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
ıcinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below ____			SDG No.
3) 782-4807 FAX	☒ 2 weeks			
oject Name: Former Guterl Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
O #	☐ 1 day			Sample Specific Notes:

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (a-spec)	Isotopic Uranium (a-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	
4MW602D0001	8/11/2011	0915	Grab	GW	10	X		X	X	X	X	X	X	X		2xLP, 250P			Filtered
4AMW702DD0001	8/11/2011	1015	Grab	GW	10	X		X	X	X	X	X	X	X					
3AMW13D0001	8/11/2011	1200	Grab	GW	7	X		X	X	X	X	X	X			2xLP 250P 500P 3x40 Total			
4DMW708DD0001	8/11/2011	1410	Grab	GW	10	X		X	X	X	X	X	X	X					
4DMW9002	8/11/2011	—	Grab	GW	10	X		X	X	X	X	X	X	X					

eservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

sible Hazard Identification

☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ *Return To Client* ☑ *Disposal By Lab* ☐ *Archive For* ____ *Months*

ecial Instructions/QC Requirements & Comments:

inquished by:	Company: Shaw E & I. Inc.	Date/Time: 8/11/11 1635	Received by:	Company: BFLO	Date/Time: 08-11-11 16:35	
inquished by:	Company: BFLO	Date/Time: 08-11-11 17:00	Received by:	Company: TASL	Date/Time: 8.12.11 0920	
inquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:	

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F1H120447 TestAmerica St. Louis

CUR Form #: 1 4 4

CONDITION UPON RECEIPT FORM

Client: Shaw

Quote No: 89251

COC/RFA No: 007

Initiated By: [illegible] Date: 8.12.11 Time: 0920

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*

1. 4485 0258 3734 45
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Sample Temperature (s):**

1. ambient
2. 4
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 8/15/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. Y40415

Guteryl Steel

Lot #: F1H130407

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 25, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H130407

This report contains the analytical results for the 10 samples received under chain of custody by TestAmerica in St. Louis on August 13, 2011. These samples are associated with your Guteryl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1230199
Tertahydrofuran was removed from the initial calibration lowest point due to poor response. Isobutanol, n-Butanol, 2-Chloroethylvinyl ether, 4-Methyl-2-pentanone and 2-Hexanone were removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration. The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

There was insufficient sample volume to perform MS/MSD analysis. An LCS/LCSD was performed to demonstrate accuracy and replicate precision.

The samples were analyzed at a dilution due to high concentrations of target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

The sample surrogate recovery is outside established QC limits. This excursion is attributed to a matrix interference which is physically evident in the sample. These samples foamed at the 1X and at a 5X dilution. The samples are reported at 5X as the lowest RL. The samples were also analyzed at a 50X dilution for analytes with high concentrations. The original analysis had similar surrogate failures.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (5): A04BMW9003

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1227139
The MS (MSD) recovery for calcium and sodium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery. No further action is required.

Strontium was observed in the CCB above the reporting limit. Associated samples which exhibit concentrations greater than ten (10) times the concentrations observed in the CCB, do not require re-analysis. Original results are reported.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (2): A02MW060001
F1H130407 (3): A02MW100001
F1H130407 (4): A02MW070001
F1H130407 (5): A04BMW9003
F1H130407 (6): A04BMW250001 DISSOLVED
F1H130407 (7): A02MW060001 DISSOLVED
F1H130407 (8): A02MW100001 DISSOLVED
F1H130407 (9): A02MW070001 DISSOLVED
F1H130407 (10): A04BMW9003 DISSOLVED

Nitrite as N (MCAWW 300.0A)

Batch: 1227060
The following samples were reported ND at dilution for Nitrite, due to interference with Chloride in the undiluted runs. The reporting limit has been adjusted only for those targets reported from the dilution run.

The samples were received in hold on 8/13/11 for IC analysis, but were re-run out of 48 hour hold for Nitrite in batch 1227060 on 8/15/11, due to a failed bracketing CCV in the 8/13/11 in-hold run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (2): A02MW060001
F1H130407 (3): A02MW100001
F1H130407 (4): A02MW070001
F1H130407 (5): A04BMW9003

Chloride (MCAWW 300.0A)

Batch: 1227179
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for chloride are attributed to matrix interference.

The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (2): A02MW060001
F1H130407 (3): A02MW100001
F1H130407 (4): A02MW070001
F1H130407 (5): A04BMW9003

Fluoride (MCAWW 300.0A)

Batch: 1225019
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (2): A02MW060001
F1H130407 (5): A04BMW9003

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1225022
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (2): A02MW060001
F1H130407 (3): A02MW100001
F1H130407 (4): A02MW070001
F1H130407 (5): A04BMW9003

Sulfate (MCAWW 300.0A)

Batch: 1230226
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (2): A02MW060001
F1H130407 (3): A02MW100001
F1H130407 (4): A02MW070001
F1H130407 (5): A04BMW9003

Total Dissolvee Solids (MCAWW 160.1)
The samples were analyzed at a dilution based on high concentrations of target analytes. The reporting limit has been adjusted accordingly.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (5): A04BMW9003

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)
There was insufficient sample provided to perform the sample duplicate, an LCS duplicate was used instead.

Affected Samples:
F1H130407 (1): A04BMW250001
F1H130407 (2): A02MW060001
F1H130407 (3): A02MW100001
F1H130407 (4): A02MW070001
F1H130407 (5): A04BMW9003
F1H130407 (6): A04BMW250001 DISSOLVED
F1H130407 (7): A02MW060001 DISSOLVED
F1H130407 (8): A02MW100001 DISSOLVED
F1H130407 (9): A02MW070001 DISSOLVED
F1H130407 (10): A04BMW9003 DISSOLVED

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H130407

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H130407

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLL89	001	A04BMW250001	08/12/11	08:45
MLL9A	002	A02MW060001	08/12/11	10:00
MLL9C	003	A02MW100001	08/12/11	10:55
MLL9D	004	A02MW070001	08/12/11	11:35
MLL9E	005	A04BMW9003	08/12/11	
MLL9F	006	A04BMW250001 DISSOLVED	08/12/11	08:45
MLL9G	007	A02MW060001 DISSOLVED	08/12/11	10:00
MLL9H	008	A02MW100001 DISSOLVED	08/12/11	10:55
MLL9J	009	A02MW070001 DISSOLVED	08/12/11	11:35
MLL9K	010	A04BMW9003 DISSOLVED	08/12/11	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001

GC/MS Volatiles

Lot-Sample #...: F1H130407-001 **Work Order #...:** MLL893AC **Matrix.....:** WATER
Date Sampled...: 08/12/11 08:45 **Date Received..:** 08/13/11
Prep Date.....: 08/18/11 **Analysis Date..:** 08/18/11
Prep Batch #...: 1230199 **Analysis Time..:** 14:14
Dilution Factor: 5
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	25	ug/L
Acetone	ND	10	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Carbon disulfide	ND	10	ug/L
Carbon tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	10	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chloroethane	**17 D**	**10**	**ug/L**
Chloroform	ND	5.0	ug/L
1,2-Dichlorobenzene	ND	5.0	ug/L
1,3-Dichlorobenzene	ND	5.0	ug/L
1,4-Dichlorobenzene	ND	5.0	ug/L
1,1-Dichloroethane	**190 D**	**5.0**	**ug/L**
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	**44 D**	**5.0**	**ug/L**
1,2-Dichloropropane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	5.0	ug/L
2-Hexanone	ND	25	ug/L
Methylene chloride	ND D	5.0	ug/L
4-Methyl-2-pentanone	ND	25	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	**3.4 J,D**	**5.0**	**ug/L**
Toluene	**1.3 J,D**	**5.0**	**ug/L**
1,1,2-Trichloroethane	**1.3 J,D**	**5.0**	**ug/L**
Trichloroethene	**150 D**	**5.0**	**ug/L**
Xylenes (total)	ND	25	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	101	(85 - 120)
Dibromofluoromethane	117 *	(85 - 115)
1,2-Dichloroethane-d4	105	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001

GC/MS Volatiles

Lot-Sample #...: F1H130407-001 Work Order #...: MLL893AC Matrix.....: WATER

NOTE(S):

* Surrogate recovery is outside stated control limits.

D Result was obtained from the analysis of a dilution.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001

GC/MS Volatiles

Lot-Sample #...: F1H130407-001 Work Order #...: MLL894AC Matrix.....: WATER
Date Sampled...: 08/12/11 08:45 Date Received..: 08/13/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 07:34
Dilution Factor: 50
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethane	190 D	50	ug/L
1,2-Dichloroethene (total)	1600 D	100	ug/L
Vinyl chloride	770 D	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001

TOTAL Metals

Lot-Sample #...: F1H130407-001 **Matrix.....:** WATER
Date Sampled...: 08/12/11 08:45 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**175**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL891A5**
		Dilution Factor: 1		Analysis Time..: 19:45		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AF
		Dilution Factor: 1		Analysis Time..: 11:56		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL891AG
		Dilution Factor: 1		Analysis Time..: 11:56		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AE
		Dilution Factor: 1		Analysis Time..: 11:56		
Barium	**109**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891AH**
		Dilution Factor: 1		Analysis Time..: 11:56		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AJ
		Dilution Factor: 1		Analysis Time..: 11:56		
Calcium	**146000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891AK**
		Dilution Factor: 1		Analysis Time..: 11:56		
Cadmium	**1.7 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891AL**
		Dilution Factor: 1		Analysis Time..: 11:56		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AM
		Dilution Factor: 1		Analysis Time..: 11:56		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AN
		Dilution Factor: 1		Analysis Time..: 11:56		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AP
		Dilution Factor: 1		Analysis Time..: 11:56		
Iron	**61.6 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891AQ**
		Dilution Factor: 1		Analysis Time..: 11:56		
Magnesium	**47800**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891AR**
		Dilution Factor: 1		Analysis Time..: 11:56		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001

TOTAL Metals

Lot-Sample #...: F1H130407-001 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**863**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891AT**
		Dilution Factor: 1		Analysis Time..: 11:56		
Sodium	**888000 B**	**20000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL891AU**
		Dilution Factor: 20		Analysis Time..: 14:44		
Nickel	**103**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891AV**
		Dilution Factor: 1		Analysis Time..: 11:56		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AW
		Dilution Factor: 1		Analysis Time..: 11:56		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891AX
		Dilution Factor: 1		Analysis Time..: 11:56		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891A0
		Dilution Factor: 1		Analysis Time..: 11:56		
Strontium	**892 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891A1**
		Dilution Factor: 1		Analysis Time..: 11:56		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891A2
		Dilution Factor: 1		Analysis Time..: 11:56		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL891A3
		Dilution Factor: 1		Analysis Time..: 11:56		
Zinc	**192**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL891A4**
		Dilution Factor: 1		Analysis Time..: 11:56		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001

General Chemistry

Lot-Sample #...: F1H130407-001 Work Order #...: MLL89 Matrix.....: WATER
Date Sampled...: 08/12/11 08:45 Date Received..: 08/13/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	1490	100	mg/L	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 500		Analysis Time..: 04:03		
Fluoride	2.1	1.0	mg/L	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 10		Analysis Time..: 03:34		
Nitrate	0.090	0.020	mg/L	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1		Analysis Time..: 03:19		
Nitrite	ND	1.0	mg/L	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 50		Analysis Time..: 05:50		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1		Analysis Time..: 03:19		
Sulfate	82.9	5.0	mg/L	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 10		Analysis Time..: 07:53		
Total Alkalinity	255	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	3170	100	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 10		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW060001

TOTAL Metals

Lot-Sample #...: F1H130407-002 **Matrix.....:** WATER
Date Sampled...: 08/12/11 10:00 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**3.6**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9A1A4**
		Dilution Factor: 1		Analysis Time..: 19:52		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AE
		Dilution Factor: 1		Analysis Time..: 12:02		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AF
		Dilution Factor: 1		Analysis Time..: 12:02		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AD
		Dilution Factor: 1		Analysis Time..: 12:02		
Barium	**23.3 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9A1AG**
		Dilution Factor: 1		Analysis Time..: 12:02		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AH
		Dilution Factor: 1		Analysis Time..: 12:02		
Calcium	**116000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9A1AJ**
		Dilution Factor: 1		Analysis Time..: 12:02		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AK
		Dilution Factor: 1		Analysis Time..: 12:02		
Cobalt	**4.4 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9A1AL**
		Dilution Factor: 1		Analysis Time..: 12:02		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AM
		Dilution Factor: 1		Analysis Time..: 12:02		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AN
		Dilution Factor: 1		Analysis Time..: 12:02		
Iron	**53.6 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9A1AP**
		Dilution Factor: 1		Analysis Time..: 12:02		
Magnesium	**47200**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9A1AQ**
		Dilution Factor: 1		Analysis Time..: 12:02		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW060001

TOTAL Metals

Lot-Sample #...: F1H130407-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	673	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AR
		Dilution Factor: 1		Analysis Time..: 12:02		
Sodium	16900 B	5000	ug/L	SW846 6010C	08/15-08/19/11	MLL9A1AT
		Dilution Factor: 5		Analysis Time..: 14:50		
Nickel	259	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AU
		Dilution Factor: 1		Analysis Time..: 12:02		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AV
		Dilution Factor: 1		Analysis Time..: 12:02		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AW
		Dilution Factor: 1		Analysis Time..: 12:02		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1AX
		Dilution Factor: 1		Analysis Time..: 12:02		
Strontium	347 B	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1A0
		Dilution Factor: 1		Analysis Time..: 12:02		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1A1
		Dilution Factor: 1		Analysis Time..: 12:02		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1A2
		Dilution Factor: 1		Analysis Time..: 12:02		
Zinc	425	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9A1A3
		Dilution Factor: 1		Analysis Time..: 12:02		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW060001

General Chemistry

Lot-Sample #...: F1H130407-002 Work Order #...: MLL9A Matrix.....: WATER
Date Sampled...: 08/12/11 10:00 Date Received..: 08/13/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	31.2	2.0	mg/L	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 10		Analysis Time..: 07:10		
Fluoride	2.9	0.50	mg/L	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 5		Analysis Time..: 06:56		
Nitrate	0.056	0.020	mg/L	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1		Analysis Time..: 06:41		
Nitrite	ND	0.040	mg/L	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 2		Analysis Time..: 06:30		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1		Analysis Time..: 06:41		
Sulfate	115	5.0	mg/L	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 10		Analysis Time..: 08:33		
Total Alkalinity	358	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	641	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW100001

TOTAL Metals

Lot-Sample #...: F1H130407-003 **Matrix.....:** WATER
Date Sampled...: 08/12/11 10:55 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**1.6**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9C1A4**
		Dilution Factor: 1		Analysis Time..: 19:59		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AE
		Dilution Factor: 1		Analysis Time..: 12:09		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AF
		Dilution Factor: 1		Analysis Time..: 12:09		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AD
		Dilution Factor: 1		Analysis Time..: 12:09		
Barium	**52.0**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1AG**
		Dilution Factor: 1		Analysis Time..: 12:09		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AH
		Dilution Factor: 1		Analysis Time..: 12:09		
Calcium	**124000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1AJ**
		Dilution Factor: 1		Analysis Time..: 12:09		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AK
		Dilution Factor: 1		Analysis Time..: 12:09		
Cobalt	**13.9 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1AL**
		Dilution Factor: 1		Analysis Time..: 12:09		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AM
		Dilution Factor: 1		Analysis Time..: 12:09		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AN
		Dilution Factor: 1		Analysis Time..: 12:09		
Iron	**3710**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1AP**
		Dilution Factor: 1		Analysis Time..: 12:09		
Magnesium	**25800**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1AQ**
		Dilution Factor: 1		Analysis Time..: 12:09		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW100001

TOTAL Metals

Lot-Sample #...: F1H130407-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**955**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1AR**
		Dilution Factor: 1		Analysis Time..: 12:09		
Sodium	**7070 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9C1AT**
		Dilution Factor: 5		Analysis Time..: 14:56		
Nickel	**566**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1AU**
		Dilution Factor: 1		Analysis Time..: 12:09		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AV
		Dilution Factor: 1		Analysis Time..: 12:09		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AW
		Dilution Factor: 1		Analysis Time..: 12:09		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1AX
		Dilution Factor: 1		Analysis Time..: 12:09		
Strontium	**475 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1A0**
		Dilution Factor: 1		Analysis Time..: 12:09		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1A1
		Dilution Factor: 1		Analysis Time..: 12:09		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9C1A2
		Dilution Factor: 1		Analysis Time..: 12:09		
Zinc	**207**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9C1A3**
		Dilution Factor: 1		Analysis Time..: 12:09		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW100001

General Chemistry

Lot-Sample #...: F1H130407-003 Work Order #...: MLL9C Matrix.....: WATER
Date Sampled...: 08/12/11 10:55 Date Received..: 08/13/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	25.6	2.0	mg/L	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 10		Analysis Time..: 08:08		
Fluoride	1.4	0.10	mg/L	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 1		Analysis Time..: 07:39		
Nitrate	0.030	0.020	mg/L	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1		Analysis Time..: 07:39		
Nitrite	ND	0.040	mg/L	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 2		Analysis Time..: 06:44		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1		Analysis Time..: 07:39		
Sulfate	90.2	2.5	mg/L	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 5		Analysis Time..: 08:47		
Total Alkalinity	316	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	529	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW070001

TOTAL Metals

Lot-Sample #...: F1H130407-004 **Matrix.....:** WATER
Date Sampled...: 08/12/11 11:35 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**33.4**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9D1AF**
		Dilution Factor: 1		Analysis Time..: 20:05		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1AQ
		Dilution Factor: 1		Analysis Time..: 12:15		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1AR
		Dilution Factor: 1		Analysis Time..: 12:15		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1AP
		Dilution Factor: 1		Analysis Time..: 12:15		
Barium	**97.3**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1AT**
		Dilution Factor: 1		Analysis Time..: 12:15		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1AU
		Dilution Factor: 1		Analysis Time..: 12:15		
Calcium	**92000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1AV**
		Dilution Factor: 1		Analysis Time..: 12:15		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1AW
		Dilution Factor: 1		Analysis Time..: 12:15		
Cobalt	**7.0 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1AX**
		Dilution Factor: 1		Analysis Time..: 12:15		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1A0
		Dilution Factor: 1		Analysis Time..: 12:15		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1A1
		Dilution Factor: 1		Analysis Time..: 12:15		
Iron	**2880**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1A2**
		Dilution Factor: 1		Analysis Time..: 12:15		
Magnesium	**27300**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1A3**
		Dilution Factor: 1		Analysis Time..: 12:15		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW070001

TOTAL Metals

Lot-Sample #...: F1H130407-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**387**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1A4**
		Dilution Factor: 1		Analysis Time..: 12:15		
Sodium	**49400 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9D1A5**
		Dilution Factor: 5		Analysis Time..: 15:03		
Nickel	**237**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1A6**
		Dilution Factor: 1		Analysis Time..: 12:15		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1A7
		Dilution Factor: 1		Analysis Time..: 12:15		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1A8
		Dilution Factor: 1		Analysis Time..: 12:15		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1A9
		Dilution Factor: 1		Analysis Time..: 12:15		
Strontium	**325 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1AA**
		Dilution Factor: 1		Analysis Time..: 12:15		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1AC
		Dilution Factor: 1		Analysis Time..: 12:15		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9D1AD
		Dilution Factor: 1		Analysis Time..: 12:15		
Zinc	**35.3**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9D1AE**
		Dilution Factor: 1		Analysis Time..: 12:15		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW070001

General Chemistry

Lot-Sample #...: F1H130407-004 Work Order #...: MLL9D Matrix.....: WATER
Date Sampled...: 08/12/11 11:35 Date Received..: 08/13/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	45.8	20.0	mg/L	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 100		Analysis Time..: 09:49		
Fluoride	2.3	0.10	mg/L	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 1		Analysis Time..: 09:05		
Nitrate	0.013 B	0.020	mg/L	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1		Analysis Time..: 09:05		
Nitrite	ND	0.040	mg/L	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 2		Analysis Time..: 06:57		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1		Analysis Time..: 09:05		
Sulfate	82.2	2.5	mg/L	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 5		Analysis Time..: 09:00		
Total Alkalinity	301	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	495	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003

GC/MS Volatiles

Lot-Sample #...: F1H130407-005 Work Order #...: MLL9E3AN Matrix.....: WATER
Date Sampled...: 08/12/11 Date Received..: 08/13/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 14:41
Dilution Factor: 5

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	25	ug/L
Acetone	ND	10	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Carbon disulfide	ND	10	ug/L
Carbon tetrachloride	ND	5.0	ug/L
Chlorobenzene	ND	10	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chloroethane	**17 D**	**10**	**ug/L**
Chloroform	ND	5.0	ug/L
1,2-Dichlorobenzene	ND	5.0	ug/L
1,3-Dichlorobenzene	ND	5.0	ug/L
1,4-Dichlorobenzene	ND	5.0	ug/L
1,1-Dichloroethane	**190 D**	**5.0**	**ug/L**
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	**40 D**	**5.0**	**ug/L**
1,2-Dichloropropane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	5.0	ug/L
2-Hexanone	ND	25	ug/L
Methylene chloride	**2.4 J,D**	**5.0**	**ug/L**
4-Methyl-2-pentanone	ND	25	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	**3.4 J,D**	**5.0**	**ug/L**
Toluene	**1.6 J,D**	**5.0**	**ug/L**
1,1,2-Trichloroethane	**1.6 J,D**	**5.0**	**ug/L**
Trichloroethene	**160 D**	**5.0**	**ug/L**
Xylenes (total)	ND	25	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	117 *	(85 - 115)
1,2-Dichloroethane-d4	110	(70 - 120)
4-Bromofluorobenzene	106	(75 - 120)

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003

GC/MS Volatiles

Lot-Sample #...: F1H130407-005 Work Order #...: MLL9E3AN Matrix.....: WATER

NOTE(S):

* Surrogate recovery is outside stated control limits.

D Result was obtained from the analysis of a dilution.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003

GC/MS Volatiles

Lot-Sample #...: F1H130407-005 Work Order #...: MLL9E4AN Matrix.....: WATER
Date Sampled...: 08/12/11 Date Received..: 08/13/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 15:07
Dilution Factor: 50
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,2-Dichloroethene (total)	1600 D	100	ug/L
1,1,1-Trichloroethane	600 D	50	ug/L
Vinyl chloride	680 D	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
1,2-Dichloroethane-d4	102	(70 - 120)
4-Bromofluorobenzene	103	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003

TOTAL Metals

Lot-Sample #...: F1H130407-005 **Matrix.....:** WATER
Date Sampled...: 08/12/11 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**176**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9E1AG**
		Dilution Factor: 1		Analysis Time..: 20:25		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1AR
		Dilution Factor: 1		Analysis Time..: 12:35		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1AT
		Dilution Factor: 1		Analysis Time..: 12:35		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1AQ
		Dilution Factor: 1		Analysis Time..: 12:35		
Barium	**110**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1AU**
		Dilution Factor: 1		Analysis Time..: 12:35		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1AV
		Dilution Factor: 1		Analysis Time..: 12:35		
Calcium	**145000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1AW**
		Dilution Factor: 1		Analysis Time..: 12:35		
Cadmium	**1.6 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1AX**
		Dilution Factor: 1		Analysis Time..: 12:35		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1A0
		Dilution Factor: 1		Analysis Time..: 12:35		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1A1
		Dilution Factor: 1		Analysis Time..: 12:35		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1A2
		Dilution Factor: 1		Analysis Time..: 12:35		
Iron	**54.3 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1A3**
		Dilution Factor: 1		Analysis Time..: 12:35		
Magnesium	**47100**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1A4**
		Dilution Factor: 1		Analysis Time..: 12:35		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003

TOTAL Metals

Lot-Sample #...: F1H130407-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**856**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1A5**
		Dilution Factor: 1		Analysis Time..: 12:35		
Sodium	**885000 B**	**20000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9E1A6**
		Dilution Factor: 20		Analysis Time..: 15:22		
Nickel	**103**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1A7**
		Dilution Factor: 1		Analysis Time..: 12:35		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1A8
		Dilution Factor: 1		Analysis Time..: 12:35		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1A9
		Dilution Factor: 1		Analysis Time..: 12:35		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1AA
		Dilution Factor: 1		Analysis Time..: 12:35		
Strontium	**892 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1AC**
		Dilution Factor: 1		Analysis Time..: 12:35		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1AD
		Dilution Factor: 1		Analysis Time..: 12:35		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9E1AE
		Dilution Factor: 1		Analysis Time..: 12:35		
Zinc	**193**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9E1AF**
		Dilution Factor: 1		Analysis Time..: 12:35		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003

General Chemistry

Lot-Sample #...: F1H130407-005 Work Order #...: MLL9E Matrix.....: WATER
Date Sampled...: 08/12/11 Date Received..: 08/13/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	1490	100	mg/L	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 500		Analysis Time..: 10:46		
Fluoride	2.0	1.0	mg/L	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 10		Analysis Time..: 10:18		
Nitrate	0.087	0.020	mg/L	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1		Analysis Time..: 10:03		
Nitrite	ND	1.0	mg/L	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 50		Analysis Time..: 07:11		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1		Analysis Time..: 10:03		
Sulfate	83.6	5.0	mg/L	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 10		Analysis Time..: 09:13		
Total Alkalinity	254	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	3020	100	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 10		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-006 **Matrix.....:** WATER
Date Sampled...: 08/12/11 08:45 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	171	1.0	ug/L	SW846 6020A	08/15-08/17/11	MLL9F1A2
		Dilution Factor: 1		Analysis Time..: 20:32		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AC
		Dilution Factor: 1		Analysis Time..: 12:41		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AD
		Dilution Factor: 1		Analysis Time..: 12:41		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AA
		Dilution Factor: 1		Analysis Time..: 12:41		
Barium	**108**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AE**
		Dilution Factor: 1		Analysis Time..: 12:41		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AF
		Dilution Factor: 1		Analysis Time..: 12:41		
Calcium	**146000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AG**
		Dilution Factor: 1		Analysis Time..: 12:41		
Cadmium	**1.5 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AH**
		Dilution Factor: 1		Analysis Time..: 12:41		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AJ
		Dilution Factor: 1		Analysis Time..: 12:41		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AK
		Dilution Factor: 1		Analysis Time..: 12:41		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AL
		Dilution Factor: 1		Analysis Time..: 12:41		
Iron	**72.9 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AM**
		Dilution Factor: 1		Analysis Time..: 12:41		
Magnesium	**48300**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AN**
		Dilution Factor: 1		Analysis Time..: 12:41		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**865**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AP**
		Dilution Factor: 1		Analysis Time..: 12:41		
Sodium	**836000 B**	**20000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9F1AQ**
		Dilution Factor: 20		Analysis Time..: 15:28		
Nickel	**103**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AR**
		Dilution Factor: 1		Analysis Time..: 12:41		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AT
		Dilution Factor: 1		Analysis Time..: 12:41		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AU
		Dilution Factor: 1		Analysis Time..: 12:41		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AV
		Dilution Factor: 1		Analysis Time..: 12:41		
Strontium	**868 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1AW**
		Dilution Factor: 1		Analysis Time..: 12:41		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1AX
		Dilution Factor: 1		Analysis Time..: 12:41		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9F1A0
		Dilution Factor: 1		Analysis Time..: 12:41		
Zinc	**196**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9F1A1**
		Dilution Factor: 1		Analysis Time..: 12:41		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW060001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-007 **Matrix.....:** WATER
Date Sampled...: 08/12/11 10:00 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**3.6**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9G1AD**
		Dilution Factor: 1		Analysis Time..: 20:39		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AG
		Dilution Factor: 1		Analysis Time..: 12:47		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AH
		Dilution Factor: 1		Analysis Time..: 12:47		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AF
		Dilution Factor: 1		Analysis Time..: 12:47		
Barium	**19.2 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9G1AJ**
		Dilution Factor: 1		Analysis Time..: 12:47		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AK
		Dilution Factor: 1		Analysis Time..: 12:47		
Calcium	**114000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9G1AL**
		Dilution Factor: 1		Analysis Time..: 12:47		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AM
		Dilution Factor: 1		Analysis Time..: 12:47		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AN
		Dilution Factor: 1		Analysis Time..: 12:47		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AP
		Dilution Factor: 1		Analysis Time..: 12:47		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AQ
		Dilution Factor: 1		Analysis Time..: 12:47		
Iron	ND	100	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AR
		Dilution Factor: 1		Analysis Time..: 12:47		
Magnesium	**46500**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9G1AT**
		Dilution Factor: 1		Analysis Time..: 12:47		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW060001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**305**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9G1AU**
		Dilution Factor: 1		Analysis Time..: 12:47		
Sodium	**17400 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9G1AV**
		Dilution Factor: 5		Analysis Time..: 15:35		
Nickel	**223**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9G1AW**
		Dilution Factor: 1		Analysis Time..: 12:47		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AX
		Dilution Factor: 1		Analysis Time..: 12:47		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1A0
		Dilution Factor: 1		Analysis Time..: 12:47		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1A1
		Dilution Factor: 1		Analysis Time..: 12:47		
Strontium	**338 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9G1A2**
		Dilution Factor: 1		Analysis Time..: 12:47		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1A3
		Dilution Factor: 1		Analysis Time..: 12:47		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9G1AA
		Dilution Factor: 1		Analysis Time..: 12:47		
Zinc	**382**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9G1AC**
		Dilution Factor: 1		Analysis Time..: 12:47		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW100001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-008 Matrix.....: WATER
Date Sampled...: 08/12/11 10:55 Date Received..: 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**1.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9H1AH**
		Dilution Factor: 1		Analysis Time..: 20:45		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AL
		Dilution Factor: 1		Analysis Time..: 12:54		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AM
		Dilution Factor: 1		Analysis Time..: 12:54		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AK
		Dilution Factor: 1		Analysis Time..: 12:54		
Barium	**54.6**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1AN**
		Dilution Factor: 1		Analysis Time..: 12:54		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AP
		Dilution Factor: 1		Analysis Time..: 12:54		
Calcium	**128000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1AQ**
		Dilution Factor: 1		Analysis Time..: 12:54		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AR
		Dilution Factor: 1		Analysis Time..: 12:54		
Cobalt	**14.6 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1AT**
		Dilution Factor: 1		Analysis Time..: 12:54		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AU
		Dilution Factor: 1		Analysis Time..: 12:54		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AV
		Dilution Factor: 1		Analysis Time..: 12:54		
Iron	**3600**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1AW**
		Dilution Factor: 1		Analysis Time..: 12:54		
Magnesium	**27200**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1AX**
		Dilution Factor: 1		Analysis Time..: 12:54		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW100001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**998**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1A0**
		Dilution Factor: 1		Analysis Time..: 12:54		
Sodium	**7270 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9H1A1**
		Dilution Factor: 5		Analysis Time..: 15:41		
Nickel	**577**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1A2**
		Dilution Factor: 1		Analysis Time..: 12:54		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1A3
		Dilution Factor: 1		Analysis Time..: 12:54		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AA
		Dilution Factor: 1		Analysis Time..: 12:54		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AC
		Dilution Factor: 1		Analysis Time..: 12:54		
Strontium	**479 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1AD**
		Dilution Factor: 1		Analysis Time..: 12:54		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AE
		Dilution Factor: 1		Analysis Time..: 12:54		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9H1AF
		Dilution Factor: 1		Analysis Time..: 12:54		
Zinc	**208**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9H1AG**
		Dilution Factor: 1		Analysis Time..: 12:54		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW070001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-009 **Matrix.....:** WATER
Date Sampled...: 08/12/11 11:35 **Date Received..:** 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**32.4**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9J1AM**
		Dilution Factor: 1		Analysis Time..: 20:52		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AQ
		Dilution Factor: 1		Analysis Time..: 13:00		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AR
		Dilution Factor: 1		Analysis Time..: 13:00		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AP
		Dilution Factor: 1		Analysis Time..: 13:00		
Barium	**100**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1AT**
		Dilution Factor: 1		Analysis Time..: 13:00		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AU
		Dilution Factor: 1		Analysis Time..: 13:00		
Calcium	**96300**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1AV**
		Dilution Factor: 1		Analysis Time..: 13:00		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AW
		Dilution Factor: 1		Analysis Time..: 13:00		
Cobalt	**7.1 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1AX**
		Dilution Factor: 1		Analysis Time..: 13:00		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1A0
		Dilution Factor: 1		Analysis Time..: 13:00		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1A1
		Dilution Factor: 1		Analysis Time..: 13:00		
Iron	**1080**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1A2**
		Dilution Factor: 1		Analysis Time..: 13:00		
Magnesium	**28600**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1A3**
		Dilution Factor: 1		Analysis Time..: 13:00		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW070001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**379**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1AA**
		Dilution Factor: 1		Analysis Time..: 13:00		
Sodium	**49700 B**	**5000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9J1AC**
		Dilution Factor: 5		Analysis Time..: 15:48		
Nickel	**238**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1AD**
		Dilution Factor: 1		Analysis Time..: 13:00		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AE
		Dilution Factor: 1		Analysis Time..: 13:00		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AF
		Dilution Factor: 1		Analysis Time..: 13:00		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AG
		Dilution Factor: 1		Analysis Time..: 13:00		
Strontium	**340 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1AH**
		Dilution Factor: 1		Analysis Time..: 13:00		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AJ
		Dilution Factor: 1		Analysis Time..: 13:00		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9J1AK
		Dilution Factor: 1		Analysis Time..: 13:00		
Zinc	**22.0**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9J1AL**
		Dilution Factor: 1		Analysis Time..: 13:00		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-010 Matrix.....: WATER
Date Sampled...: 08/12/11 Date Received..: 08/13/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1227138						
Uranium	**174**	**1.0**	**ug/L**	**SW846 6020A**	**08/15-08/17/11**	**MLL9K1AM**
		Dilution Factor: 1		Analysis Time..: 20:59		
Prep Batch #...: 1227139						
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AQ
		Dilution Factor: 1		Analysis Time..: 13:07		
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AR
		Dilution Factor: 1		Analysis Time..: 13:07		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AP
		Dilution Factor: 1		Analysis Time..: 13:07		
Barium	**105**	**50.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1AT**
		Dilution Factor: 1		Analysis Time..: 13:07		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AU
		Dilution Factor: 1		Analysis Time..: 13:07		
Calcium	**143000**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1AV**
		Dilution Factor: 1		Analysis Time..: 13:07		
Cadmium	**1.5 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1AW**
		Dilution Factor: 1		Analysis Time..: 13:07		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AX
		Dilution Factor: 1		Analysis Time..: 13:07		
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1A0
		Dilution Factor: 1		Analysis Time..: 13:07		
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1A1
		Dilution Factor: 1		Analysis Time..: 13:07		
Iron	**58.6 J**	**100**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1A2**
		Dilution Factor: 1		Analysis Time..: 13:07		
Magnesium	**47300**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1A3**
		Dilution Factor: 1		Analysis Time..: 13:07		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H130407-010 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**846**	**15.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1AA**
		Dilution Factor: 1		Analysis Time..: 13:07		
Sodium	**854000 B**	**20000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLL9K1AC**
		Dilution Factor: 20		Analysis Time..: 15:54		
Nickel	**101**	**40.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1AD**
		Dilution Factor: 1		Analysis Time..: 13:07		
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AE
		Dilution Factor: 1		Analysis Time..: 13:07		
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AF
		Dilution Factor: 1		Analysis Time..: 13:07		
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AG
		Dilution Factor: 1		Analysis Time..: 13:07		
Strontium	**841 B**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1AH**
		Dilution Factor: 1		Analysis Time..: 13:07		
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AJ
		Dilution Factor: 1		Analysis Time..: 13:07		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLL9K1AK
		Dilution Factor: 1		Analysis Time..: 13:07		
Zinc	**190**	**20.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLL9K1AL**
		Dilution Factor: 1		Analysis Time..: 13:07		

NOTE(S):

J Estimated result. Result is less than RL.

B Method blank contamination. Analyte detected at a reportable level in blank.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 **Work Order #...:** MLTVV1AA **Matrix.....:** WATER
MB Lot-Sample #: F1H180000-199

Prep Date.....: 08/18/11 **Analysis Time..:** 11:50
Analysis Date..: 08/18/11 **Prep Batch #...:** 1230199
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	107	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 Work Order #...: MLTVV1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	106	(70 - 120)		
4-Bromofluorobenzene	100	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 Work Order #...: MLTXM1AA Matrix.....: WATER
MB Lot-Sample #: F1H190000-041

Prep Date.....: 08/19/11 Analysis Time..: 05:48
Analysis Date..: 08/19/11 Prep Batch #...: 1231041
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	103	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H150000-138 **Prep Batch #...:** 1227138						
Uranium	ND	1.0	ug/L	SW846 6020A	08/15-08/17/11	MLM771AA
		Dilution Factor: 1				
		Analysis Time..: 17:46				
MB Lot-Sample #: F1H150000-139 **Prep Batch #...:** 1227139						
Aluminum	ND	200	ug/L	SW846 6010C	08/15-08/20/11	MLM781A4
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Antimony	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CK
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A2
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Barium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A5
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Beryllium	**0.87 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLM781A6**
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A8
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Calcium	ND	1000	ug/L	SW846 6010C	08/15-08/20/11	MLM781A7
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Chromium	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CA
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A9
		Dilution Factor: 1				
		Analysis Time..: 10:00				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CC
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Iron	ND	100	ug/L	SW846 6010C	08/15-08/20/11	MLM781CD
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Lead	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CJ
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Magnesium	ND	1000	ug/L	SW846 6010C	08/15-08/20/11	MLM781CE
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Manganese	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CF
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Nickel	ND	40.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CH
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Selenium	ND	15.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CL
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Silver	ND	10.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781A3
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Sodium	**399 J**	**1000**	**ug/L**	**SW846 6010C**	**08/15-08/19/11**	**MLM781CG**
		Dilution Factor: 1				
		Analysis Time..: 12:49				
Strontium	**0.80 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/15-08/20/11**	**MLM781CM**
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Thallium	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CN
		Dilution Factor: 1				
		Analysis Time..: 10:00				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CP
		Dilution Factor: 1				
		Analysis Time..: 10:00				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/15-08/20/11	MLM781CQ

Dilution Factor: 1
Analysis Time..: 10:00

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H130407 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLTJ01AA		MB Lot-Sample #:	F1H130000-018	
	ND	0.20	mg/L	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 1				
		Analysis Time..: 03:05				
Fluoride		Work Order #: MLTJ11AA		MB Lot-Sample #:	F1H130000-019	
	ND	0.10	mg/L	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 1				
		Analysis Time..: 03:05				
Nitrate		Work Order #: MLTJ21AA		MB Lot-Sample #:	F1H130000-020	
	ND	0.020	mg/L	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1				
		Analysis Time..: 03:05				
Nitrite		Work Order #: MLQD41AA		MB Lot-Sample #:	F1H150000-060	
	ND	0.020	mg/L	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 1				
		Analysis Time..: 05:37				
Phosphate as P, Ortho		Work Order #: MLTJ41AA		MB Lot-Sample #:	F1H130000-022	
	ND	0.50	mg/L	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1				
		Analysis Time..: 03:05				
Sulfate		Work Order #: MLVDK1AA		MB Lot-Sample #:	F1H180000-226	
	ND	0.50	mg/L	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 1				
		Analysis Time..: 04:45				
Total Alkalinity		Work Order #: MLWW41AC		MB Lot-Sample #:	F1H220000-085	
	ND	5.0	mg/L	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLQ6P1AA		MB Lot-Sample #:	F1H170000-114	
	ND	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 Work Order #...: MLTVV1AC Matrix.....: WATER
LCS Lot-Sample#: F1H180000-199
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 10:30
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichloroethane	97	(70 - 130)	SW846 8260B
Benzene	95	(80 - 120)	SW846 8260B
Trichloroethene	90	(70 - 125)	SW846 8260B
1,2-Dichloropropane	91	(75 - 125)	SW846 8260B
Bromodichloromethane	98	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	98	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	107	(55 - 140)	SW846 8260B
Toluene	103	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	102	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	96	(75 - 125)	SW846 8260B
2-Hexanone	95	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	103	(60 - 135)	SW846 8260B
Chlorobenzene	96	(80 - 120)	SW846 8260B
Bromoform	108	(70 - 130)	SW846 8260B
Ethylbenzene	101	(75 - 125)	SW846 8260B
Styrene	109	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	93	(65 - 130)	SW846 8260B
Tetrachloroethene	101	(45 - 150)	SW846 8260B
1,2-Dichlorobenzene	100	(70 - 120)	SW846 8260B
cis-1,3-Dichloropropene	104	(70 - 130)	SW846 8260B
Dibromochloromethane	104	(60 - 135)	SW846 8260B
Vinyl chloride	87	(50 - 145)	SW846 8260B
Bromomethane	99	(30 - 145)	SW846 8260B
Chloroethane	90	(60 - 135)	SW846 8260B
Acetone	93	(40 - 140)	SW846 8260B
1,1-Dichloroethene	95	(70 - 130)	SW846 8260B
Methylene chloride	88	(55 - 140)	SW846 8260B
Carbon disulfide	84	(35 - 160)	SW846 8260B
1,1-Dichloroethane	93	(70 - 135)	SW846 8260B
2-Butanone	88	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	96	(85 - 115)	SW846 8260B
Chloroform	93	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	99	(65 - 130)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 Work Order #...: MLTVV1AC Matrix.....: WATER
LCS Lot-Sample#: F1H180000-199

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Carbon tetrachloride	**99**	**(65 - 140)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	101	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control paramcters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 Work Order #...: MLTXM1AC Matrix.....: WATER
LCS Lot-Sample#: F1H190000-041
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 04:55
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Vinyl chloride	**83**	**(50 - 145)**	**SW846 8260B**
1,1-Dichloroethane	**94**	**(70 - 135)**	**SW846 8260B**
1,2-Dichloroethene (total)	**97**	**(85 - 115)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H150000-138 **Prep Batch #...:** 1227138					
Uranium	105	(80 - 120)	SW846 6020A	08/15-08/17/11	MLM771AC
		Dilution Factor: 1		Analysis Time..: 17:52	
LCS Lot-Sample#: F1H150000-139 **Prep Batch #...:** 1227139					
Arsenic	106	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AA
		Dilution Factor: 1		Analysis Time..: 10:06	
Silver	95	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AC
		Dilution Factor: 1		Analysis Time..: 10:06	
Aluminum	104	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AD
		Dilution Factor: 1		Analysis Time..: 10:06	
Barium	103	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AE
		Dilution Factor: 1		Analysis Time..: 10:06	
Beryllium	108	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AF
		Dilution Factor: 1		Analysis Time..: 10:06	
Calcium	106	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AG
		Dilution Factor: 1		Analysis Time..: 10:06	
Cadmium	107	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AH
		Dilution Factor: 1		Analysis Time..: 10:06	
Cobalt	101	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AJ
		Dilution Factor: 1		Analysis Time..: 10:06	
Chromium	100	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AK
		Dilution Factor: 1		Analysis Time..: 10:06	
Copper	99	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AL
		Dilution Factor: 1		Analysis Time..: 10:06	
Iron	104	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AM
		Dilution Factor: 1		Analysis Time..: 10:06	
Magnesium	102	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AN
		Dilution Factor: 1		Analysis Time..: 10:06	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	103	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AP
		Dilution Factor: 1	Analysis Time..: 10:06		
Sodium	108	(80 - 120)	SW846 6010C	08/15-08/19/11	MLM781AQ
		Dilution Factor: 1	Analysis Time..: 12:55		
Nickel	104	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AR
		Dilution Factor: 1	Analysis Time..: 10:06		
Lead	103	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AT
		Dilution Factor: 1	Analysis Time..: 10:06		
Antimony	105	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AU
		Dilution Factor: 1	Analysis Time..: 10:06		
Selenium	110	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AV
		Dilution Factor: 1	Analysis Time..: 10:06		
Strontium	113	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AW
		Dilution Factor: 1	Analysis Time..: 10:06		
Thallium	101	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781AX
		Dilution Factor: 1	Analysis Time..: 10:06		
Vanadium	100	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781A0
		Dilution Factor: 1	Analysis Time..: 10:06		
Zinc	115	(80 - 120)	SW846 6010C	08/15-08/20/11	MLM781A1
		Dilution Factor: 1	Analysis Time..: 10:06		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H130407 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLTJ01AC LCS Lot-Sample#: F1H130000-018			
	92	(90 - 110)	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 1	Analysis Time..: 02:51		
Fluoride		Work Order #: MLTJ11AC LCS Lot-Sample#: F1H130000-019			
	96	(90 - 110)	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 1	Analysis Time..: 02:51		
Nitrate		Work Order #: MLTJ21AC LCS Lot-Sample#: F1H130000-020			
	94	(90 - 110)	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1	Analysis Time..: 02:51		
Nitrite		Work Order #: MLQD41AC LCS Lot-Sample#: F1H150000-060			
	96	(90 - 110)	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 1	Analysis Time..: 05:23		
Phosphate as P, Ortho		Work Order #: MLTJ41AC LCS Lot-Sample#: F1H130000-022			
	96	(90 - 110)	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1	Analysis Time..: 02:51		
Sulfate		Work Order #: MLVDK1AC LCS Lot-Sample#: F1H180000-226			
	99	(90 - 110)	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 1	Analysis Time..: 04:32		
Total Alkalinity		Work Order #: MLWW41AA LCS Lot-Sample#: F1H220000-085			
	93	(90 - 110)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLWW41AD LCS Lot-Sample#: F1H220000-085			
	94	(90 - 110)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLQ6P1AC LCS Lot-Sample#: F1H170000-114			
	98	(90 - 113)	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 Work Order #...: MLLN11CV-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-006 MLLN11CW-MSD
Date Sampled...: 08/11/11 09:15 Date Received..: 08/12/11
Prep Date.....: 08/18/11 Analysis Date..: 08/18/11
Prep Batch #...: 1230199 Analysis Time..: 19:05
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	86	(70 - 130)			SW846 8260B
	98	(70 - 130)	13	(0-20)	SW846 8260B
Dibromochloromethane	94	(60 - 135)			SW846 8260B
	103	(60 - 135)	8.5	(0-20)	SW846 8260B
Vinyl chloride	78	(50 - 145)			SW846 8260B
	91	(50 - 145)	15	(0-20)	SW846 8260B
Bromomethane	87	(30 - 145)			SW846 8260B
	95	(30 - 145)	9.2	(0-20)	SW846 8260B
Chloroethane	87	(60 - 135)			SW846 8260B
	97	(60 - 135)	11	(0-20)	SW846 8260B
Acetone	94	(40 - 140)			SW846 8260B
	96	(40 - 140)	2.0	(0-20)	SW846 8260B
1,1-Dichloroethene	97	(70 - 130)			SW846 8260B
	105	(70 - 130)	7.2	(0-20)	SW846 8260B
Methylene chloride	88	(55 - 140)			SW846 8260B
	95	(55 - 140)	7.3	(0-20)	SW846 8260B
Carbon disulfide	91	(35 - 160)			SW846 8260B
	96	(35 - 160)	5.6	(0-20)	SW846 8260B
1,1-Dichloroethane	92	(70 - 135)			SW846 8260B
	100	(70 - 135)	8.3	(0-20)	SW846 8260B
2-Butanone	88	(30 - 150)			SW846 8260B
	94	(30 - 150)	7.1	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	91	(85 - 115)			SW846 8260B
	100	(85 - 115)	9.8	(0-20)	SW846 8260B
Chloroform	89	(65 - 135)			SW846 8260B
	97	(65 - 135)	8.4	(0-20)	SW846 8260B
1,1,1-Trichloroethane	95	(65 - 130)			SW846 8260B
	103	(65 - 130)	8.8	(0-20)	SW846 8260B
Carbon tetrachloride	95	(65 - 140)			SW846 8260B
	103	(65 - 140)	8.2	(0-20)	SW846 8260B
1,2-Dichloroethane	89	(70 - 130)			SW846 8260B
	100	(70 - 130)	12	(0-20)	SW846 8260B
Benzene	92	(80 - 120)			SW846 8260B
	100	(80 - 120)	8.3	(0-20)	SW846 8260B
Trichloroethene	89	(70 - 125)			SW846 8260B
	93	(70 - 125)	4.5	(0-20)	SW846 8260B
1,2-Dichloropropane	89	(75 - 125)			SW846 8260B
	96	(75 - 125)	8.4	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 Work Order #...: MLLN11CV-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-006 MLLN11CW-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	94	(75 - 120)			SW846 8260B
	102	(75 - 120)	8.1	(0-20)	SW846 8260B
1,1,2-Trichloroethane	92	(75 - 125)			SW846 8260B
	102	(75 - 125)	11	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	96	(55 - 140)			SW846 8260B
	106	(55 - 140)	9.7	(0-20)	SW846 8260B
Toluene	100	(75 - 120)			SW846 8260B
	103	(75 - 120)	3.2	(0-20)	SW846 8260B
1,3-Dichlorobenzene	98	(75 - 125)			SW846 8260B
	102	(75 - 125)	3.4	(0-20)	SW846 8260B
1,4-Dichlorobenzene	94	(75 - 125)			SW846 8260B
	99	(75 - 125)	4.5	(0-20)	SW846 8260B
2-Hexanone	82	(55 - 130)			SW846 8260B
	98	(55 - 130)	17	(0-20)	SW846 8260B
4-Methyl-2-pentanone	88	(60 - 135)			SW846 8260B
	102	(60 - 135)	15	(0-20)	SW846 8260B
Chlorobenzene	93	(80 - 120)			SW846 8260B
	98	(80 - 120)	5.5	(0-20)	SW846 8260B
Bromoform	100	(70 - 130)			SW846 8260B
	108	(70 - 130)	7.6	(0-20)	SW846 8260B
Ethylbenzene	98	(75 - 125)			SW846 8260B
	104	(75 - 125)	5.7	(0-20)	SW846 8260B
Styrene	106	(65 - 135)			SW846 8260B
	112	(65 - 135)	6.0	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	90	(65 - 130)			SW846 8260B
	99	(65 - 130)	9.1	(0-20)	SW846 8260B
Tetrachloroethene	96	(45 - 150)			SW846 8260B
	101	(45 - 150)	5.7	(0-20)	SW846 8260B
1,2-Dichlorobenzene	95	(70 - 120)			SW846 8260B
	100	(70 - 120)	5.3	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	105	(85 - 120)
	105	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
	108	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
	105	(70 - 120)
4-Bromofluorobenzene	97	(75 - 120)
	98	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H130407 **Work Order #...:** MLLN71CF-MS **Matrix.....:** WATER
MS Lot-Sample #: F1H120447-007 MLLN71CG-MSD
Date Sampled...: 08/11/11 10:15 **Date Received..:** 08/12/11
Prep Date.....: 08/19/11 **Analysis Date..:** 08/19/11
Prep Batch #...: 1231041 **Analysis Time..:** 09:20
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Vinyl chloride	**93**	**(50 - 145)**			**SW846 8260B**
	96	**(50 - 145)**	**2.4**	**(0-20)**	**SW846 8260B**
1,1-Dichloroethane	**100**	**(70 - 135)**			**SW846 8260B**
	95	**(70 - 135)**	**4.6**	**(0-20)**	**SW846 8260B**
1,2-Dichloroethene (total)	**100**	**(85 - 115)**			**SW846 8260B**
	98	**(85 - 115)**	**2.4**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
	102	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
	102	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)
	100	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H120447-001 **Prep Batch #...:** 1227138							
Uranium	107	(80 - 120)			SW846 6020A	08/15-08/17/11	MLLNJ1A5
	109	(80 - 120)	1.4	(0-20)	SW846 6020A	08/15-08/17/11	MLLNJ1A6
		Dilution Factor: 1					
		Analysis Time..: 18:12					
MS Lot-Sample #: F1H120447-001 **Prep Batch #...:** 1227139							
Aluminum	103	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CC
	97	(80 - 120)	5.6	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CD
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Antimony	101	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C9
	96	(80 - 120)	5.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DA
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Arsenic	104	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1A7
	98	(80 - 120)	5.8	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1A8
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Barium	101	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CE
	96	(80 - 120)	4.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CF
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Beryllium	105	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CG
	101	(80 - 120)	3.9	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CH
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Cadmium	101	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CL
	96	(80 - 120)	5.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CM
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Calcium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CJ
	63 N	(80 - 120)	3.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CK
		Dilution Factor: 1					
		Analysis Time..: 10:19					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CQ
	92	(80 - 120)	4.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CR
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Cobalt	95	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CN
	90	(80 - 120)	4.9	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CP
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Copper	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CT
	92	(80 - 120)	4.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CU
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Iron	99	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CV
	94	(80 - 120)	4.6	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CW
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Lead	97	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C7
	92	(80 - 120)	5.8	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C8
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Magnesium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1CX
	80	(80 - 120)	3.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C0
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Manganese	98	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C1
	94	(80 - 120)	4.0	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C2
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Nickel	97	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1C5
	91	(80 - 120)	5.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1C6
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Selenium	105	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DC
	98	(80 - 120)	7.1	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DD
		Dilution Factor: 1					
		Analysis Time..: 10:19					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H130407 **Matrix.....:** WATER
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	92	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1A9
	88	(80 - 120)	4.6	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1CA
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Sodium	104	(80 - 120)			SW846 6010C	08/15-08/19/11	MLLNJ1C3
	161 N	(80 - 120)	6.3	(0-20)	SW846 6010C	08/15-08/19/11	MLLNJ1C4
		Dilution Factor: 5					
		Analysis Time..: 13:08					
Strontium	109	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DE
	101	(80 - 120)	4.9	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DF
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Thallium	96	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DG
	91	(80 - 120)	5.5	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DH
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Vanadium	97	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DJ
	93	(80 - 120)	3.8	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DK
		Dilution Factor: 1					
		Analysis Time..: 10:19					
Zinc	110	(80 - 120)			SW846 6010C	08/15-08/20/11	MLLNJ1DL
	103	(80 - 120)	6.3	(0-20)	SW846 6010C	08/15-08/20/11	MLLNJ1DM
		Dilution Factor: 1					
		Analysis Time..: 10:19					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H130407 **Matrix.....:** WATER
Date Sampled...: 08/12/11 08:45 **Date Received..:** 08/13/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLL891CH		MS Lot-Sample #: F1H130407-001	
	105	(90 - 110)	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 500	Analysis Time..: 04:03		
Fluoride		Work Order #...: MLL891CK		MS Lot-Sample #: F1H130407-001	
	100	(90 - 110)	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 10	Analysis Time..: 03:34		
Nitrate		Work Order #...: MLL891CM		MS Lot-Sample #: F1H130407-001	
	97	(90 - 110)	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1	Analysis Time..: 03:19		
Nitrite		Work Order #...: MLL891CF		MS Lot-Sample #: F1H130407-001	
	53 N	(90 - 110)	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 50	Analysis Time..: 05:50		
Phosphate as P, Ortho		Work Order #...: MLL891CR		MS Lot-Sample #: F1H130407-001	
	54 N	(90 - 110)	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1	Analysis Time..: 03:19		
Sulfate		Work Order #...: MLL891CW		MS Lot-Sample #: F1H130407-001	
	102	(90 - 110)	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 10	Analysis Time..: 07:53		
Total Alkalinity		Work Order #...: MLKJ51CF		MS Lot-Sample #: F1H110460-009	
	96	(80 - 120)	MCAWW 310.1	08/22/11	1234085
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H130407 **Work Order #...:** MLL89-SMP MLL89-DUP **Matrix.....:** WATER

Date Sampled...: 08/12/11 08:45 **Date Received..:** 08/13/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H130407-001		
	1490	1460	mg/L	2.0	(0-20)	MCAWW 300.0A	08/13/11	1225018
		Dilution Factor: 500				Analysis Time..: 04:03		
Fluoride						SD Lot-Sample #: F1H130407-001		
	2.1	1.9	mg/L	7.2	(0-20)	MCAWW 300.0A	08/13/11	1225019
		Dilution Factor: 10				Analysis Time..: 03:34		
Nitrate						SD Lot-Sample #: F1H130407-001		
	0.090	0.088	mg/L	2.3	(0-20)	MCAWW 300.0A	08/13/11	1225020
		Dilution Factor: 1				Analysis Time..: 03:19		
Nitrite						SD Lot-Sample #: F1H130407-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/15/11	1227060
		Dilution Factor: 50				Analysis Time..: 05:50		
Phosphate as P, Ortho						SD Lot-Sample #: F1H130407-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/13/11	1225022
		Dilution Factor: 1				Analysis Time..: 03:19		
Sulfate						SD Lot-Sample #: F1H130407-001		
	82.9	81.8	mg/L	1.3	(0-20)	MCAWW 300.0A	08/18/11	1230226
		Dilution Factor: 10				Analysis Time..: 07:53		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H130407 **Work Order #...:** MLLN1-SMP MLLN1-DUP **Matrix.....:** WATER

Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H120447-006		
	645	665	mg/L	3.1	(0-0.0)	MCAWW 160.1	08/17-08/22/11	1229114
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H130407 **Work Order #...:** MLKJ5-SMP MLKJ5-DUP **Matrix.....:** WATER

Date Sampled...: 08/10/11 09:30 **Date Received..:** 08/11/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #: F1H110460-009		
	256	257	mg/L	0.31	(0-20)	MCAWW 310.1	08/22/11	1234085

Dilution Factor: 1 Analysis Time..: 00:00

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001

Radiochemistry

Lab Sample ID: F1H130407-001
Work Order: MLL89
Matrix: WATER

Date Collected: 08/12/11 0845
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 39
Uranium 234	55.7		5.1	0.1	0.1	08/19/11	08/21/11
Uranium 235/236	3.22		0.60	0.10	0.06	08/19/11	08/21/11
Uranium 238	56.4		5.2	0.1	0.08	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW060001

Radiochemistry

Lab Sample ID: F1H130407-002
Work Order: MLL9A
Matrix: WATER

Date Collected: 08/12/11 1000
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 75
Uranium 234	1.77		0.29	0.10	0.02	08/19/11	08/21/11
Uranium 235/236	0.034		0.039	0.100	0.031	08/19/11	08/21/11
Uranium 238	1.16		0.23	0.10	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW100001

Radiochemistry

Lab Sample ID: F1H130407-003
Work Order: MLL9C
Matrix: WATER

Date Collected: 08/12/11 1055
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 89
Uranium 234	0.58		0.14	0.10	0.04	08/19/11	08/21/11
Uranium 235/236	0.029		0.034	0.100	0.026	08/19/11	08/21/11
Uranium 238	0.41		0.12	0.10	0.02	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW070001

Radiochemistry

Lab Sample ID: F1H130407-004
Work Order: MLL9D
Matrix: WATER

Date Collected: 08/12/11 1135
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 60
Uranium 234	11.8		1.2	0.1	0.03	08/19/11	08/21/11
Uranium 235/236	0.67		0.20	0.10	0.04	08/19/11	08/21/11
Uranium 238	12.1		1.3	0.1	0.03	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003

Radiochemistry

Lab Sample ID: F1H130407-005
Work Order: MLL9E
Matrix: WATER

Date Collected: 08/12/11 0000
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 44
Uranium 234	49.9		4.5	0.1	0.04	08/19/11	08/21/11
Uranium 235/236	2.69		0.51	0.10	0.05	08/19/11	08/21/11
Uranium 238	50.5		4.6	0.1	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW250001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H130407-006
Work Order: MLL9F
Matrix: WATER

Date Collected: 08/12/11 0845
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 37
Uranium 234	58.5		5.3	0.1	0.1	08/19/11	08/21/11
Uranium 235/236	3.28		0.61	0.10	0.06	08/19/11	08/21/11
Uranium 238	60.5		5.5	0.1	0.05	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW060001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H130407-007
Work Order: MLL9G
Matrix: WATER

Date Collected: 08/12/11 1000
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 71
Uranium 234	1.57		0.28	0.10	0.04	08/19/11	08/21/11
Uranium 235/236	0.107		0.074	0.100	0.056	08/19/11	08/21/11
Uranium 238	1.04		0.22	0.10	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW100001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H130407-008
Work Order: MLL9H
Matrix: WATER

Date Collected: 08/12/11 1055
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1231165		Yld % 79
Uranium 234	0.65		0.16	0.10	0.02	08/19/11	08/21/11
Uranium 235/236	0.011	U	0.021	0.100	0.028	08/19/11	08/21/11
Uranium 238	0.53		0.14	0.10	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW070001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H130407-009
Work Order: MLL9J
Matrix: WATER

Date Collected: 08/12/11 1135
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 74
Uranium 234	10.5		1.1	0.1	0.03	08/19/11	08/21/11
Uranium 235/236	0.54		0.17	0.10	0.05	08/19/11	08/21/11
Uranium 238	10.6		1.1	0.1	0.04	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9003 DISSOLVED

Radiochemistry

Lab Sample ID: F1H130407-010
Work Order: MLL9K
Matrix: WATER

Date Collected: 08/12/11 0000
Date Received: 08/13/11 0910

Parameter	Result	Qual	Total Uncert. (2 c+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1231165	Yld % 41
Uranium 234	55.2		5.0	0.1	0.09	08/19/11	08/21/11
Uranium 235/236	2.96		0.56	0.10	0.06	08/19/11	08/21/11
Uranium 238	56.6		5.1	0.1	0.05	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H130407
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1231165		Yld % 91	F1H190000-165B
Uranium 234	0.013	U	0.021	0.100	0.034	08/19/11	08/21/11
Uranium 235/236	0.009	U	0.018	0.100	0.025	08/19/11	08/21/11
Uranium 238	-0.0037	U	0.0053	0.100	0.039	08/19/11	08/21/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F1H130407
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ +/-)	% Yld	% Rec	QC Control Limits	Lab Sample ID Precision	
Iso URANIUM (LONG CT)	DOE A-01-R MOD		pCi/L	A-01-R MOD				F1H190000-165C	
Uranium 234		3.26	2.97	0.40	89	91	(76 - 136)		
	Spk 2	3.26	3.27	0.43	80	100	(76 - 136)	10	%RPD
Uranium 238		3.39	3.32	0.43	89	98	(76 - 134)		
	Spk 2	3.39	3.60	0.46	80	106	(76 - 134)	8	%RPD
		Batch #:	1231165		Analysis Date:		08/21/11		

NOTE(S): F1H130407

Calculations are performed before rounding to avoid round-off error in calculated results

F1H130407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R268,2-50,V13

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-13

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-22

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-25

Client: 622706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 0
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A04BMW260001			2011-08-12 / 845	MLL89	WATER

SAMPLE COMMENTS:

FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of8	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 5of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H130407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R268,2-50,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 0

Date Received: 2011-08-13

Analytical Due Date: 2011-08-22

Report Due Date: 2011-08-25

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A02MW060001			2011-08-12 / 1000	MLL9A	WATER

SAMPLE COMMENTS:

SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I

F1H130407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R268,2-50,METS

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-13

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-22

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-25

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 0
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

3 A02MW100001 2011-08-12 / 1055 MLL9C WATER

SAMPLE COMMENTS:

BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER

F1H130407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R268,2-50,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-13

Analytical Due Date: 2011-08-22

Report Due Date: 2011-08-25

Report Type: B Standard Report

#SMPS in LOT: 0 | EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

4 A02MW070001 2011-08-12 / 1135 MLL9D WATER

SAMPLE COMMENTS:

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE # | CLIENT SAMPLE ID | Site ID | Client Matrix | DATE/TIME SAMPLED | WORKORDER |

F1H130407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R268,2-50,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2011-08-13

Analytical Due Date: 2011-08-22

Report Due Date: 2011-08-25

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

5 A04BMW9003 2011-08-12 / 0 MLL9E WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

SAMPLE # | CLIENT SAMPLE ID | Site ID | Client Matrix | DATE/TIME SAMPLED | WORKORDER

F1H130407

CLIENT ANALYSIS SUMMARY

Storage Loc: TestAmerica St. Louis R265,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40416 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-13

Analytical Due Date: 2011-08-22

Report Due Date: 2011-08-25

Report Type: B Standard Report

EDD Code: 00

#SMPS In LOT: 0

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

6 A04BMW250001 DISSOLVED 2011-08-12 / 845 MLL9F WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LCT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
7	A02MW060001 DISSOLVED			2011-08-12 / 1000	MLL9G	WATER

SAMPLE COMMENTS:

TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

Storage Loc: R268,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guteryl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 0

Date Received: 2011-08-13

Analytical Due Date: 2011-08-22

Report Due Date: 2011-08-25

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (LCT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	A02MW100001 DISSOLVED			2011-08-12 / 1055	MLL9H	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H130407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R268,METS

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-13

Project: Y40415
Guteryl Steel
Analytical Due Date: 2011-08-22

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-25

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 0
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium latead of 200.8

BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE # | CLIENT SAMPLE ID | Site ID | Client Matrix | DATE/TIME SAMPLED | WORKORDER | I

9 A02MW070001 DISSOLVED 2011-08-12 / 1135 MLL9J WATER

SAMPLE COMMENTS:

MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE # | CLIENT SAMPLE ID | Site ID | Client Matrix | DATE/TIME SAMPLED | WORKORDER | I

10 A04BMW9003 DISSOLVED 2011-08-12 / 0 MLL9K WATER

SAMPLE COMMENTS:

MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06

F1H130407

CLIENT ANALYSIS SUMMARY

Storage Loc: TestAmerica St. Louis R288,METS

Project Manager: LMF
Quote #: 89251
SDG:
Project: Y40415
Guteryl Steel
PO#: 697886
Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 0

Date Received: 2011-08-13
Analytical Due Date: 2011-08-22
Report Due Date: 2011-08-25
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

...StAmerica St. Louis
15 Rider Trail North
...h City, MO 63045
...ne 314.298.8566 fax 314.298.8757

CUR 018

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/12/2011	COC No: 008
...w Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
...0 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
...cinnati, Ohio 45212	Calendar (C) or Work Days (W)			
...3) 782-4700 Phone	TAT if different from Below			
...3) 782-4807 FAX	[X] 2 weeks			SDG No.
...ject Name: Former Guterl Specialty Steel Corporation FUSRA	[ ] 1 week			
...: Lockport, NY	[ ] 2 days			
...#	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury		Sample Specific Notes:
BMW250001	8/12/2011	0845	Grab	GW	10	X		X	X	X	X	X	X	X					3X VIA	4 VLP 2x250 1x500
MW060001	8/12/2011	1000	Grab	GW	7	X		X	X	X	X	X	X							
MW100001	8/12/2011	1055	Grab	GW	7	X		X	X	X	X	X	X							
MW070001	8/12/2011	1135	Grab	GW	7	X		X	X	X	X	X	X							
BMW9003	8/12/2011	—	Grab	GW	10	X		X	X	X	X	X	X	X					3X VIAL	

...servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

...sible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [X] Disposal By Lab [ ] Archive For _____ Months

...cial Instructions/QC Requirements & Comments:

...nquished by: [signature]	Company: Shaw E & I, Inc.	Date/Time: 8/12/11 1635	Received by: [signature]	Company: TAL	Date/Time: 8/12/2011 @ 16:35
...nquished by: [signature]	Company: TAL	Date/Time: 8/12/2011 17:02	Received by: [signature]	Company: TA STL	Date/Time: 8/13/11 0910
...nquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F1H130407 TestAmerica St. Louis

CUR Form #: 0 1 8

CONDITION UPON RECEIPT FORM

Client: SHAW

Quote No: 89251

COC/RFA No: 008

Initiated By: NVD Date: 8/13/11 Time: 0910

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*

1. 4485 0258 3870
2. 4485 0258 3859
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Sample Temperature (s):**

1. 4
2. AMBIENT
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/15/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. Y40415

Guterl Steel

Lot #: F1H160430

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 26, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H160430

This report contains the analytical results for the six samples received under chain of custody by TestAmerica St. Louis on August 16, 2011. These samples are associated with your Guterl Steel project.

All applicable quality control procedures met method-specified acceptance criteria except as noted on the following page.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. **TestAmerica St. Louis' Florida certification number is E87689.** The case narrative is an integral part of this report.

This report shall not be reproduced, except in full, without the written approval of the laboratory.

This report is incomplete without the case narrative. All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

Observations/Nonconformances

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1231041
Tertahydrofuran was removed from the initial calibration lowest point due to poor response. Isobutanol, n-Butanol, 2-Chloroethylvinyl ether, 4-Methyl-2-pentanone and 2-Hexanone were removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration. The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001
F1H160430 (5): A04CMW711DD0001
F1H160430 (6): TRIP BLANK #1

The internal standard recoveries are within QC limits as compared to the IS limits set by the CCV for this 12 hour clock. However, the client requirement for DOD4.1 has the IS limits set to the mid-point of the ICAL as requested. The internal standard(s) recovery is outside the lower QC limit, indicating a potential positive bias. There were no target analytes associated with this internal standard observed above the reporting limit in the sample; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001
F1H160430 (6): TRIP BLANK #1

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1229104
Strontium was observed in the CCB above the acceptable QC limit (>3X MDL). Associated samples which are either non-detect for the contaminant or exhibit concentrations greater than ten (10) times the concentrations observed in the CCB, do not require re-analysis.

Affected Samples:
F1H160430 (1): A04BMW706D0001 DISSOLVED
F1H160430 (3): A04BMW706D0001

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

The MS (MSD) recovery for calcium, magnesium and sodium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:
F1H160430 (1): A04BMW706D0001 DISSOLVED
F1H160430 (2): A04DMW710D0001 DISSOLVED
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001

Chloride (MCAWW 300.0A)

Batch: 1228144
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001
F1H160430 (5): A04CMW711DD0001

Fluoride (MCAWW 300.0A)

Batch: 1228145
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H160430 (3): A04BMW706D0001

The sample was reported ND at dilution, due to high concentrations of other analytes, which masked the retention times for these anions in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H160430 (5): A04CMW711DD0001

Sulfate (MCAWW 300.0A)

Batch: 1228149
The sampls was analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001
F1H160430 (5): A04CMW711DD0001

Nitrite as N (MCAWW 300.0A)

Batch: 1228147
The sample was reported ND at dilution, due to high concentrations of other analytes, which masked the retention times for these anions in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001
F1H160430 (5): A04CMW711DD0001

Phosphate as P, Ortho (MCAWW 300.0A)

Batch: 1228148
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001
F1H160430 (5): A04CMW711DD0001

The samples were reported ND at dilution, due to high concentrations of other analytes, which masked the retention times for these anions in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (5): A04CMW711DD0001

Total Dissolved Solids (MCAWW 160.1)
The samples were analyzed at a dilution based on high concentrations of target analytes. The reporting limit has been adjusted accordingly.

Affected Samples:
F1H160430 (3): A04BMW706D0001
F1H160430 (5): A04CMW711DD0001

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)
There was insufficient sample provided to perform the sample duplicate, an LCS duplicate was used instead.

Affected Samples:
F1H160430 (1): A04BMW706D0001 DISSOLVED
F1H160430 (2): A04DMW710D0001 DISSOLVED
F1H160430 (3): A04BMW706D0001
F1H160430 (4): A04DMW710D0001

There were no other nonconformances or observations noted with any analysis on this lot.

METHODS SUMMARY

F1H160430

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H160430

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLPER	001	A04BMW706D0001 DISSOLVED	08/15/11	08:40
MLPE0	002	A04DMW710D0001 DISSOLVED	08/15/11	09:55
MLPE4	003	A04BMW706D0001	08/15/11	08:40
MLPE8	004	A04DMW710D0001	08/15/11	09:55
MLPE9	005	A04CMW711DD0001	08/15/11	12:00
MLPHA	006	TRIP BLANK #1	08/15/11	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H160430-001 **Matrix.....:** WATER
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**1.7**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLPER1A4**
		Dilution Factor: 1		Analysis Time..: 08:26		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AE
		Dilution Factor: 1		Analysis Time..: 18:57		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AF
		Dilution Factor: 1		Analysis Time..: 18:57		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLPER1AD
		Dilution Factor: 1		Analysis Time..: 12:51		
Barium	**15.4 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPER1AG**
		Dilution Factor: 1		Analysis Time..: 18:57		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AH
		Dilution Factor: 1		Analysis Time..: 18:57		
Calcium	**560000**	**20000**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLPER1AJ**
		Dilution Factor: 20		Analysis Time..: 13:24		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AK
		Dilution Factor: 1		Analysis Time..: 18:57		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AL
		Dilution Factor: 1		Analysis Time..: 18:57		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AM
		Dilution Factor: 1		Analysis Time..: 18:57		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AN
		Dilution Factor: 1		Analysis Time..: 18:57		
Iron	**340**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPER1AP**
		Dilution Factor: 1		Analysis Time..: 18:57		
Magnesium	**127000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPER1AQ**
		Dilution Factor: 5		Analysis Time..: 09:29		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H160430-001 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**102**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPER1AR**
		Dilution Factor: 1		Analysis Time..: 18:57		
Sodium	**170000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPER1AT**
		Dilution Factor: 5		Analysis Time..: 09:29		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AU
		Dilution Factor: 1		Analysis Time..: 18:57		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AV
		Dilution Factor: 1		Analysis Time..: 18:57		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1AW
		Dilution Factor: 1		Analysis Time..: 18:57		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLPER1AX
		Dilution Factor: 1		Analysis Time..: 12:51		
Strontium	**7700**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLPER1A0**
		Dilution Factor: 20		Analysis Time..: 13:24		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1A1
		Dilution Factor: 1		Analysis Time..: 18:57		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPER1A2
		Dilution Factor: 1		Analysis Time..: 18:57		
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLPER1A3
		Dilution Factor: 1		Analysis Time..: 12:51		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H160430-002 **Matrix.....:** WATER
Date Sampled...: 08/15/11 09:55 **Date Received..:** 08/16/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**66.1**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLPE01AF**
		Dilution Factor: 1		Analysis Time..: 08:52		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AL
		Dilution Factor: 1		Analysis Time..: 19:16		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AM
		Dilution Factor: 1		Analysis Time..: 19:16		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE01AK
		Dilution Factor: 1		Analysis Time..: 13:11		
Barium	**47.6 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE01AN**
		Dilution Factor: 1		Analysis Time..: 19:16		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AP
		Dilution Factor: 1		Analysis Time..: 19:16		
Calcium	**113000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE01AQ**
		Dilution Factor: 5		Analysis Time..: 09:48		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AR
		Dilution Factor: 1		Analysis Time..: 19:16		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AT
		Dilution Factor: 1		Analysis Time..: 19:16		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AU
		Dilution Factor: 1		Analysis Time..: 19:16		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AV
		Dilution Factor: 1		Analysis Time..: 19:16		
Iron	**150**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE01AW**
		Dilution Factor: 1		Analysis Time..: 19:16		
Magnesium	**31400**	**1000**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLPE01AX**
		Dilution Factor: 1		Analysis Time..: 12:39		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H160430-002 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**26.4**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE01A0**
		Dilution Factor: 1		Analysis Time..: 19:16		
Sodium	**205000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE01A1**
		Dilution Factor: 5		Analysis Time..: 09:48		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01A2
		Dilution Factor: 1		Analysis Time..: 19:16		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01A3
		Dilution Factor: 1		Analysis Time..: 19:16		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01A4
		Dilution Factor: 1		Analysis Time..: 19:16		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE01A5
		Dilution Factor: 1		Analysis Time..: 13:11		
Strontium	**584**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE01AA**
		Dilution Factor: 5		Analysis Time..: 09:48		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AC
		Dilution Factor: 1		Analysis Time..: 19:16		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE01AD
		Dilution Factor: 1		Analysis Time..: 19:16		
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE01AE
		Dilution Factor: 1		Analysis Time..: 13:11		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001

GC/MS Volatiles

Lot-Sample #...: F1H160430-003 Work Order #...: MLPE41AC Matrix.....: WATER
Date Sampled...: 08/15/11 08:40 Date Received..: 08/16/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 11:31
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethane	**0.38 J**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.55 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.12 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	**0.12 J**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.32 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001

GC/MS Volatiles

Lot-Sample #...: F1H160430-003 Work Order #...: MLPE41AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	103	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001

TOTAL Metals

Lot-Sample #...: F1H160430-003 Matrix.....: WATER
Date Sampled...: 08/15/11 08:40 Date Received..: 08/16/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	1.8	1.0	ug/L	SW846 6020A	08/17-08/19/11	MLPE41A6
		Dilution Factor: 1		Analysis Time..: 09:06		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AG
		Dilution Factor: 1		Analysis Time..: 19:29		
Aluminum	126 J	200	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AH
		Dilution Factor: 1		Analysis Time..: 19:29		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE41AF
		Dilution Factor: 1		Analysis Time..: 13:24		
Barium	16.0 J	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AJ
		Dilution Factor: 1		Analysis Time..: 19:29		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AK
		Dilution Factor: 1		Analysis Time..: 19:29		
Calcium	520000	20000	ug/L	SW846 6010C	08/17-08/23/11	MLPE41AL
		Dilution Factor: 20		Analysis Time..: 13:56		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AM
		Dilution Factor: 1		Analysis Time..: 19:29		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AN
		Dilution Factor: 1		Analysis Time..: 19:29		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AP
		Dilution Factor: 1		Analysis Time..: 19:29		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AQ
		Dilution Factor: 1		Analysis Time..: 19:29		
Iron	393	100	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AR
		Dilution Factor: 1		Analysis Time..: 19:29		
Magnesium	112000	5000	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AT
		Dilution Factor: 5		Analysis Time..: 10:01		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001

TOTAL Metals

Lot-Sample #...: F1H160430-003 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**105**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE41AU**
		Dilution Factor: 1		Analysis Time..: 19:29		
Sodium	**166000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE41AV**
		Dilution Factor: 5		Analysis Time..: 10:01		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AW
		Dilution Factor: 1		Analysis Time..: 19:29		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41AX
		Dilution Factor: 1		Analysis Time..: 19:29		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41A0
		Dilution Factor: 1		Analysis Time..: 19:29		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE41A1
		Dilution Factor: 1		Analysis Time..: 13:24		
Strontium	**7350**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLPE41A2**
		Dilution Factor: 20		Analysis Time..: 13:56		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41A3
		Dilution Factor: 1		Analysis Time..: 19:29		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE41A4
		Dilution Factor: 1		Analysis Time..: 19:29		
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE41A5
		Dilution Factor: 1		Analysis Time..: 13:24		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001

General Chemistry

Lot-Sample #...: F1H160430-003 Work Order #...: MLPE4 Matrix.....: WATER
Date Sampled...: 08/15/11 08:40 Date Received..: 08/16/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	247	40.0	mg/L	MCAWW 300.0A	08/16/11	1228144
		Dilution Factor: 200		Analysis Time..: 06:31		
Fluoride	0.72	0.50	mg/L	MCAWW 300.0A	08/16/11	1228145
		Dilution Factor: 5		Analysis Time..: 06:04		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/16/11	1228146
		Dilution Factor: 1		Analysis Time..: 05:51		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/16/11	1228147
		Dilution Factor: 10		Analysis Time..: 06:18		
Phosphate as P, Ortho	ND	5.0	mg/L	MCAWW 300.0A	08/16/11	1228148
		Dilution Factor: 10		Analysis Time..: 06:18		
Sulfate	1200	100	mg/L	MCAWW 300.0A	08/16/11	1228149
		Dilution Factor: 200		Analysis Time..: 06:31		
Total Alkalinity	234	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	2660	50.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 5		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001

GC/MS Volatiles

Lot-Sample #...: F1H160430-004 Work Order #...: MLPE81AN Matrix.....: WATER
Date Sampled...: 08/15/11 09:55 Date Received..: 08/16/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 15:33
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethane	23	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	9.8	1.0	ug/L
1,2-Dichloroethene (total)	20	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	0.51 J	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	0.21 J	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	10	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	12	1.0	ug/L
Vinyl chloride	0.86 J	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	1.1 J	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001

GC/MS Volatiles

Lot-Sample #...: F1H160430-004 **Work Order #...:** MLPE81AN **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	104	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001

TOTAL Metals

Lot-Sample #...: F1H160430-004 **Matrix.....:** WATER
Date Sampled...: 08/15/11 09:55 **Date Received..:** 08/16/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**67.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLPE81AH**
		Dilution Factor: 1		Analysis Time..: 09:12		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81AT
		Dilution Factor: 1		Analysis Time..: 19:42		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLPE81AU
		Dilution Factor: 1		Analysis Time..: 19:42		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE81AR
		Dilution Factor: 1		Analysis Time..: 13:49		
Barium	**30.6 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE81AV**
		Dilution Factor: 1		Analysis Time..: 19:42		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81AW
		Dilution Factor: 1		Analysis Time..: 19:42		
Calcium	**117000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE81AX**
		Dilution Factor: 5		Analysis Time..: 10:14		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81A0
		Dilution Factor: 1		Analysis Time..: 19:42		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81A1
		Dilution Factor: 1		Analysis Time..: 19:42		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81A2
		Dilution Factor: 1		Analysis Time..: 19:42		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81A3
		Dilution Factor: 1		Analysis Time..: 19:42		
Iron	**94.0 J**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE81A4**
		Dilution Factor: 1		Analysis Time..: 19:42		
Magnesium	**32100**	**1000**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLPE81A5**
		Dilution Factor: 1		Analysis Time..: 12:52		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001

TOTAL Metals

Lot-Sample #...: F1H160430-004 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**25.2**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE81A6**
		Dilution Factor: 1		Analysis Time..: 19:42		
Sodium	**214000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE81A7**
		Dilution Factor: 5		Analysis Time..: 10:14		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81A8
		Dilution Factor: 1		Analysis Time..: 19:42		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81A9
		Dilution Factor: 1		Analysis Time..: 19:42		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81AA
		Dilution Factor: 1		Analysis Time..: 19:42		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE81AC
		Dilution Factor: 1		Analysis Time..: 13:49		
Strontium	**615**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLPE81AD**
		Dilution Factor: 5		Analysis Time..: 10:14		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81AE
		Dilution Factor: 1		Analysis Time..: 19:42		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLPE81AF
		Dilution Factor: 1		Analysis Time..: 19:42		
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLPE81AG
		Dilution Factor: 1		Analysis Time..: 13:49		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001

General Chemistry

Lot-Sample #...: F1H160430-004 Work Order #...: MLPE8 Matrix.....: WATER
Date Sampled...: 08/15/11 09:55 Date Received..: 08/16/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	314	20.0	mg/L	MCAWW 300.0A	08/16/11	1228144
		Dilution Factor: 100		Analysis Time..: 02:03		
Fluoride	1.0	0.10	mg/L	MCAWW 300.0A	08/16/11	1228145
		Dilution Factor: 1		Analysis Time..: 01:23		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/16/11	1228146
		Dilution Factor: 1		Analysis Time..: 01:23		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/16/11	1228147
		Dilution Factor: 10		Analysis Time..: 01:49		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/16/11	1228148
		Dilution Factor: 1		Analysis Time..: 01:23		
Sulfate	73.4	2.5	mg/L	MCAWW 300.0A	08/16/11	1228149
		Dilution Factor: 5		Analysis Time..: 01:36		
Total Alkalinity	272	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	960	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001

GC/MS Volatiles

Lot-Sample #...: F1H160430-005 Work Order #...: MLPE91AA Matrix.....: WATER
Date Sampled...: 08/15/11 12:00 Date Received..: 08/16/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 14:40
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**5.4**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**0.64 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.33 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.50 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.16 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001

GC/MS Volatiles

Lot-Sample #...: F1H160430-005 Work Order #...: MLPE91AA Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	110	(85 - 115)
1,2-Dichloroethane-d4	111	(70 - 120)
4-Bromofluorobenzene	106	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001

General Chemistry

Lot-Sample #...: F1H160430-005 Work Order #...: MLPE9 Matrix.....: WATER
Date Sampled...: 08/15/11 12:00 Date Received..: 08/16/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	806	100	mg/L	MCAWW 300.0A	08/16/11	1228144
		Dilution Factor: 500		Analysis Time..: 05:11		
Fluoride	0.64 B	1.0	mg/L	MCAWW 300.0A	08/16/11	1228145
		Dilution Factor: 10		Analysis Time..: 04:44		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/16/11	1228146
		Dilution Factor: 1		Analysis Time..: 04:31		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/16/11	1228147
		Dilution Factor: 10		Analysis Time..: 04:44		
Phosphate as P, Ortho	ND	5.0	mg/L	MCAWW 300.0A	08/16/11	1228148
		Dilution Factor: 10		Analysis Time..: 04:44		
Sulfate	2170	250	mg/L	MCAWW 300.0A	08/16/11	1228149
		Dilution Factor: 500		Analysis Time..: 05:11		
Total Alkalinity	34.4	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	5030	100	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 10		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #1

GC/MS Volatiles

Lot-Sample #...: F1H160430-006 Work Order #...: MLPHA1AA Matrix.....: WATER
Date Sampled...: 08/15/11 Date Received..: 08/16/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 10:39
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**4.8**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #1

GC/MS Volatiles

Lot-Sample #...: F1H160430-006 Work Order #...: MLPHA1AA Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	105	(85 - 115)
1,2-Dichloroethane-d4	101	(70 - 120)
4-Bromofluorobenzene	103	(75 - 120)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H160430 Work Order #...: MLTXM1AA Matrix.....: WATER
MB Lot-Sample #: F1H190000-041

Prep Date.....: 08/19/11 Analysis Time..: 05:48
Analysis Date..: 08/19/11 Prep Batch #...: 1231041
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	106	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H160430 **Work Order #...:** MLTXM1AA **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	103	(70 - 120)		
4-Bromofluorobenzene	103	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H170000-103 **Prep Batch #...:** 1229103						
Uranium	ND	1.0	ug/L	SW846 6020A	08/17-08/19/11	MLQNA1AA
		Dilution Factor: 1				
		Analysis Time..: 08:13				
MB Lot-Sample #: F1H170000-104 **Prep Batch #...:** 1229104						
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AD
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AU
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQNE1AA
		Dilution Factor: 1				
		Analysis Time..: 12:39				
Barium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AE
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AF
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AH
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Calcium	ND	1000	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AG
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AK
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AJ
		Dilution Factor: 1				
		Analysis Time..: 18:44				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AL
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Iron	ND	100	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AM
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AT
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Magnesium	ND	1000	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AN
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Manganese	ND	15.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AP
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AR
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQNE1AV
		Dilution Factor: 1				
		Analysis Time..: 12:39				
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AC
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Sodium	ND	1000	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AQ
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Strontium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AW
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AX
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1A0
		Dilution Factor: 1				
		Analysis Time..: 18:44				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLQNE1A1

Dilution Factor: 1
Analysis Time..: 12:39

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H160430 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLXXH1AA		MB Lot-Sample #:	F1H160000-144	
	ND	0.20	mg/L	MCAWW 300.0A	08/16/11	1228144
		Dilution Factor: 1				
		Analysis Time..: 01:09				
Fluoride		Work Order #: MLXXM1AA		MB Lot-Sample #:	F1H160000-145	
	ND	0.10	mg/L	MCAWW 300.0A	08/16/11	1228145
		Dilution Factor: 1				
		Analysis Time..: 01:09				
Nitrate		Work Order #: MLXXQ1AA		MB Lot-Sample #:	F1H160000-146	
	ND	0.020	mg/L	MCAWW 300.0A	08/16/11	1228146
		Dilution Factor: 1				
		Analysis Time..: 01:09				
Nitrite		Work Order #: MLXXV1AA		MB Lot-Sample #:	F1H160000-147	
	ND	0.020	mg/L	MCAWW 300.0A	08/16/11	1228147
		Dilution Factor: 1				
		Analysis Time..: 01:09				
Phosphate as P, Ortho		Work Order #: MLXX01AA		MB Lot-Sample #:	F1H160000-148	
	ND	0.50	mg/L	MCAWW 300.0A	08/16/11	1228148
		Dilution Factor: 1				
		Analysis Time..: 01:09				
Sulfate		Work Order #: MLXX31AA		MB Lot-Sample #:	F1H160000-149	
	ND	0.50	mg/L	MCAWW 300.0A	08/16/11	1228149
		Dilution Factor: 1				
		Analysis Time..: 01:09				
Total Alkalinity		Work Order #: MLX1P1AA		MB Lot-Sample #:	F1H230000-125	
	ND	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLQ6P1AA		MB Lot-Sample #:	F1H170000-114	
	ND	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H160430 Work Order #...: MLTXM1AC Matrix.....: WATER
LCS Lot-Sample#: F1H190000-041
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 04:55
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Styrene	110	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	101	(65 - 130)	SW846 8260B
Tetrachloroethene	101	(45 - 150)	SW846 8260B
1,2-Dichlorobenzene	100	(70 - 120)	SW846 8260B
cis-1,3-Dichloropropene	106	(70 - 130)	SW846 8260B
Dibromochloromethane	103	(60 - 135)	SW846 8260B
Vinyl chloride	83	(50 - 145)	SW846 8260B
Bromomethane	101	(30 - 145)	SW846 8260B
Chloroethane	90	(60 - 135)	SW846 8260B
Acetone	93	(40 - 140)	SW846 8260B
1,1-Dichloroethene	99	(70 - 130)	SW846 8260B
Methylene chloride	92	(55 - 140)	SW846 8260B
Carbon disulfide	90	(35 - 160)	SW846 8260B
1,1-Dichloroethane	94	(70 - 135)	SW846 8260B
2-Butanone	101	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	97	(85 - 115)	SW846 8260B
Chloroform	94	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	100	(65 - 130)	SW846 8260B
Carbon tetrachloride	100	(65 - 140)	SW846 8260B
1,2-Dichloroethane	96	(70 - 130)	SW846 8260B
Benzene	95	(80 - 120)	SW846 8260B
Trichloroethene	91	(70 - 125)	SW846 8260B
1,2-Dichloropropane	95	(75 - 125)	SW846 8260B
Bromodichloromethane	100	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	96	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	106	(55 - 140)	SW846 8260B
Toluene	104	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	103	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	99	(75 - 125)	SW846 8260B
2-Hexanone	96	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	108	(60 - 135)	SW846 8260B
Chlorobenzene	95	(80 - 120)	SW846 8260B
Bromoform	109	(70 - 130)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H160430 **Work Order #...:** MLTXM1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H190000-041

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Ethylbenzene	**102**	**(75 - 125)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H170000-103 **Prep Batch #...:** 1229103					
Uranium	109	(80 - 120)	SW846 6020A	08/17-08/19/11	MLQNA1AC
		Dilution Factor: 1		Analysis Time..: 08:19	
LCS Lot-Sample#: F1H170000-104 **Prep Batch #...:** 1229104					
Arsenic	105	(80 - 120)	SW846 6010C	08/17-08/24/11	MLQNE1A2
		Dilution Factor: 1		Analysis Time..: 12:45	
Silver	93	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A3
		Dilution Factor: 1		Analysis Time..: 18:50	
Aluminum	106	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A4
		Dilution Factor: 1		Analysis Time..: 18:50	
Barium	104	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A5
		Dilution Factor: 1		Analysis Time..: 18:50	
Beryllium	112	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A6
		Dilution Factor: 1		Analysis Time..: 18:50	
Calcium	110	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A7
		Dilution Factor: 1		Analysis Time..: 09:23	
Cadmium	106	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A8
		Dilution Factor: 1		Analysis Time..: 18:50	
Cobalt	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A9
		Dilution Factor: 1		Analysis Time..: 18:50	
Chromium	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CA
		Dilution Factor: 1		Analysis Time..: 18:50	
Copper	100	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CC
		Dilution Factor: 1		Analysis Time..: 18:50	
Iron	106	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CD
		Dilution Factor: 1		Analysis Time..: 18:50	
Magnesium	101	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CE
		Dilution Factor: 1		Analysis Time..: 09:23	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	105	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CF
		Dilution Factor: 1	Analysis Time..: 18:50		
Sodium	104	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CG
		Dilution Factor: 1	Analysis Time..: 09:23		
Nickel	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CH
		Dilution Factor: 1	Analysis Time..: 18:50		
Lead	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CJ
		Dilution Factor: 1	Analysis Time..: 18:50		
Antimony	103	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CK
		Dilution Factor: 1	Analysis Time..: 18:50		
Selenium	105	(80 - 120)	SW846 6010C	08/17-08/24/11	MLQNE1CL
		Dilution Factor: 1	Analysis Time..: 12:45		
Strontium	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CM
		Dilution Factor: 1	Analysis Time..: 09:23		
Thallium	100	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CN
		Dilution Factor: 1	Analysis Time..: 18:50		
Vanadium	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CP
		Dilution Factor: 1	Analysis Time..: 18:50		
Zinc	112	(80 - 120)	SW846 6010C	08/17-08/24/11	MLQNE1CQ
		Dilution Factor: 1	Analysis Time..: 12:45		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H160430 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLXXH1AC	LCS Lot-Sample#: F1H160000-144		
	92	(90 - 110)	MCAWW 300.0A	08/16/11	1228144
		Dilution Factor: 1	Analysis Time..: 12:56		
Fluoride		Work Order #: MLXXM1AC	LCS Lot-Sample#: F1H160000-145		
	96	(90 - 110)	MCAWW 300.0A	08/16/11	1228145
		Dilution Factor: 1	Analysis Time..: 12:56		
Nitrate		Work Order #: MLXXQ1AC	LCS Lot-Sample#: F1H160000-146		
	97	(90 - 110)	MCAWW 300.0A	08/16/11	1228146
		Dilution Factor: 1	Analysis Time..: 12:56		
Nitrite		Work Order #: MLXXV1AC	LCS Lot-Sample#: F1H160000-147		
	95	(90 - 110)	MCAWW 300.0A	08/16/11	1228147
		Dilution Factor: 1	Analysis Time..: 12:56		
Phosphate as P, Ortho		Work Order #: MLXX01AC	LCS Lot-Sample#: F1H160000-148		
	99	(90 - 110)	MCAWW 300.0A	08/16/11	1228148
		Dilution Factor: 1	Analysis Time..: 12:56		
Sulfate		Work Order #: MLXX31AC	LCS Lot-Sample#: F1H160000-149		
	95	(90 - 110)	MCAWW 300.0A	08/16/11	1228149
		Dilution Factor: 1	Analysis Time..: 12:56		
Total Alkalinity		Work Order #: MLX1P1AC	LCS Lot-Sample#: F1H230000-125		
	94	(90 - 110)	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLX1P1AD	LCS Lot-Sample#: F1H230000-125		
	94	(90 - 110)	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLQ6P1AC	LCS Lot-Sample#: F1H170000-114		
	98	(90 - 113)	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H160430 Work Order #...: MLLN71CF-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-007 MLLN71CG-MSD
Date Sampled...: 08/11/11 10:15 Date Received..: 08/12/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 09:20
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	101	(70 - 130)			SW846 8260B
	103	(70 - 130)	2.4	(0-20)	SW846 8260B
Dibromochloromethane	104	(60 - 135)			SW846 8260B
	102	(60 - 135)	1.6	(0-20)	SW846 8260B
Vinyl chloride	93	(50 - 145)			SW846 8260B
	96	(50 - 145)	2.4	(0-20)	SW846 8260B
Bromomethane	107	(30 - 145)			SW846 8260B
	102	(30 - 145)	5.0	(0-20)	SW846 8260B
Chloroethane	100	(60 - 135)			SW846 8260B
	97	(60 - 135)	3.2	(0-20)	SW846 8260B
Acetone	111	(40 - 140)			SW846 8260B
	95	(40 - 140)	15	(0-20)	SW846 8260B
1,1-Dichloroethene	107	(70 - 130)			SW846 8260B
	96	(70 - 130)	11	(0-20)	SW846 8260B
Methylene chloride	133	(55 - 140)			SW846 8260B
	135	(55 - 140)	1.7	(0-20)	SW846 8260B
Carbon disulfide	97	(35 - 160)			SW846 8260B
	86	(35 - 160)	12	(0-20)	SW846 8260B
1,1-Dichloroethane	100	(70 - 135)			SW846 8260B
	95	(70 - 135)	4.6	(0-20)	SW846 8260B
2-Butanone	91	(30 - 150)			SW846 8260B
	97	(30 - 150)	6.4	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	100	(85 - 115)			SW846 8260B
	98	(85 - 115)	2.4	(0-20)	SW846 8260B
Chloroform	99	(65 - 135)			SW846 8260B
	94	(65 - 135)	5.1	(0-20)	SW846 8260B
1,1,1-Trichloroethane	108	(65 - 130)			SW846 8260B
	102	(65 - 130)	5.6	(0-20)	SW846 8260B
Carbon tetrachloride	108	(65 - 140)			SW846 8260B
	102	(65 - 140)	5.4	(0-20)	SW846 8260B
1,2-Dichloroethane	99	(70 - 130)			SW846 8260B
	100	(70 - 130)	0.19	(0-20)	SW846 8260B
Benzene	100	(80 - 120)			SW846 8260B
	98	(80 - 120)	2.2	(0-20)	SW846 8260B
Trichloroethene	93	(70 - 125)			SW846 8260B
	94	(70 - 125)	0.16	(0-20)	SW846 8260B
1,2-Dichloropropane	99	(75 - 125)			SW846 8260B
	98	(75 - 125)	0.89	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H160430 Work Order #...: MLLN71CF-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-007 MLLN71CG-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	103	(75 - 120)			SW846 8260B
	102	(75 - 120)	0.87	(0-20)	SW846 8260B
1,1,2-Trichloroethane	102	(75 - 125)			SW846 8260B
	97	(75 - 125)	5.2	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	107	(55 - 140)			SW846 8260B
	107	(55 - 140)	0.56	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	102	(75 - 120)	3.8	(0-20)	SW846 8260B
1,3-Dichlorobenzene	107	(75 - 125)			SW846 8260B
	105	(75 - 125)	2.2	(0-20)	SW846 8260B
1,4-Dichlorobenzene	100	(75 - 125)			SW846 8260B
	101	(75 - 125)	1.0	(0-20)	SW846 8260B
2-Hexanone	96	(55 - 130)			SW846 8260B
	91	(55 - 130)	5.8	(0-20)	SW846 8260B
4-Methyl-2-pentanone	96	(60 - 135)			SW846 8260B
	98	(60 - 135)	2.8	(0-20)	SW846 8260B
Chlorobenzene	100	(80 - 120)			SW846 8260B
	98	(80 - 120)	1.7	(0-20)	SW846 8260B
Bromoform	107	(70 - 130)			SW846 8260B
	111	(70 - 130)	3.0	(0-20)	SW846 8260B
Ethylbenzene	105	(75 - 125)			SW846 8260B
	104	(75 - 125)	1.2	(0-20)	SW846 8260B
Styrene	114	(65 - 135)			SW846 8260B
	110	(65 - 135)	3.6	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	97	(65 - 130)			SW846 8260B
	96	(65 - 130)	1.5	(0-20)	SW846 8260B
Tetrachloroethene	104	(45 - 150)			SW846 8260B
	101	(45 - 150)	2.3	(0-20)	SW846 8260B
1,2-Dichlorobenzene	104	(70 - 120)			SW846 8260B
	103	(70 - 120)	1.2	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
	102	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
	102	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)
	100	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes QC parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H160430-001 **Prep Batch #...:** 1229103							
Uranium	112	(80 - 120)			SW846 6020A	08/17-08/19/11	MLPER1A6
	112	(80 - 120)	0.11	(0-20)	SW846 6020A	08/17-08/19/11	MLPER1A7
		Dilution Factor: 1					
		Analysis Time..: 08:39					
MS Lot-Sample #: F1H160430-001 **Prep Batch #...:** 1229104							
Aluminum	108	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CD
	104	(80 - 120)	3.7	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CE
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Antimony	104	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1DA
	101	(80 - 120)	3.1	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1DC
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Arsenic	108	(80 - 120)			SW846 6010C	08/17-08/24/11	MLPER1A8
	105	(80 - 120)	2.7	(0-20)	SW846 6010C	08/17-08/24/11	MLPER1A9
		Dilution Factor: 1					
		Analysis Time..: 12:58					
Barium	104	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CF
	101	(80 - 120)	3.0	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CG
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Beryllium	108	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CH
	105	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CJ
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Cadmium	98	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CM
	95	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CN
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Calcium	180 N	(80 - 120)			SW846 6010C	08/17-08/23/11	MLPER1CK
	188 N	(80 - 120)	0.13	(0-20)	SW846 6010C	08/17-08/23/11	MLPER1CL
		Dilution Factor: 20					
		Analysis Time..: 13:30					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	97	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CR
	94	(80 - 120)	2.4	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CT
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Cobalt	95	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CP
	92	(80 - 120)	2.5	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CQ
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Copper	101	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CU
	98	(80 - 120)	3.6	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CV
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Iron	100	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CW
	97	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CX
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Lead	93	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C8
	92	(80 - 120)	2.1	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C9
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Magnesium	122 N	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C0
	105	(80 - 120)	1.2	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C1
		Dilution Factor: 5					
		Analysis Time..: 09:35					
Manganese	100	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C2
	98	(80 - 120)	2.6	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C3
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Nickel	94	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C6
	92	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C7
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Selenium	109	(80 - 120)			SW846 6010C	08/17-08/24/11	MLPER1DD
	106	(80 - 120)	2.9	(0-20)	SW846 6010C	08/17-08/24/11	MLPER1DE
		Dilution Factor: 1					
		Analysis Time..: 12:58					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H160430 **Matrix.....:** WATER
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	95	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CA
	92	(80 - 120)	2.6	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CC
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Sodium	130 N	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C4
	113	(80 - 120)	0.94	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C5
		Dilution Factor: 5					
		Analysis Time..: 09:35					
Strontium	109	(80 - 120)			SW846 6010C	08/17-08/23/11	MLPER1DF
	109	(80 - 120)	0.0	(0-20)	SW846 6010C	08/17-08/23/11	MLPER1DG
		Dilution Factor: 20					
		Analysis Time..: 13:30					
Thallium	92	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1DH
	89	(80 - 120)	2.8	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1DJ
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Vanadium	99	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1DK
	97	(80 - 120)	2.6	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1DL
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Zinc	113	(80 - 120)			SW846 6010C	08/17-08/24/11	MLPER1DM
	110	(80 - 120)	2.4	(0-20)	SW846 6010C	08/17-08/24/11	MLPER1DN
		Dilution Factor: 1					
		Analysis Time..: 12:58					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H160430 **Matrix.....:** WATER
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLPE81CG		MS Lot-Sample #: F1H160430-004	
	115 N	(90 - 110)	MCAWW 300.0A	08/16/11	1228144
		Dilution Factor: 100	Analysis Time..: 02:03		
Fluoride		Work Order #...: MLPE81CJ		MS Lot-Sample #: F1H160430-004	
	97	(90 - 110)	MCAWW 300.0A	08/16/11	1228145
		Dilution Factor: 1	Analysis Time..: 01:23		
Nitrate		Work Order #...: MLPE81CL		MS Lot-Sample #: F1H160430-004	
	92	(90 - 110)	MCAWW 300.0A	08/16/11	1228146
		Dilution Factor: 1	Analysis Time..: 01:23		
Nitrite		Work Order #...: MLPE81CN		MS Lot-Sample #: F1H160430-004	
	51 N	(90 - 110)	MCAWW 300.0A	08/16/11	1228147
		Dilution Factor: 10	Analysis Time..: 01:49		
Phosphate as P, Ortho		Work Order #...: MLPE81CQ		MS Lot-Sample #: F1H160430-004	
	104	(90 - 110)	MCAWW 300.0A	08/16/11	1228148
		Dilution Factor: 1	Analysis Time..: 01:23		
Sulfate		Work Order #...: MLPE81CT		MS Lot-Sample #: F1H160430-004	
	106	(90 - 110)	MCAWW 300.0A	08/16/11	1228149
		Dilution Factor: 5	Analysis Time..: 01:36		
Total Alkalinity		Work Order #...: MLPE41CG		MS Lot-Sample #: F1H160430-003	
	110	(80 - 120)	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H160430 **Work Order #...:** MLPE8-SMP MLPE8-DUP **Matrix.....:** WATER

Date Sampled...: 08/15/11 09:55 **Date Received..:** 08/16/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H160430-004		
	314	314	mg/L	0.011	(0-20)	MCAWW 300.0A	08/16/11	1228144
		Dilution Factor: 100				Analysis Time..: 02:03		
Fluoride						SD Lot-Sample #: F1H160430-004		
	1.0	1.0	mg/L	0.59	(0-20)	MCAWW 300.0A	08/16/11	1228145
		Dilution Factor: 1				Analysis Time..: 01:23		
Nitrate						SD Lot-Sample #: F1H160430-004		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/16/11	1228146
		Dilution Factor: 1				Analysis Time..: 01:23		
Nitrite						SD Lot-Sample #: F1H160430-004		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/16/11	1228147
		Dilution Factor: 10				Analysis Time..: 01:49		
Phosphate as P, Ortho						SD Lot-Sample #: F1H160430-004		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/16/11	1228148
		Dilution Factor: 1				Analysis Time..: 01:23		
Sulfate						SD Lot-Sample #: F1H160430-004		
	73.4	72.6	mg/L	1.2	(0-20)	MCAWW 300.0A	08/16/11	1228149
		Dilution Factor: 5				Analysis Time..: 01:36		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H160430 **Work Order #...:** MLLN1-SMP MLLN1-DUP **Matrix.....:** WATER

Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H120447-006		
	645	665	mg/L	3.1	(0-0.0)	MCAWW 160.1	08/17-08/22/11	1229114
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H160430 **Work Order #...:** MLPE4-SMP **Matrix.....:** WATER
MLPE4-DUP
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total	Alkalinity					SD Lot-Sample #:	F1H160430-003	
	234	236	mg/L	0.68	(0-20)	MCAWW 310.1	08/23/11	1235125
			Dilution Factor: 1			Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H160430-001
Work Order: MLPER
Matrix: WATER

Date Collected: 08/15/11 0840
Date Received: 08/16/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 73
Uranium 234	0.95		0.20	0.10	0.06	08/22/11	08/23/11
Uranium 235/236	0.012	U	0.023	0.100	0.031	08/22/11	08/23/11
Uranium 238	0.42		0.13	0.10	0.03	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H160430-002
Work Order: MLPE0
Matrix: WATER

Date Collected: 08/15/11 0955
Date Received: 08/16/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 49
Uranium 234	24.0		2.3	0.1	0.06	08/22/11	08/23/11
Uranium 235/236	1.20		0.31	0.10	0.08	08/22/11	08/23/11
Uranium 238	23.8		2.3	0.1	0.06	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW706D0001

Radiochemistry

Lab Sample ID: F1H160430-003
Work Order: MLPE4
Matrix: WATER

Date Collected: 08/15/11 0840
Date Received: 08/16/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 58
Uranium 234	0.98		0.23	0.10	0.03	08/22/11	08/23/11
Uranium 235/236	0.029	U	0.041	0.100	0.039	08/22/11	08/23/11
Uranium 238	0.48		0.16	0.10	0.06	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0001

Radiochemistry

Lab Sample ID: F1H160430-004
Work Order: MLPE8
Matrix: WATER

Date Collected: 08/15/11 0955
Date Received: 08/16/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 57
Uranium 234	19.1		1.9	0.1	0.03	08/22/11	08/23/11
Uranium 235/236	1.02		0.26	0.10	0.07	08/22/11	08/23/11
Uranium 238	19.9		1.9	0.1	0.06	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H160430
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID / Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1234168		Yld % 93	F1H220000-168B
Uranium 234	0.019	U	0.027	0.100	0.041	08/22/11	08/23/11
Uranium 235/236	-0.0024	U	0.0048	0.100	0.043	08/22/11	08/23/11
Uranium 238	-0.0019	U	0.0038	0.100	0.035	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F1H160430
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ+/-)	% Yld	% Rec	QC Control Limits	Lab Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	A-01-R MOD			F1H220000-168C		
Uranium 234		3.26	3.09	0.40	91	95	(76 - 136)		
	Spk 2	3.27	3.11	0.41	86	95	(76 - 136)	0.8	%RPD
Uranium 238		3.39	3.39	0.43	91	100	(76 - 134)		
	Spk 2	3.39	3.23	0.42	86	95	(76 - 134)	5	%RPD
		Batch #:	1234168		Analysis Date:		08/23/11		

NOTE(S):F1H160430

Calculations are performed before rounding to avoid round-off error in calculated results

TestAmerica St. Louis

F1H160430

CLIENT ANALYSIS SUMMARY

Storage Loc: R274

Date Received: 2011-08-16

Analytical Due Date: 2011-08-24

Report Due Date: 2011-08-26

Project Manager: LMF

Quote #: 89251 SDG:

Project: Y40415 Guterl Steel

PO#: 697886 Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 6

Raport Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A04BMW706D0001 DISSOLVED			2011-08-15 / 840	MLPER	WATER

SAMPLE COMMENTS:

SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A04DMW710D0001 DISSOLVED			2011-08-15 / 956	MLPE0	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H160430

CLIENT ANALYSIS SUMMARY

Storage Loc: R274

Project Manager: LMF | Quote #: 89251 | SDG: | Date Received: 2011-08-16

Project: Y40415 | Guterl Steel | Analytical Due Date: 2011-08-24

PO#: 697886 | Report to: Kevin Cronin | Report Due Date: 2011-08-26

Client: 522706 | Shaw Environmental & Infrastructure Inc | #SMPS In LOT: 6 | Report Type: B Standard Report | EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A04BMW706D0001			2011-08-15 / 840	MLPE4	WATER

SAMPLE COMMENTS:

CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H160430

CLIENT ANALYSIS SUMMARY

Storage Loc: 2-56,R274

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc | #SMPS In LOT: 6

Date Received: 2011-08-16

Analytical Due Date: 2011-08-24

Report Due Date: 2011-08-26

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 5of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
4	A04DMW710D0001			2011-08-15 / 955	MLPE8	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H160430 CLIENT ANALYSIS SUMMARY

Storage Loc: 2-56,R274
Date Received: 2011-08-16
Analytical Due Date: 2011-08-24
Report Due Date: 2011-08-26
Report Type: B Standard Report
EDD Code: 00

Project Manager: LMF Quote #: 89251 SDG:
Project: Y40415 Gutert Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc #SMPS in LOT: 6

DoD QSM 4.1 please use 6020 for total uranium listead of 200.8

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
5	A04CMW711DD0001			2011-08-15 / 1200	MLPE9	WATER

SAMPLE COMMENTS:

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
6	TRIP BLANK #1			2011-08-15 / 0	MLPHA	WATER

SAMPLE COMMENTS:

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	

estAmerica St. Louis
715 Rider Trail North
th City, MO 63045
one 314.298.8566 fax 314.298.8757

cur 78

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/15/2011	COC No: 009
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
ncinnati, Ohio 45212	Calendar (C) or Work Days (W)			
13) 782-4700 Phone	TAT if different from Below ____			
13) 782-4807 FAX	☒ 2 weeks			SDG No.
oject Name: Former Guterl Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
D #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
4BMW706D0001 2XLP, 250P 2XLP, 250P	8/15/2011	0840	Grab	GW	10	X		X	X	X	X	X	X	X	3X40		500P		
4DMW710D0001	8/15/2011	0955	Grab	GW	10	X		X	X	X	X	X	X	X					
4CMW711DD0001	8/15/2011	1200	Grab	GW	4						X	X	X	X					
RIP BLANK #1	8/15/11	–			1									X	40mL				

706DD on label SW 8.16.11

eservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

ssible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

ecial Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Shaw E & I. Inc.	8/15/11	[signature]	BFLO	08-15-11 16:30
[signature]	BFLO	08-15-11 17:00	[signature]	TASL	8-16-11 0915

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F1H160430

TestAmerica St. Louis

CUR Form #: 0 7 8

CONDITION UPON RECEIPT FORM

Client: Shaw

Quote No: 89251

COC/RFA No: 009

Initiated By: SV Date: 8.16.11 Time: 0915

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: Y (N)

Shipping # (s):*

1. 4485 0258 4101
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Sample Temperature (s):**

1. 5
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/17/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. Y40415

Guterl Steel

Lot #: F1H170425

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 30, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H170425

This report contains the analytical results for the 13 samples received under chain of custody by TestAmerica in St. Louis on August 17, 2011. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1231041
Tertahydrofuran was removed from the initial calibration lowest point due to poor response. Isobutanol, n-Butanol, 2-Chloroethylvinyl ether, 4-Methyl-2-pentanone and 2-Hexanone were removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration. The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

The internal standard recoveries are within QC limits as compared to the IS limits set by the CCV for this 12 hour clock. However, the client requirement for DOD4.1 has the IS limits set to the mid-point of the ICAL as requested. The internal standard(s) recovery is outside the lower QC limit, indicating a potential positive bias. There were no target analytes associated with this internal standard observed above the reporting limit in the sample; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1H170425 (7): A03MW606D0001
F1H170425 (13): TRIP BLANK #2

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1229104
Strontium was observed in the CCB above the acceptable QC limit (>3X MDL). Associated samples which are either non-detect for the contaminant or exhibit concentrations greater than ten (10) times the concentrations observed in the CCB, do not require re-analysis.

Affected Samples:
F1H170425 (12): A04CMW711DD0001

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

The MS (MSD) recovery for calcium, magnesium, and sodium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:
F1H170425 (1): A03MW606D0001 DISSOLVED
F1H170425 (2): A03MW14D0001 DISSOLVED
F1H170425 (3): A03MW606DR0001 DISSOLVED
F1H170425 (4): A03MW15D0001 DISSOLVED
F1H170425 (5): A03MW17D0001 DISSOLVED
F1H170425 (6): A04CMW711DD0001 DISSOLVED
F1H170425 (7): A03MW606D0001
F1H170425 (8): A03MW14D0001
F1H170425 (9): A03MW606DR0001
F1H170425 (10): A03MW15D0001
F1H170425 (11): A03MW17D0001
F1H170425 (12): A04CMW711DD0001

Chloride (MCAWW 300.0A)

Batch: 1229091
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H170425 (7): A03MW606D0001
F1H170425 (8): A03MW14D0001
F1H170425 (9): A03MW606DR0001
F1H170425 (10): A03MW15D0001
F1H170425 (11): A03MW17D0001

Fluoride (MCAWW 300.0A)

Batch: 1329092
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H170425 (7): A03MW606D0001
F1H170425 (8): A03MW14D0001
F1H170425 (9): A03MW606DR0001
F1H170425 (10): A03MW15D0001

Nitrite (MCAWW 300.0A)

Batch: 1229094
The following samples were reported ND at dilution for Nitrite, due to a matrix interference with Chloride, which masked the Nitrite retention time in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for are attributed to matrix interference.

Affected Samples:
F1H170425 (7): A03MW606D0001
F1H170425 (8): A03MW14D0001
F1H170425 (9): A03MW606DR0001
F1H170425 (10): A03MW15D0001
F1H170425 (11): A03MW17D0001

Orthophosphate as P (MCAWW 300.0A)

Batch: 1229095
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Ortho Phos are attributed to matrix interference.

Affected Samples:
F1H170425 (7): A03MW606D0001
F1H170425 (8): A03MW14D0001
F1H170425 (9): A03MW606DR0001
F1H170425 (10): A03MW15D0001
F1H170425 (11): A03MW17D0001

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)
There was insufficient sample provided to perform the sample duplicate, an LCS duplicate was used instead.

Affected Samples:
F1H170425 (1): A03MW606D0001 DISSOLVED
F1H170425 (2): A03MW14D0001 DISSOLVED
F1H170425 (3): A03MW606DR0001 DISSOLVED
F1H170425 (4): A03MW15D0001 DISSOLVED
F1H170425 (5): A03MW17D0001 DISSOLVED
F1H170425 (6): A04CMW711DD0001 DISSOLVED
F1H170425 (7): A03MW606D0001
F1H170425 (8): A03MW14D0001
F1H170425 (9): A03MW606DR0001
F1H170425 (10): A03MW15D0001
F1H170425 (11): A03MW17D0001
F1H170425 (12): A04CMW711DD0001

The Uranium samples have tracer recoveries below the 30% QC limit. The samples were re-extracted. The re-extracted samples results will be reported with this narrative.

Affected Samples:
F1H170425 (2): A03MW14D0001 DISSOLVED
F1H170425 (6): A04CMW711DD0001 DISSOLVED
F1H170425 (11): A03MW17D0001

The reporting limit for Uranium was not met due to reduced tracer recovery. The tracer recovery is within acceptance criteria. Analytical results are reported.

Affected Samples:
F1H170425 (3): A03MW606DR0001 DISSOLVED
F1H170425 (12): A04CMW711DD0001

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H170425

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H170425

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLQGL	001	A03MW606D0001 DISSOLVED	08/16/11	08:45
MLQG0	002	A03MW14D0001 DISSOLVED	08/16/11	09:15
MLQG2	003	A03MW606DR0001 DISSOLVED	08/15/11	09:55
MLQG8	004	A03MW15D0001 DISSOLVED	08/16/11	10:35
MLQG9	005	A03MW17D0001 DISSOLVED	08/16/11	13:00
MLQHA	006	A04CMW711DD0001 DISSOLVED	08/15/11	12:00
MLQHH	007	A03MW606D0001	08/16/11	08:45
MLQJK	008	A03MW14D0001	08/16/11	09:15
MLQJL	009	A03MW606DR0001	08/15/11	09:55
MLQJP	010	A03MW15D0001	08/16/11	10:35
MLQJQ	011	A03MW17D0001	08/16/11	13:00
MLQJR	012	A04CMW711DD0001	08/15/11	12:00
MLQJ3	013	TRIP BLANK #2	08/16/11	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-001 **Matrix.....:** WATER
Date Sampled...: 08/16/11 08:45 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**7.4**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQGL1A3**
		Dilution Factor: 1		Analysis Time..: 09:33		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AD
		Dilution Factor: 1		Analysis Time..: 20:01		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AE
		Dilution Factor: 1		Analysis Time..: 20:01		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQGL1AC
		Dilution Factor: 1		Analysis Time..: 13:56		
Barium	**155**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQGL1AF**
		Dilution Factor: 1		Analysis Time..: 20:01		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AG
		Dilution Factor: 1		Analysis Time..: 20:01		
Calcium	**44300**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQGL1AH**
		Dilution Factor: 5		Analysis Time..: 10:33		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AJ
		Dilution Factor: 1		Analysis Time..: 20:01		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AK
		Dilution Factor: 1		Analysis Time..: 20:01		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AL
		Dilution Factor: 1		Analysis Time..: 20:01		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AM
		Dilution Factor: 1		Analysis Time..: 20:01		
Iron	**1420**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQGL1AN**
		Dilution Factor: 1		Analysis Time..: 20:01		
Magnesium	**135000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQGL1AP**
		Dilution Factor: 5		Analysis Time..: 10:33		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-001 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**176**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQGL1AQ**
		Dilution Factor: 1		Analysis Time..: 20:01		
Sodium	**109000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQGL1AR**
		Dilution Factor: 5		Analysis Time..: 10:33		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AT
		Dilution Factor: 1		Analysis Time..: 20:01		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AU
		Dilution Factor: 1		Analysis Time..: 20:01		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1AV
		Dilution Factor: 1		Analysis Time..: 20:01		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQGL1AW
		Dilution Factor: 1		Analysis Time..: 13:56		
Strontium	**213**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQGL1AX**
		Dilution Factor: 5		Analysis Time..: 10:33		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1A0
		Dilution Factor: 1		Analysis Time..: 20:01		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQGL1A1
		Dilution Factor: 1		Analysis Time..: 20:01		
Zinc	**184**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQGL1A2**
		Dilution Factor: 1		Analysis Time..: 13:56		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-002 **Matrix.....:** WATER
Date Sampled...: 08/16/11 09:15 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**8.0**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQG01AE**
		Dilution Factor: 1		Analysis Time..: 09:39		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AJ
		Dilution Factor: 1		Analysis Time..: 20:07		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AK
		Dilution Factor: 1		Analysis Time..: 20:07		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG01AH
		Dilution Factor: 1		Analysis Time..: 14:02		
Barium	**151**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01AL**
		Dilution Factor: 1		Analysis Time..: 20:07		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AM
		Dilution Factor: 1		Analysis Time..: 20:07		
Calcium	**41900**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01AN**
		Dilution Factor: 5		Analysis Time..: 10:39		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AP
		Dilution Factor: 1		Analysis Time..: 20:07		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AQ
		Dilution Factor: 1		Analysis Time..: 20:07		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AR
		Dilution Factor: 1		Analysis Time..: 20:07		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AT
		Dilution Factor: 1		Analysis Time..: 20:07		
Iron	**1260**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01AU**
		Dilution Factor: 1		Analysis Time..: 20:07		
Magnesium	**144000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01AV**
		Dilution Factor: 5		Analysis Time..: 10:39		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-002 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**223**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01AW**
		Dilution Factor: 1		Analysis Time..: 20:07		
Sodium	**105000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01AX**
		Dilution Factor: 5		Analysis Time..: 10:39		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01A0
		Dilution Factor: 1		Analysis Time..: 20:07		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01A1
		Dilution Factor: 1		Analysis Time..: 20:07		
Antimony	**4.0 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01A2**
		Dilution Factor: 1		Analysis Time..: 20:07		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG01A3
		Dilution Factor: 1		Analysis Time..: 14:02		
Strontium	**193**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG01A4**
		Dilution Factor: 5		Analysis Time..: 10:39		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AA
		Dilution Factor: 1		Analysis Time..: 20:07		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG01AC
		Dilution Factor: 1		Analysis Time..: 20:07		
Zinc	**264**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQG01AD**
		Dilution Factor: 1		Analysis Time..: 14:02		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606DR0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-003 **Matrix.....:** WATER
Date Sampled...: 08/15/11 09:55 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**12.4**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQG21AE**
		Dilution Factor: 1		Analysis Time..: 09:46		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AJ
		Dilution Factor: 1		Analysis Time..: 20:14		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AK
		Dilution Factor: 1		Analysis Time..: 20:14		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG21AH
		Dilution Factor: 1		Analysis Time..: 14:09		
Barium	**75.4**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG21AL**
		Dilution Factor: 1		Analysis Time..: 20:14		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AM
		Dilution Factor: 1		Analysis Time..: 20:14		
Calcium	**138000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG21AN**
		Dilution Factor: 5		Analysis Time..: 10:45		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AP
		Dilution Factor: 1		Analysis Time..: 20:14		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AQ
		Dilution Factor: 1		Analysis Time..: 20:14		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AR
		Dilution Factor: 1		Analysis Time..: 20:14		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AT
		Dilution Factor: 1		Analysis Time..: 20:14		
Iron	**584**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG21AU**
		Dilution Factor: 1		Analysis Time..: 20:14		
Magnesium	**84300**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG21AV**
		Dilution Factor: 5		Analysis Time..: 10:45		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606DR0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**163**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG21AW**
		Dilution Factor: 1		Analysis Time..: 20:14		
Sodium	**200000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG21AX**
		Dilution Factor: 5		Analysis Time..: 10:45		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21A0
		Dilution Factor: 1		Analysis Time..: 20:14		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21A1
		Dilution Factor: 1		Analysis Time..: 20:14		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21A2
		Dilution Factor: 1		Analysis Time..: 20:14		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG21A3
		Dilution Factor: 1		Analysis Time..: 14:09		
Strontium	**1830**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG21A4**
		Dilution Factor: 5		Analysis Time..: 10:45		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AA
		Dilution Factor: 1		Analysis Time..: 20:14		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG21AC
		Dilution Factor: 1		Analysis Time..: 20:14		
Zinc	**13.3 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQG21AD**
		Dilution Factor: 1		Analysis Time..: 14:09		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW15D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-004 **Matrix.....:** WATER
Date Sampled...: 08/16/11 10:35 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**1.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQG81AE**
		Dilution Factor: 1		Analysis Time..: 09:53		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AJ
		Dilution Factor: 1		Analysis Time..: 20:20		
Aluminum	**121 J**	**200**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG81AK**
		Dilution Factor: 1		Analysis Time..: 20:20		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG81AH
		Dilution Factor: 1		Analysis Time..: 14:15		
Barium	**23.0 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG81AL**
		Dilution Factor: 1		Analysis Time..: 20:20		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AM
		Dilution Factor: 1		Analysis Time..: 20:20		
Calcium	**6410**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG81AN**
		Dilution Factor: 5		Analysis Time..: 10:52		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AP
		Dilution Factor: 1		Analysis Time..: 20:20		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AQ
		Dilution Factor: 1		Analysis Time..: 20:20		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AR
		Dilution Factor: 1		Analysis Time..: 20:20		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AT
		Dilution Factor: 1		Analysis Time..: 20:20		
Iron	**36.3 J**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG81AU**
		Dilution Factor: 1		Analysis Time..: 20:20		
Magnesium	**1290**	**1000**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLQG81AV**
		Dilution Factor: 1		Analysis Time..: 12:58		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW15D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	ND	15.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AW
		Dilution Factor: 1		Analysis Time..: 20:20		
Sodium	**151000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG81AX**
		Dilution Factor: 5		Analysis Time..: 10:52		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81A0
		Dilution Factor: 1		Analysis Time..: 20:20		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81A1
		Dilution Factor: 1		Analysis Time..: 20:20		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81A2
		Dilution Factor: 1		Analysis Time..: 20:20		
Selenium	**16.2**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQG81A3**
		Dilution Factor: 1		Analysis Time..: 14:15		
Strontium	**61.8**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG81A4**
		Dilution Factor: 5		Analysis Time..: 10:52		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AA
		Dilution Factor: 1		Analysis Time..: 20:20		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG81AC
		Dilution Factor: 1		Analysis Time..: 20:20		
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG81AD
		Dilution Factor: 1		Analysis Time..: 14:15		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW17D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-005 Matrix.....: WATER
Date Sampled...: 08/16/11 13:00 Date Received..: 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	8.3	1.0	ug/L	SW846 6020A	08/17-08/19/11	MLQG91AE
		Dilution Factor: 1		Analysis Time..: 09:59		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AJ
		Dilution Factor: 1		Analysis Time..: 20:27		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AK
		Dilution Factor: 1		Analysis Time..: 20:27		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG91AH
		Dilution Factor: 1		Analysis Time..: 14:22		
Barium	80.8	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AL
		Dilution Factor: 1		Analysis Time..: 20:27		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AM
		Dilution Factor: 1		Analysis Time..: 20:27		
Calcium	69400	5000	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AN
		Dilution Factor: 5		Analysis Time..: 10:58		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AP
		Dilution Factor: 1		Analysis Time..: 20:27		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AQ
		Dilution Factor: 1		Analysis Time..: 20:27		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AR
		Dilution Factor: 1		Analysis Time..: 20:27		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AT
		Dilution Factor: 1		Analysis Time..: 20:27		
Iron	293	100	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AU
		Dilution Factor: 1		Analysis Time..: 20:27		
Magnesium	20500	1000	ug/L	SW846 6010C	08/17-08/23/11	MLQG91AV
		Dilution Factor: 1		Analysis Time..: 13:05		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW17D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-005 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**11.0 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG91AW**
		Dilution Factor: 1		Analysis Time..: 20:27		
Sodium	**314000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG91AX**
		Dilution Factor: 5		Analysis Time..: 10:58		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91A0
		Dilution Factor: 1		Analysis Time..: 20:27		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91A1
		Dilution Factor: 1		Analysis Time..: 20:27		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91A2
		Dilution Factor: 1		Analysis Time..: 20:27		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQG91A3
		Dilution Factor: 1		Analysis Time..: 14:22		
Strontium	**316**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQG91A4**
		Dilution Factor: 5		Analysis Time..: 10:58		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AA
		Dilution Factor: 1		Analysis Time..: 20:27		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQG91AC
		Dilution Factor: 1		Analysis Time..: 20:27		
Zinc	**17.8 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQG91AD**
		Dilution Factor: 1		Analysis Time..: 14:22		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-006 **Matrix.....:** WATER
Date Sampled...: 08/15/11 12:00 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**2.9**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQHA1AE**
		Dilution Factor: 1		Analysis Time..: 10:06		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AJ
		Dilution Factor: 1		Analysis Time..: 20:33		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AK
		Dilution Factor: 1		Analysis Time..: 20:33		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQHA1AH
		Dilution Factor: 1		Analysis Time..: 14:28		
Barium	**32.0 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHA1AL**
		Dilution Factor: 1		Analysis Time..: 20:33		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AM
		Dilution Factor: 1		Analysis Time..: 20:33		
Calcium	**483000**	**20000**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQHA1AN**
		Dilution Factor: 20		Analysis Time..: 10:24		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AP
		Dilution Factor: 1		Analysis Time..: 20:33		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AQ
		Dilution Factor: 1		Analysis Time..: 20:33		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AR
		Dilution Factor: 1		Analysis Time..: 20:33		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AT
		Dilution Factor: 1		Analysis Time..: 20:33		
Iron	ND	100	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AU
		Dilution Factor: 1		Analysis Time..: 20:33		
Magnesium	**238000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHA1AV**
		Dilution Factor: 5		Analysis Time..: 11:04		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H170425-006 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**6.2 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHA1AW**
		Dilution Factor: 1		Analysis Time..: 20:33		
Sodium	**733000**	**20000**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQHA1AX**
		Dilution Factor: 20		Analysis Time..: 10:24		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1A0
		Dilution Factor: 1		Analysis Time..: 20:33		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1A1
		Dilution Factor: 1		Analysis Time..: 20:33		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1A2
		Dilution Factor: 1		Analysis Time..: 20:33		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQHA1A3
		Dilution Factor: 1		Analysis Time..: 14:28		
Strontium	**8640**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQHA1A4**
		Dilution Factor: 20		Analysis Time..: 10:24		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AA
		Dilution Factor: 1		Analysis Time..: 20:33		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHA1AC
		Dilution Factor: 1		Analysis Time..: 20:33		
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLQHA1AD
		Dilution Factor: 1		Analysis Time..: 14:28		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001

GC/MS Volatiles

Lot-Sample #...: F1H170425-007 **Work Order #...:** MLQHH1AC **Matrix.....:** WATER
Date Sampled...: 08/16/11 08:45 **Date Received..:** 08/17/11
Prep Date.....: 08/19/11 **Analysis Date..:** 08/19/11
Prep Batch #...: 1231041 **Analysis Time..:** 15:06
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**0.51 J**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001

GC/MS Volatiles

Lot-Sample #...: F1H170425-007 Work Order #...: MLQHH1AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	109	(85 - 115)
1,2-Dichloroethane-d4	112	(70 - 120)
4-Bromofluorobenzene	104	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001

TOTAL Metals

Lot-Sample #...: F1H170425-007 **Matrix.....:** WATER
Date Sampled...: 08/16/11 08:45 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**7.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQHH1A5**
		Dilution Factor: 1		Analysis Time..: 10:13		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AF
		Dilution Factor: 1		Analysis Time..: 20:40		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AG
		Dilution Factor: 1		Analysis Time..: 20:40		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQHH1AE
		Dilution Factor: 1		Analysis Time..: 14:34		
Barium	**158**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHH1AH**
		Dilution Factor: 1		Analysis Time..: 20:40		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AJ
		Dilution Factor: 1		Analysis Time..: 20:40		
Calcium	**45300**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHH1AK**
		Dilution Factor: 5		Analysis Time..: 11:10		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AL
		Dilution Factor: 1		Analysis Time..: 20:40		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AM
		Dilution Factor: 1		Analysis Time..: 20:40		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AN
		Dilution Factor: 1		Analysis Time..: 20:40		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AP
		Dilution Factor: 1		Analysis Time..: 20:40		
Iron	**1570**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHH1AQ**
		Dilution Factor: 1		Analysis Time..: 20:40		
Magnesium	**135000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHH1AR**
		Dilution Factor: 5		Analysis Time..: 11:10		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001

TOTAL Metals

Lot-Sample #...: F1H170425-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**177**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHH1AT**
		Dilution Factor: 1		Analysis Time..: 20:40		
Sodium	**109000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHH1AU**
		Dilution Factor: 5		Analysis Time..: 11:10		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AV
		Dilution Factor: 1		Analysis Time..: 20:40		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AW
		Dilution Factor: 1		Analysis Time..: 20:40		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1AX
		Dilution Factor: 1		Analysis Time..: 20:40		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQHH1A0
		Dilution Factor: 1		Analysis Time..: 14:34		
Strontium	**240**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQHH1A1**
		Dilution Factor: 5		Analysis Time..: 11:10		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1A2
		Dilution Factor: 1		Analysis Time..: 20:40		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQHH1A3
		Dilution Factor: 1		Analysis Time..: 20:40		
Zinc	**269**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQHH1A4**
		Dilution Factor: 1		Analysis Time..: 14:34		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001

General Chemistry

Lot-Sample #...: F1H170425-007 Work Order #...: MLQHH Matrix.....: WATER
Date Sampled...: 08/16/11 08:45 Date Received..: 08/17/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	69.3	20.0	mg/L	MCAWW 300.0A	08/17/11	1229091
		Dilution Factor: 100		Analysis Time..: 06:59		
Fluoride	14.6	1.0	mg/L	MCAWW 300.0A	08/17/11	1229092
		Dilution Factor: 10		Analysis Time..: 06:46		
Nitrate	0.014 B	0.020	mg/L	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1		Analysis Time..: 06:19		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/17/11	1229094
		Dilution Factor: 10		Analysis Time..: 06:46		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1		Analysis Time..: 06:19		
Sulfate	35.2	2.5	mg/L	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 5		Analysis Time..: 06:32		
Total Alkalinity	688	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	848	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001

TOTAL Metals

Lot-Sample #...: F1H170425-008 **Matrix.....:** WATER
Date Sampled...: 08/16/11 09:15 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**8.0**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQJK1AG**
		Dilution Factor: 1		Analysis Time..: 10:19		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1AR
		Dilution Factor: 1		Analysis Time..: 20:46		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1AT
		Dilution Factor: 1		Analysis Time..: 20:46		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJK1AQ
		Dilution Factor: 1		Analysis Time..: 14:41		
Barium	**152**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJK1AU**
		Dilution Factor: 1		Analysis Time..: 20:46		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1AV
		Dilution Factor: 1		Analysis Time..: 20:46		
Calcium	**39300**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJK1AW**
		Dilution Factor: 5		Analysis Time..: 11:17		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1AX
		Dilution Factor: 1		Analysis Time..: 20:46		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1A0
		Dilution Factor: 1		Analysis Time..: 20:46		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1A1
		Dilution Factor: 1		Analysis Time..: 20:46		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1A2
		Dilution Factor: 1		Analysis Time..: 20:46		
Iron	**1610**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJK1A3**
		Dilution Factor: 1		Analysis Time..: 20:46		
Magnesium	**136000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJK1A4**
		Dilution Factor: 5		Analysis Time..: 11:17		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001

TOTAL Metals

Lot-Sample #...: F1H170425-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**224**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJK1A5**
		Dilution Factor: 1		Analysis Time..: 20:46		
Sodium	**98000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJK1A6**
		Dilution Factor: 5		Analysis Time..: 11:17		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1A7
		Dilution Factor: 1		Analysis Time..: 20:46		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1A8
		Dilution Factor: 1		Analysis Time..: 20:46		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1A9
		Dilution Factor: 1		Analysis Time..: 20:46		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJK1AA
		Dilution Factor: 1		Analysis Time..: 14:41		
Strontium	**182**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJK1AC**
		Dilution Factor: 5		Analysis Time..: 11:17		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1AD
		Dilution Factor: 1		Analysis Time..: 20:46		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJK1AE
		Dilution Factor: 1		Analysis Time..: 20:46		
Zinc	**273**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQJK1AF**
		Dilution Factor: 1		Analysis Time..: 14:41		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001

General Chemistry

Lot-Sample #...: F1H170425-008 Work Order #...: MLQJK Matrix.....: WATER
Date Sampled...: 08/16/11 09:15 Date Received..: 08/17/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	60.1	20.0	mg/L	MCAWW 300.0A	08/17/11	1229091
		Dilution Factor: 100		Analysis Time..: 10:07		
Fluoride	15.6	1.0	mg/L	MCAWW 300.0A	08/17/11	1229092
		Dilution Factor: 10		Analysis Time..: 09:54		
Nitrate	0.046	0.020	mg/L	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1		Analysis Time..: 09:27		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/17/11	1229094
		Dilution Factor: 10		Analysis Time..: 09:54		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1		Analysis Time..: 09:27		
Sulfate	33.1	2.5	mg/L	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 5		Analysis Time..: 09:40		
Total Alkalinity	698	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	833	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606DR0001

TOTAL Metals

Lot-Sample #...: F1H170425-009 **Matrix.....:** WATER
Date Sampled...: 08/15/11 09:55 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**12.8**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQJL1AT**
		Dilution Factor: 1		Analysis Time..: 10:26		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1A3
		Dilution Factor: 1		Analysis Time..: 20:53		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1A4
		Dilution Factor: 1		Analysis Time..: 20:53		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJL1A2
		Dilution Factor: 1		Analysis Time..: 15:00		
Barium	**74.4**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJL1A5**
		Dilution Factor: 1		Analysis Time..: 20:53		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1A6
		Dilution Factor: 1		Analysis Time..: 20:53		
Calcium	**134000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJL1A7**
		Dilution Factor: 5		Analysis Time..: 11:23		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1A8
		Dilution Factor: 1		Analysis Time..: 20:53		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AA
		Dilution Factor: 1		Analysis Time..: 20:53		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AC
		Dilution Factor: 1		Analysis Time..: 20:53		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AD
		Dilution Factor: 1		Analysis Time..: 20:53		
Iron	**727**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJL1AE**
		Dilution Factor: 1		Analysis Time..: 20:53		
Magnesium	**83000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJL1AF**
		Dilution Factor: 5		Analysis Time..: 11:23		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606DR0001

TOTAL Metals

Lot-Sample #...: F1H170425-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**170**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJL1AG**
		Dilution Factor: 1		Analysis Time..: 20:53		
Sodium	**197000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJL1AH**
		Dilution Factor: 5		Analysis Time..: 11:23		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AJ
		Dilution Factor: 1		Analysis Time..: 20:53		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AK
		Dilution Factor: 1		Analysis Time..: 20:53		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AL
		Dilution Factor: 1		Analysis Time..: 20:53		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJL1AM
		Dilution Factor: 1		Analysis Time..: 15:00		
Strontium	**1740**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJL1AN**
		Dilution Factor: 5		Analysis Time..: 11:23		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AP
		Dilution Factor: 1		Analysis Time..: 20:53		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJL1AQ
		Dilution Factor: 1		Analysis Time..: 20:53		
Zinc	**61.0**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQJL1AR**
		Dilution Factor: 1		Analysis Time..: 15:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606DR0001

General Chemistry

Lot-Sample #...: F1H170425-009 Work Order #...: MLQJL Matrix.....: WATER
Date Sampled...: 08/15/11 09:55 Date Received..: 08/17/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	326	20.0	mg/L	MCAWW 300.0A	08/17/11	1229091
		Dilution Factor: 100		Analysis Time..: 11:01		
Fluoride	6.6	0.50	mg/L	MCAWW 300.0A	08/17/11	1229092
		Dilution Factor: 5		Analysis Time..: 10:34		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1		Analysis Time..: 10:21		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/17/11	1229094
		Dilution Factor: 10		Analysis Time..: 10:47		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1		Analysis Time..: 10:21		
Sulfate	96.1	5.0	mg/L	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 10		Analysis Time..: 10:47		
Total Alkalinity	405	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1200	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW15D0001

TOTAL Metals

Lot-Sample #...: F1H170425-010 **Matrix.....:** WATER
Date Sampled...: 08/16/11 10:35 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**2.0**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQJP1A5**
		Dilution Factor: 1		Analysis Time..: 10:33		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1AE
		Dilution Factor: 1		Analysis Time..: 20:59		
Aluminum	**313**	**200**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AF**
		Dilution Factor: 1		Analysis Time..: 20:59		
Arsenic	**6.0 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQJP1AD**
		Dilution Factor: 1		Analysis Time..: 15:07		
Barium	**26.8 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AG**
		Dilution Factor: 1		Analysis Time..: 20:59		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1AH
		Dilution Factor: 1		Analysis Time..: 20:59		
Calcium	**7090**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AJ**
		Dilution Factor: 5		Analysis Time..: 11:29		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1AK
		Dilution Factor: 1		Analysis Time..: 20:59		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1AM
		Dilution Factor: 1		Analysis Time..: 20:59		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1AN
		Dilution Factor: 1		Analysis Time..: 20:59		
Copper	**7.4 J**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AP**
		Dilution Factor: 1		Analysis Time..: 20:59		
Iron	**283**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AQ**
		Dilution Factor: 1		Analysis Time..: 20:59		
Magnesium	**2000**	**1000**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLQJP1AR**
		Dilution Factor: 1		Analysis Time..: 13:11		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW15D0001

TOTAL Metals

Lot-Sample #...: F1H170425-010 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**3.8 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AT**
		Dilution Factor: 1		Analysis Time..: 20:59		
Sodium	**143000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AU**
		Dilution Factor: 5		Analysis Time..: 11:29		
Nickel	**14.7 J**	**40.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1AV**
		Dilution Factor: 1		Analysis Time..: 20:59		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1AW
		Dilution Factor: 1		Analysis Time..: 20:59		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1AX
		Dilution Factor: 1		Analysis Time..: 20:59		
Selenium	**11.2 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQJP1A0**
		Dilution Factor: 1		Analysis Time..: 15:07		
Strontium	**59.0**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJP1A1**
		Dilution Factor: 5		Analysis Time..: 11:29		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1A2
		Dilution Factor: 1		Analysis Time..: 20:59		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJP1A3
		Dilution Factor: 1		Analysis Time..: 20:59		
Zinc	**18.3 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQJP1A4**
		Dilution Factor: 1		Analysis Time..: 15:07		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW15D0001

General Chemistry

Lot-Sample #...: F1H170425-010 Work Order #...: MLQJP Matrix.....: WATER
Date Sampled...: 08/16/11 10:35 Date Received..: 08/17/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	79.9	20.0	mg/L	MCAWW 300.0A	08/18/11	1229091
		Dilution Factor: 100		Analysis Time..: 12:21		
Fluoride	13.6	1.0	mg/L	MCAWW 300.0A	08/18/11	1229092
		Dilution Factor: 10		Analysis Time..: 12:08		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1		Analysis Time..: 11:41		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/18/11	1229094
		Dilution Factor: 10		Analysis Time..: 12:08		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1		Analysis Time..: 11:41		
Sulfate	39.6	2.5	mg/L	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 5		Analysis Time..: 11:55		
Total Alkalinity	129	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	405	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW17D0001

TOTAL Metals

Lot-Sample #...: F1H170425-011 Matrix.....: WATER
Date Sampled...: 08/16/11 13:00 Date Received..: 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	8.5	1.0	ug/L	SW846 6020A	08/17-08/19/11	MLQJQ1A5
		Dilution Factor: 1		Analysis Time..: 10:53		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AE
		Dilution Factor: 1		Analysis Time..: 21:18		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AF
		Dilution Factor: 1		Analysis Time..: 21:18		
Arsenic	3.4 J	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJQ1AD
		Dilution Factor: 1		Analysis Time..: 15:13		
Barium	78.8	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AG
		Dilution Factor: 1		Analysis Time..: 21:18		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AH
		Dilution Factor: 1		Analysis Time..: 21:18		
Calcium	66400	5000	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AJ
		Dilution Factor: 5		Analysis Time..: 11:48		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AK
		Dilution Factor: 1		Analysis Time..: 21:18		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AM
		Dilution Factor: 1		Analysis Time..: 21:18		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AN
		Dilution Factor: 1		Analysis Time..: 21:18		
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AP
		Dilution Factor: 1		Analysis Time..: 21:18		
Iron	1050	100	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AQ
		Dilution Factor: 1		Analysis Time..: 21:18		
Magnesium	20300	1000	ug/L	SW846 6010C	08/17-08/23/11	MLQJQ1AR
		Dilution Factor: 1		Analysis Time..: 13:17		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW17D0001

TOTAL Metals

Lot-Sample #...: F1H170425-011 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**11.2 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJQ1AT**
		Dilution Factor: 1		Analysis Time..: 21:18		
Sodium	**301000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJQ1AU**
		Dilution Factor: 5		Analysis Time..: 11:48		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AV
		Dilution Factor: 1		Analysis Time..: 21:18		
Lead	**1.6 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJQ1AW**
		Dilution Factor: 1		Analysis Time..: 21:18		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1AX
		Dilution Factor: 1		Analysis Time..: 21:18		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJQ1A0
		Dilution Factor: 1		Analysis Time..: 15:13		
Strontium	**311**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJQ1A1**
		Dilution Factor: 5		Analysis Time..: 11:48		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1A2
		Dilution Factor: 1		Analysis Time..: 21:18		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJQ1A3
		Dilution Factor: 1		Analysis Time..: 21:18		
Zinc	**17.2 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/17-08/24/11**	**MLQJQ1A4**
		Dilution Factor: 1		Analysis Time..: 15:13		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW17D0001

General Chemistry

Lot-Sample #...: F1H170425-011 Work Order #...: MLQJQ Matrix.....: WATER
Date Sampled...: 08/16/11 13:00 Date Received..: 08/17/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	251	20.0	mg/L	MCAWW 300.0A	08/18/11	1229091
		Dilution Factor: 100		Analysis Time..: 01:15		
Fluoride	0.19	0.10	mg/L	MCAWW 300.0A	08/18/11	1229092
		Dilution Factor: 1		Analysis Time..: 12:35		
Nitrate	0.10	0.020	mg/L	MCAWW 300.0A	08/18/11	1229093
		Dilution Factor: 1		Analysis Time..: 12:35		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/18/11	1229094
		Dilution Factor: 10		Analysis Time..: 01:02		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/18/11	1229095
		Dilution Factor: 1		Analysis Time..: 12:35		
Sulfate	69.1	2.5	mg/L	MCAWW 300.0A	08/18/11	1229096
		Dilution Factor: 5		Analysis Time..: 12:48		
Total Alkalinity	410	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	975	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001

TOTAL Metals

Lot-Sample #...: F1H170425-012 **Matrix.....:** WATER
Date Sampled...: 08/15/11 12:00 **Date Received..:** 08/17/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1229103						
Uranium	**1.7**	**1.0**	**ug/L**	**SW846 6020A**	**08/17-08/19/11**	**MLQJR1A3**
		Dilution Factor: 1		Analysis Time..: 10:59		
Prep Batch #...: 1229104						
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AD
		Dilution Factor: 1		Analysis Time..: 21:25		
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AE
		Dilution Factor: 1		Analysis Time..: 21:25		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJR1AC
		Dilution Factor: 1		Analysis Time..: 15:20		
Barium	**39.4 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJR1AF**
		Dilution Factor: 1		Analysis Time..: 21:25		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AG
		Dilution Factor: 1		Analysis Time..: 21:25		
Calcium	**455000**	**20000**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLQJR1AH**
		Dilution Factor: 20		Analysis Time..: 14:15		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AJ
		Dilution Factor: 1		Analysis Time..: 21:25		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AK
		Dilution Factor: 1		Analysis Time..: 21:25		
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AL
		Dilution Factor: 1		Analysis Time..: 21:25		
Copper	**7.6 J**	**25.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJR1AM**
		Dilution Factor: 1		Analysis Time..: 21:25		
Iron	**81.0 J**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJR1AN**
		Dilution Factor: 1		Analysis Time..: 21:25		
Magnesium	**225000**	**5000**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJR1AP**
		Dilution Factor: 5		Analysis Time..: 11:55		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001

TOTAL Metals

Lot-Sample #...: F1H170425-012 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**11.7 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/17-08/22/11**	**MLQJR1AQ**
		Dilution Factor: 1		Analysis Time..: 21:25		
Sodium	**673000**	**20000**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLQJR1AR**
		Dilution Factor: 20		Analysis Time..: 14:15		
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AT
		Dilution Factor: 1		Analysis Time..: 21:25		
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AU
		Dilution Factor: 1		Analysis Time..: 21:25		
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1AV
		Dilution Factor: 1		Analysis Time..: 21:25		
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJR1AW
		Dilution Factor: 1		Analysis Time..: 15:20		
Strontium	**7690**	**100**	**ug/L**	**SW846 6010C**	**08/17-08/23/11**	**MLQJR1AX**
		Dilution Factor: 20		Analysis Time..: 14:15		
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1A0
		Dilution Factor: 1		Analysis Time..: 21:25		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQJR1A1
		Dilution Factor: 1		Analysis Time..: 21:25		
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLQJR1A2
		Dilution Factor: 1		Analysis Time..: 15:20		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #2

GC/MS Volatiles

Lot-Sample #...: F1H170425-013 Work Order #...: MLQJ31AA Matrix.....: WATER
Date Sampled...: 08/16/11 Date Received..: 08/17/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 11:05
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	**3.1**	**1.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #2

GC/MS Volatiles

Lot-Sample #...: F1H170425-013 Work Order #...: MLQJ31AA Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H170425 **Work Order #...:** MLTXM1AA **Matrix.....:** WATER
MB Lot-Sample #: F1H190000-041

Prep Date.....: 08/19/11 **Analysis Time..:** 05:48
Analysis Date..: 08/19/11 **Prep Batch #...:** 1231041
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	106	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H170425 Work Order #...: MLTXM1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	103	(70 - 120)		
4-Bromofluorobenzene	103	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H170425 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H170000-103 **Prep Batch #...:** 1229103						
Uranium	ND	1.0	ug/L	SW846 6020A	08/17-08/19/11	MLQNA1AA
		Dilution Factor: 1				
		Analysis Time..: 08:13				
MB Lot-Sample #: F1H170000-104 **Prep Batch #...:** 1229104						
Aluminum	ND	200	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AD
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Antimony	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AU
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/17-08/24/11	MLQNE1AA
		Dilution Factor: 1				
		Analysis Time..: 12:39				
Barium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AE
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AF
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AH
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Calcium	ND	1000	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AG
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Chromium	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AK
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AJ
		Dilution Factor: 1				
		Analysis Time..: 18:44				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H170425 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AL
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Iron	ND	100	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AM
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Lead	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AT
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Magnesium	ND	1000	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AN
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Manganese	ND	15.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AP
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Nickel	ND	40.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AR
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Selenium	ND	15.0	ug/L	SW846 6010C	08/17-08/24/11	MLQNE1AV
		Dilution Factor: 1				
		Analysis Time..: 12:39				
Silver	ND	10.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AC
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Sodium	ND	1000	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AQ
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Strontium	ND	5.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AW
		Dilution Factor: 1				
		Analysis Time..: 09:17				
Thallium	ND	20.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1AX
		Dilution Factor: 1				
		Analysis Time..: 18:44				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/17-08/22/11	MLQNE1A0
		Dilution Factor: 1				
		Analysis Time..: 18:44				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H170425 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/17-08/24/11	MLQNE1A1

Dilution Factor: 1
Analysis Time..: 12:39

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H170425 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLVHL1AA		MB Lot-Sample #:	F1H170000-091	
	ND	0.20	mg/L	MCAWW 300.0A	08/17/11	1229091
		Dilution Factor: 1				
		Analysis Time..: 06:06				
Fluoride		Work Order #: MLVHM1AA		MB Lot-Sample #:	F1H170000-092	
	ND	0.10	mg/L	MCAWW 300.0A	08/17/11	1229092
		Dilution Factor: 1				
		Analysis Time..: 06:06				
Nitrate		Work Order #: MLVHN1AA		MB Lot-Sample #:	F1H170000-093	
	ND	0.020	mg/L	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1				
		Analysis Time..: 06:06				
Nitrite		Work Order #: MLVHP1AA		MB Lot-Sample #:	F1H170000-094	
	ND	0.020	mg/L	MCAWW 300.0A	08/17/11	1229094
		Dilution Factor: 1				
		Analysis Time..: 06:06				
Phosphate as P, Ortho		Work Order #: MLVHQ1AA		MB Lot-Sample #:	F1H170000-095	
	ND	0.50	mg/L	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1				
		Analysis Time..: 06:06				
Sulfate		Work Order #: MLVHR1AA		MB Lot-Sample #:	F1H170000-096	
	ND	0.50	mg/L	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 1				
		Analysis Time..: 06:06				
Total Alkalinity		Work Order #: MLX1P1AA		MB Lot-Sample #:	F1H230000-125	
	ND	5.0	mg/L	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: MLQ6P1AA		MB Lot-Sample #:	F1H170000-114	
	ND	10.0	mg/L	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H170425 Work Order #...: MLTXM1AC Matrix.....: WATER
LCS Lot-Sample#: F1H190000-041
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 04:55
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Styrene	110	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	101	(65 - 130)	SW846 8260B
Tetrachloroethene	101	(45 - 150)	SW846 8260B
1,2-Dichlorobenzene	100	(70 - 120)	SW846 8260B
cis-1,3-Dichloropropene	106	(70 - 130)	SW846 8260B
Dibromochloromethane	103	(60 - 135)	SW846 8260B
Vinyl chloride	83	(50 - 145)	SW846 8260B
Bromomethane	101	(30 - 145)	SW846 8260B
Chloroethane	90	(60 - 135)	SW846 8260B
Acetone	93	(40 - 140)	SW846 8260B
1,1-Dichloroethene	99	(70 - 130)	SW846 8260B
Methylene chloride	92	(55 - 140)	SW846 8260B
Carbon disulfide	90	(35 - 160)	SW846 8260B
1,1-Dichloroethane	94	(70 - 135)	SW846 8260B
2-Butanone	101	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	97	(85 - 115)	SW846 8260B
Chloroform	94	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	100	(65 - 130)	SW846 8260B
Carbon tetrachloride	100	(65 - 140)	SW846 8260B
1,2-Dichloroethane	96	(70 - 130)	SW846 8260B
Benzene	95	(80 - 120)	SW846 8260B
Trichloroethene	91	(70 - 125)	SW846 8260B
1,2-Dichloropropane	95	(75 - 125)	SW846 8260B
Bromodichloromethane	100	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	96	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	106	(55 - 140)	SW846 8260B
Toluene	104	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	103	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	99	(75 - 125)	SW846 8260B
2-Hexanone	96	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	108	(60 - 135)	SW846 8260B
Chlorobenzene	95	(80 - 120)	SW846 8260B
Bromoform	109	(70 - 130)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H170425 **Work Order #...:** MLTXM1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H190000-041

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Ethylbenzene	**102**	**(75 - 125)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H170425 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H170000-103 **Prep Batch #...:** 1229103					
Uranium	109	(80 - 120)	SW846 6020A	08/17-08/19/11	MLQNA1AC
		Dilution Factor: 1		Analysis Time..: 08:19	
LCS Lot-Sample#: F1H170000-104 **Prep Batch #...:** 1229104					
Arsenic	105	(80 - 120)	SW846 6010C	08/17-08/24/11	MLQNE1A2
		Dilution Factor: 1		Analysis Time..: 12:45	
Silver	93	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A3
		Dilution Factor: 1		Analysis Time..: 18:50	
Aluminum	106	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A4
		Dilution Factor: 1		Analysis Time..: 18:50	
Barium	104	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A5
		Dilution Factor: 1		Analysis Time..: 18:50	
Beryllium	112	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A6
		Dilution Factor: 1		Analysis Time..: 18:50	
Calcium	110	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A7
		Dilution Factor: 1		Analysis Time..: 09:23	
Cadmium	106	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A8
		Dilution Factor: 1		Analysis Time..: 18:50	
Cobalt	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1A9
		Dilution Factor: 1		Analysis Time..: 18:50	
Chromium	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CA
		Dilution Factor: 1		Analysis Time..: 18:50	
Copper	100	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CC
		Dilution Factor: 1		Analysis Time..: 18:50	
Iron	106	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CD
		Dilution Factor: 1		Analysis Time..: 18:50	
Magnesium	101	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CE
		Dilution Factor: 1		Analysis Time..: 09:23	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H170425 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	105	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CF
		Dilution Factor: 1	Analysis Time..: 18:50		
Sodium	104	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CG
		Dilution Factor: 1	Analysis Time..: 09:23		
Nickel	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CH
		Dilution Factor: 1	Analysis Time..: 18:50		
Lead	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CJ
		Dilution Factor: 1	Analysis Time..: 18:50		
Antimony	103	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CK
		Dilution Factor: 1	Analysis Time..: 18:50		
Selenium	105	(80 - 120)	SW846 6010C	08/17-08/24/11	MLQNE1CL
		Dilution Factor: 1	Analysis Time..: 12:45		
Strontium	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CM
		Dilution Factor: 1	Analysis Time..: 09:23		
Thallium	100	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CN
		Dilution Factor: 1	Analysis Time..: 18:50		
Vanadium	102	(80 - 120)	SW846 6010C	08/17-08/22/11	MLQNE1CP
		Dilution Factor: 1	Analysis Time..: 18:50		
Zinc	112	(80 - 120)	SW846 6010C	08/17-08/24/11	MLQNE1CQ
		Dilution Factor: 1	Analysis Time..: 12:45		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H170425 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLVHL1AC LCS Lot-Sample#: F1H170000-091			
	93	(90 - 110)	MCAWW 300.0A	08/17/11	1229091
		Dilution Factor: 1	Analysis Time..: 05:52		
Fluoride		Work Order #: MLVHM1AC LCS Lot-Sample#: F1H170000-092			
	96	(90 - 110)	MCAWW 300.0A	08/17/11	1229092
		Dilution Factor: 1	Analysis Time..: 05:52		
Nitrate		Work Order #: MLVHN1AC LCS Lot-Sample#: F1H170000-093			
	95	(90 - 110)	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1	Analysis Time..: 05:52		
Nitrite		Work Order #: MLVHP1AC LCS Lot-Sample#: F1H170000-094			
	99	(90 - 110)	MCAWW 300.0A	08/17/11	1229094
		Dilution Factor: 1	Analysis Time..: 05:52		
Phosphate as P, Ortho		Work Order #: MLVHQ1AC LCS Lot-Sample#: F1H170000-095			
	99	(90 - 110)	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1	Analysis Time..: 05:52		
Sulfate		Work Order #: MLVHR1AC LCS Lot-Sample#: F1H170000-096			
	95	(90 - 110)	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 1	Analysis Time..: 05:52		
Total Alkalinity		Work Order #: MLX1P1AC LCS Lot-Sample#: F1H230000-125			
	94	(90 - 110)	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: MLX1P1AD LCS Lot-Sample#: F1H230000-125			
	94	(90 - 110)	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: MLQ6P1AC LCS Lot-Sample#: F1H170000-114			
	98	(90 - 113)	MCAWW 160.1	08/17-08/22/11	1229114
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H170425 Work Order #...: MLLN71CF-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-007 MLLN71CG-MSD
Date Sampled...: 08/11/11 10:15 Date Received..: 08/12/11
Prep Date.....: 08/19/11 Analysis Date..: 08/19/11
Prep Batch #...: 1231041 Analysis Time..: 09:20
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	101	(70 - 130)			SW846 8260B
	103	(70 - 130)	2.4	(0-20)	SW846 8260B
Dibromochloromethane	104	(60 - 135)			SW846 8260B
	102	(60 - 135)	1.6	(0-20)	SW846 8260B
Vinyl chloride	93	(50 - 145)			SW846 8260B
	96	(50 - 145)	2.4	(0-20)	SW846 8260B
Bromomethane	107	(30 - 145)			SW846 8260B
	102	(30 - 145)	5.0	(0-20)	SW846 8260B
Chloroethane	100	(60 - 135)			SW846 8260B
	97	(60 - 135)	3.2	(0-20)	SW846 8260B
Acetone	111	(40 - 140)			SW846 8260B
	95	(40 - 140)	15	(0-20)	SW846 8260B
1,1-Dichloroethene	107	(70 - 130)			SW846 8260B
	96	(70 - 130)	11	(0-20)	SW846 8260B
Methylene chloride	133	(55 - 140)			SW846 8260B
	135	(55 - 140)	1.7	(0-20)	SW846 8260B
Carbon disulfide	97	(35 - 160)			SW846 8260B
	86	(35 - 160)	12	(0-20)	SW846 8260B
1,1-Dichloroethane	100	(70 - 135)			SW846 8260B
	95	(70 - 135)	4.6	(0-20)	SW846 8260B
2-Butanone	91	(30 - 150)			SW846 8260B
	97	(30 - 150)	6.4	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	100	(85 - 115)			SW846 8260B
	98	(85 - 115)	2.4	(0-20)	SW846 8260B
Chloroform	99	(65 - 135)			SW846 8260B
	94	(65 - 135)	5.1	(0-20)	SW846 8260B
1,1,1-Trichloroethane	108	(65 - 130)			SW846 8260B
	102	(65 - 130)	5.6	(0-20)	SW846 8260B
Carbon tetrachloride	108	(65 - 140)			SW846 8260B
	102	(65 - 140)	5.4	(0-20)	SW846 8260B
1,2-Dichloroethane	99	(70 - 130)			SW846 8260B
	100	(70 - 130)	0.19	(0-20)	SW846 8260B
Benzene	100	(80 - 120)			SW846 8260B
	98	(80 - 120)	2.2	(0-20)	SW846 8260B
Trichloroethene	93	(70 - 125)			SW846 8260B
	94	(70 - 125)	0.16	(0-20)	SW846 8260B
1,2-Dichloropropane	99	(75 - 125)			SW846 8260B
	98	(75 - 125)	0.89	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H170425 Work Order #...: MLLN71CF-MS Matrix.....: WATER
MS Lot-Sample #: F1H120447-007 MLLN71CG-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	103	(75 - 120)			SW846 8260B
	102	(75 - 120)	0.87	(0-20)	SW846 8260B
1,1,2-Trichloroethane	102	(75 - 125)			SW846 8260B
	97	(75 - 125)	5.2	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	107	(55 - 140)			SW846 8260B
	107	(55 - 140)	0.56	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	102	(75 - 120)	3.8	(0-20)	SW846 8260B
1,3-Dichlorobenzene	107	(75 - 125)			SW846 8260B
	105	(75 - 125)	2.2	(0-20)	SW846 8260B
1,4-Dichlorobenzene	100	(75 - 125)			SW846 8260B
	101	(75 - 125)	1.0	(0-20)	SW846 8260B
2-Hexanone	96	(55 - 130)			SW846 8260B
	91	(55 - 130)	5.8	(0-20)	SW846 8260B
4-Methyl-2-pentanone	96	(60 - 135)			SW846 8260B
	98	(60 - 135)	2.8	(0-20)	SW846 8260B
Chlorobenzene	100	(80 - 120)			SW846 8260B
	98	(80 - 120)	1.7	(0-20)	SW846 8260B
Bromoform	107	(70 - 130)			SW846 8260B
	111	(70 - 130)	3.0	(0-20)	SW846 8260B
Ethylbenzene	105	(75 - 125)			SW846 8260B
	104	(75 - 125)	1.2	(0-20)	SW846 8260B
Styrene	114	(65 - 135)			SW846 8260B
	110	(65 - 135)	3.6	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	97	(65 - 130)			SW846 8260B
	96	(65 - 130)	1.5	(0-20)	SW846 8260B
Tetrachloroethene	104	(45 - 150)			SW846 8260B
	101	(45 - 150)	2.3	(0-20)	SW846 8260B
1,2-Dichlorobenzene	104	(70 - 120)			SW846 8260B
	103	(70 - 120)	1.2	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
	102	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
	102	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)
	100	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H170425 **Matrix.....:** WATER
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H160430-001 **Prep Batch #...:** 1229103							
Uranium	112	(80 - 120)			SW846 6020A	08/17-08/19/11	MLPER1A6
	112	(80 - 120)	0.11	(0-20)	SW846 6020A	08/17-08/19/11	MLPER1A7
		Dilution Factor: 1					
		Analysis Time..: 08:39					
MS Lot-Sample #: F1H160430-001 **Prep Batch #...:** 1229104							
Aluminum	108	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CD
	104	(80 - 120)	3.7	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CE
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Antimony	104	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1DA
	101	(80 - 120)	3.1	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1DC
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Arsenic	108	(80 - 120)			SW846 6010C	08/17-08/24/11	MLPER1A8
	105	(80 - 120)	2.7	(0-20)	SW846 6010C	08/17-08/24/11	MLPER1A9
		Dilution Factor: 1					
		Analysis Time..: 12:58					
Barium	104	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CF
	101	(80 - 120)	3.0	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CG
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Beryllium	108	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CH
	105	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CJ
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Cadmium	98	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CM
	95	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CN
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Calcium	180 N	(80 - 120)			SW846 6010C	08/17-08/23/11	MLPER1CK
	188 N	(80 - 120)	0.13	(0-20)	SW846 6010C	08/17-08/23/11	MLPER1CL
		Dilution Factor: 20					
		Analysis Time..: 13:30					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H170425 **Matrix.....:** WATER
Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	97	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CR
	94	(80 - 120)	2.4	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CT
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Cobalt	95	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CP
	92	(80 - 120)	2.5	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CQ
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Copper	101	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CU
	98	(80 - 120)	3.6	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CV
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Iron	100	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1CW
	97	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1CX
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Lead	93	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C8
	92	(80 - 120)	2.1	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C9
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Magnesium	122 N	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C0
	105	(80 - 120)	1.2	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C1
		Dilution Factor: 5					
		Analysis Time..: 09:35					
Manganese	100	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C2
	98	(80 - 120)	2.6	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C3
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Nickel	94	(80 - 120)			SW846 6010C	08/17-08/22/11	MLPER1C6
	92	(80 - 120)	2.3	(0-20)	SW846 6010C	08/17-08/22/11	MLPER1C7
		Dilution Factor: 1					
		Analysis Time..: 19:03					
Selenium	109	(80 - 120)			SW846 6010C	08/17-08/24/11	MLPER1DD
	106	(80 - 120)	2.9	(0-20)	SW846 6010C	08/17-08/24/11	MLPER1DE
		Dilution Factor: 1					
		Analysis Time..: 12:58					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H170425 **Matrix.....:** WATER
Date Sampled...: 08/16/11 08:45 **Date Received..:** 08/17/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLQHH1CF		MS Lot-Sample #: F1H170425-007	
	96	(90 - 110)	MCAWW 300.0A	08/17/11	1229091
		Dilution Factor: 100	Analysis Time..: 06:59		
Fluoride		Work Order #...: MLQHH1CH		MS Lot-Sample #: F1H170425-007	
	106	(90 - 110)	MCAWW 300.0A	08/17/11	1229092
		Dilution Factor: 10	Analysis Time..: 06:46		
Nitrate		Work Order #...: MLQHH1CK		MS Lot-Sample #: F1H170425-007	
	114 N	(90 - 110)	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1	Analysis Time..: 06:19		
Nitrite		Work Order #...: MLQHH1CM		MS Lot-Sample #: F1H170425-007	
	53 N	(90 - 110)	MCAWW 300.0A	08/17/11	1229094
		Dilution Factor: 10	Analysis Time..: 06:46		
Phosphate as P, Ortho		Work Order #...: MLQHH1CP		MS Lot-Sample #: F1H170425-007	
	122 N	(90 - 110)	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1	Analysis Time..: 06:19		
Sulfate		Work Order #...: MLQHH1CR		MS Lot-Sample #: F1H170425-007	
	90	(90 - 110)	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 5	Analysis Time..: 06:32		
Total Alkalinity		Work Order #...: MLPE41CG		MS Lot-Sample #: F1H160430-003	
	110	(80 - 120)	MCAWW 310.1	08/23/11	1235125
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H170425 **Work Order #...:** MLQHH-SMP **Matrix.....:** WATER
MLQHH-DUP
Date Sampled...: 08/16/11 08:45 **Date Received..:** 08/17/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H170425-007		
	69.3	73.1	mg/L	5.4	(0-20)	MCAWW 300.0A	08/17/11	1229091
		Dilution Factor: 100				Analysis Time..: 06:59		
Fluoride						SD Lot-Sample #: F1H170425-007		
	14.6	14.7	mg/L	0.67	(0-20)	MCAWW 300.0A	08/17/11	1229092
		Dilution Factor: 10				Analysis Time..: 06:46		
Nitrate						SD Lot-Sample #: F1H170425-007		
	0.014 B	0.014 B	mg/L	3.8	(0-20)	MCAWW 300.0A	08/17/11	1229093
		Dilution Factor: 1				Analysis Time..: 06:19		
Nitrite						SD Lot-Sample #: F1H170425-007		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/17/11	1229094
		Dilution Factor: 10				Analysis Time..: 06:46		
Phosphate as P, Ortho						SD Lot-Sample #: F1H170425-007		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/17/11	1229095
		Dilution Factor: 1				Analysis Time..: 06:19		
Sulfate						SD Lot-Sample #: F1H170425-007		
	35.2	36.6	mg/L	3.9	(0-20)	MCAWW 300.0A	08/17/11	1229096
		Dilution Factor: 5				Analysis Time..: 06:32		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H170425 **Work Order #...:** MLLN1-SMP **Matrix.....:** WATER
MLLN1-DUP
Date Sampled...: 08/11/11 09:15 **Date Received..:** 08/12/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H120447-006		
	645	665	mg/L	3.1	(0-0.0)	MCAWW 160.1	08/17-08/22/11	1229114
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H170425 **Work Order #...:** MLPE4-SMP MLPE4-DUP **Matrix.....:** WATER

Date Sampled...: 08/15/11 08:40 **Date Received..:** 08/16/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #:	F1H160430-003	
	234	236	mg/L	0.68	(0-20)	MCAWW 310.1	08/23/11	1235125

Dilution Factor: 1 Analysis Time..: 00:00

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H170425-001
Work Order: MLQGL
Matrix: WATER

Date Collected: 08/16/11 0845
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1234168		Yld % 38
Uranium 234	2.88		0.52	0.10	0.1	08/22/11	08/23/11
Uranium 235/236	0.068		0.079	0.100	0.062	08/22/11	08/23/11
Uranium 238	2.37		0.46	0.10	0.05	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H170425-002
Work Order: MLQG0
Matrix: WATER

Date Collected: 08/16/11 0915
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238036		Yld % 46
Uranium 234	2.49		0.82	0.10	0.39	08/26/11	08/28/11
Uranium 235/236	-0.038	U	0.054	0.100	0.40	08/26/11	08/28/11
Uranium 238	2.09		0.74	0.10	0.32	08/26/11	08/28/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001 DISSOLVED DUP

Radiochemistry

Lab Sample ID: F1H170425-002X
Work Order: MLQG0
Matrix: WATER

Date Collected: 08/16/11 0915
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238036		Yld % 70
Uranium 234	2.35		0.64	0.10	0.25	08/26/11	08/28/11
Uranium 235/236	0.049	U	0.097	0.100	0.13	08/26/11	08/28/11
Uranium 238	1.96		0.58	0.10	0.23	08/26/11	08/28/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606DR0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H170425-003
Work Order: MLQG2
Matrix: WATER

Date Collected: 08/15/11 0955
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1234168		Yld % 37
Uranium 234	4.20		0.67	0.10	0.09	08/22/11	08/23/11
Uranium 235/236	0.17		0.13	0.10	0.06	08/22/11	08/23/11
Uranium 238	4.54		0.71	0.10	0.15	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW15D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H170425-004
Work Order: MLQG8
Matrix: WATER

Date Collected: 08/16/11 1035
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1234168		Yld % 72
Uranium 234	0.48		0.14	0.10	0.07	08/22/11	08/23/11
Uranium 235/236	0.003	U	0.026	0.100	0.070	08/22/11	08/23/11
Uranium 238	0.58		0.16	0.10	0.06	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW17D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H170425-005
Work Order: MLQG9
Matrix: WATER

Date Collected: 08/16/11 1300
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1234168		Yld % 77
Uranium 234	2.39		0.35	0.10	0.05	08/22/11	08/23/11
Uranium 235/236	0.161		0.084	0.100	0.029	08/22/11	08/23/11
Uranium 238	2.30		0.34	0.10	0.05	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H170425-006
Work Order: MLQHA
Matrix: WATER

Date Collected: 08/15/11 1200
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1238036	Yld % 80
Uranium 234	1.29		0.44	0.10	0.23	08/26/11	08/28/11
Uranium 235/236	0.11	U	0.15	0.10	0.23	08/26/11	08/28/11
Uranium 238	0.55		0.30	0.10	0.26	08/26/11	08/28/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606D0001

Radiochemistry

Lab Sample ID: F1H170425-007
Work Order: MLQHH
Matrix: WATER

Date Collected: 08/16/11 0845
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 37
Uranium 234	2.60		0.48	0.10	0.13	08/22/11	08/23/11
Uranium 235/236	0.19		0.13	0.10	0.12	08/22/11	08/23/11
Uranium 238	2.91		0.52	0.10	0.12	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW14D0001

Radiochemistry

Lab Sample ID: F1H170425-008
Work Order: MLQJK
Matrix: WATER

Date Collected: 08/16/11 0915
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 42
Uranium 234	2.49		0.46	0.10	0.13	08/22/11	08/23/11
Uranium 235/236	0.17		0.12	0.10	0.06	08/22/11	08/23/11
Uranium 238	2.08		0.41	0.10	0.05	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW606DR0001

Radiochemistry

Lab Sample ID: F1H170425-009
Work Order: MLQJL
Matrix: WATER

Date Collected: 08/15/11 0955
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 50
Uranium 234	3.37		0.51	0.10	0.07	08/22/11	08/23/11
Uranium 235/236	0.23		0.13	0.10	0.08	08/22/11	08/23/11
Uranium 238	3.73		0.55	0.10	0.09	08/22/11	08/23/11

NOTE (S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW15D0001

Radiochemistry

Lab Sample ID: F1H170425-010
Work Order: MLQJP
Matrix: WATER

Date Collected: 08/16/11 1035
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1234168	Yld % 69
Uranium 234	0.37		0.13	0.10	0.08	08/22/11	08/23/11
Uranium 235/236	0.022	U	0.036	0.100	0.056	08/22/11	08/23/11
Uranium 238	0.61		0.17	0.10	0.08	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID:. A03MW17D0001

Radiochemistry

Lab Sample ID: F1H170425-011
Work Order: MLQJQ
Matrix: WATER

Date Collected: 08/16/11 1300
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1238036	Yld % 86
Uranium 234	2.27		0.56	0.10	0.21	08/26/11	08/28/11
Uranium 235/236	0.18		0.17	0.10	0.17	08/26/11	08/28/11
Uranium 238	1.82		0.50	0.10	0.19	08/26/11	08/28/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04CMW711DD0001

Radiochemistry

Lab Sample ID: F1H170425-012
Work Order: MLQJR
Matrix: WATER

Date Collected: 08/15/11 1200
Date Received: 08/17/11 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1234168		Yld % 31
Uranium 234	0.80		0.28	0.10	0.15	08/22/11	08/23/11
Uranium 235/236	-0.007	U	0.014	0.100	0.13	08/22/11	08/23/11
Uranium 238	0.71		0.26	0.10	0.10	08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H170425
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	**Batch # 1238036**		**Yld % 95**		**F1H260000-036B**
Uranium 234	-0.002	U	0.017	0.100	0.051		08/26/11	08/28/11
Uranium 235/236	0.007	U	0.019	0.100	0.043		08/26/11	08/28/11
Uranium 238	-0.0038	U	0.0053	0.100	0.040		08/26/11	08/28/11
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	**Batch # 1234168**		**Yld % 93**		**F1H220000-168B**
Uranium 234	0.019	U	0.027	0.100	0.041		08/22/11	08/23/11
Uranium 235/236	-0.0024	U	0.0048	0.100	0.043		08/22/11	08/23/11
Uranium 238	-0.0019	U	0.0038	0.100	0.035		08/22/11	08/23/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H170425
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/L		A-01-R MOD			F1H260000-036C
Uranium 234	3.26	3.18	0.42	0.05	83	97	(76 - 136)
Uranium 238	3.39	3.72	0.47	0.04	83	110	(76 - 134)
	Batch #:	1238036		Analysis Date:	08/28/11		

NOTE (S) F1H170425

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F1H170425
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ+/-)	% Yld	% Rec	QC Control Limits	Lab Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	A-01-R MOD			F1H220000-168C		
Uranium 234		3.26	3.09	0.40	91	95	(76 - 136)		
	Spk 2	3.27	3.11	0.41	86	95	(76 - 136)	0.8	%RPD
Uranium 238		3.39	3.39	0.43	91	100	(76 - 134)		
	Spk 2	3.39	3.23	0.42	86	95	(76 - 134)	5	%RPD
		Batch #:	1234168		Analysis Date:		08/23/11		

NOTE(S):

Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1H170425
Matrix: WATER

Date Sampled: 08/16/11
Date Received: 08/17/11

Parameter	SAMPLE Result		Total Uncert. (2σ+/-)	% Yld	DUPLICATE Result		Total Uncert. (2 σ+/-)	% Yld	QC Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**		**A-01-R MOD**				**F1H170425-002**	
Uranium 234	2.49		0.82	46	2.35		0.64	70	6	%RPD
Uranium 235/236	-0.038	U	0.054	46	0.049	U	0.097	70	1600	%RPD
Uranium 238	2.09		0.74	46	1.96		0.58	70	7	%RPD
	Batch #:		1238036 (Sample)		1238036 (Duplicate)					

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

U Result is less than the sample detection limit.

F1H170425

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R286,7

Date Received: 2011-08-17

Analytical Due Date: 2011-08-25

Report Due Date: 2011-08-29

Project Manager: LMF

Quote #: 89251 SDG:

Project: Y40415 Guterl Steel

PO#: 697886 Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 12

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A03MW606D0001 DISSOLVED			2011-08-16 / 846	MLQGL	WATER

SAMPLE COMMENTS:

SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A03MW14D0001 DISSOLVED			2011-08-16 / 915	MLQG0	WATER

SAMPLE COMMENTS:

MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R286,7

Project Manager: LMF
Quote #: 89251 SDG:
Project: Y40415 Guterl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-17
Analytical Due Date: 2011-08-25
Report Due Date: 2011-08-29
Report Type: B Standard Report
#SMPS in LOT: 12 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium listead of 200.8

PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Isc U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
3	A03MW606DR0001 DISSOLVED			2011-08-15 / 955	MLQG2	WATER

SAMPLE COMMENTS:

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R286,7

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-17

Project: Y40415
Guterl Steel
Analytical Due Date: 2011-08-25

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-08-29

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 12
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
4	A03MW15D0001 DISSOLVED			2011-08-16 / 1035	MLQG8	WATER

SAMPLE COMMENTS:

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

F1H170425

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R286,7

Date Received: 2011-08-17

Analytical Due Date: 2011-08-25

Report Due Date: 2011-08-29

Project Manager: LMF Quote #: 89251 SDG:

Project: Y40415 Guterl Steel

PO#: 697886 Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 12

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	A03MW17D0001 DISSOLVED			2011-08-16 / 1300	MLQG9	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	A04CMW711DD0001 DISSOLVED			2011-08-15 / 1200	MLQHA	WATER

SAMPLE COMMENTS:

AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R286,7

Project Manager: LMF
Quote #: 89251 SDG:
Project: Y40415 Guterl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 12

Date Received: 2011-08-17
Analytical Due Date: 2011-08-25
Report Due Date: 2011-08-29
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER
7	A03MW606D0001			2011-08-16 / 845	MLQHH WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R286,7,2-63

Date Received: 2011-08-17

Analytical Due Date: 2011-08-25

Report Due Date: 2011-08-29

Report Type: B Standard Report

EDD Code: 00

Project Manager: LMF Quote #: 89251 SDG:

Project: Y40415 Quterl Steel

PO#: 697886 Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc #SMPS in LOT: 12

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
8	A03MW14D0001			2011-08-16 / 915	MLQJK	WATER

SAMPLE COMMENTS:

SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	A03MW606DR0001			2011-08-15 / 955	MLQJL	WATER

SAMPLE COMMENTS:

ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R286,7,2-63

Date Received: 2011-08-17

Analytical Due Date: 2011-08-25

Report Due Date: 2011-08-29

Report Type: B Standard Report

EDD Code: 00

Project Manager: LMF Quote #: 89251 SDG:

Project: Y40415 Guterl Steel

PO#: 697886 Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc #SMPS in LOT: 12

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
10	A03MW15D0001			2011-08-16 / 1035	MLQJP	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H170425

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R286,7,2-63

Project Manager: LMF
Project: Y40415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 12

Date Received: 2011-08-17
Analytical Due Date: 2011-08-25
Report Due Date: 2011-08-29
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
11	A03MW17D0001			2011-08-16 / 1300	MLQJQ	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R286,7,2-63
Date Received: 2011-08-17
Analytical Due Date: 2011-08-25
Report Due Date: 2011-08-29
Report Type: B Standard Report
EDD Code: 00

Project Manager: LMF
Project: Y40415
PO#: 697886
Client: 522706 Shaw Environmental & Infrastructure Inc

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
#SMPS in LOT: 12

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
12	A04CMW711DD0001			2011-08-15 / 1200	MLQJR	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H170425

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R286,7

Project Manager: LMF
Quote #: 89251
SDG:
Project: Y40415
Guterl Steel
PO#: 697886
Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 12

Date Received: 2011-08-17
Analytical Due Date: 2011-08-25
Report Due Date: 2011-08-29
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium latood of 200.8

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
13	TRIP BLANK #2			2011-08-16 / 0	MLQJ3	WATER

SAMPLE COMMENTS:

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	

estAmerica St. Louis
'15 Rider Trail North
th City, MO 63045
ne 314.298.8566 fax 314.298.8757

WW 117

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/16/2011	COC No: 010
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	**Analysis Turnaround Time**			Job No. 140416.09020100
cinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below ____			SDG No.
3) 782-4807 FAX	☒ 2 weeks			
ject Name: Former Guteri Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
) #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (a-spec)	Isotopic Uranium (a-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
3MW606D0001	8/16/2011	0845	Grab	GW	10	X		X	X	X	X	X	X	X	3x40				
3MW14D0001	8/16/2011	0915	Grab	GW	7	X		X	X	X	X	X	X						
3MW606DR0001	8/15/2011	0955	Grab	GW	7	X		X	X	X	X	X	X						
3MW15D0001	8/16/2011	1035	Grab	GW	7	X		X	X	X	X	X	X						
3MW17D0001	8/16/2011	1300	Grab	GW	7	X		X	X	X	X	X	X						
4CMW711DD0001	8/15/2011	1200	Grab	GW	6	X		X	X	X									
p Blank #2	8/16/2011	--	--	TB	1									X	40ml				

servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

sible Hazard Identification

☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

cial Instructions/QC Requirements & Comments:

	Company	Date/Time	Received by:	Company	Date/Time
inquished by:	Company: Shaw E & I. Inc.	Date/Time: 8/16/11 1615	Received by:	Company: BFLO	Date/Time: 08-16-11 16:15
inquished by:	Company: BFLO	Date/Time: 08-16-11 16.40	Received by:	Company:	Date/Time:
inquished by:	Company: Buffalo	Date/Time: 8/16/11 17.00	Received by:	Company: TASTL	Date/Time: 8-17-11 0915

TestAmerica St. Louis

8 of 9 08/17/2011

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): FHH170425 TestAmerica St. Louis

CUR Form #: 1 1 3

CONDITION UPON RECEIPT FORM

Client: Shaw

Quote No: 89251

COC/RFA No: 010

Initiated By: EN Date: 8.17.11 Time: 0915

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*				Sample Temperature (s):**			
1.	4855 0258 4330	6.		1.	↑	6.	
2.	4329	7.		2.	ambient	7.	
3.	4318	8.		3.	3	8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	Y (N) N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

second sample - labels have ms "D"
4th
5th

perf logged per chain.

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/18/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

FHH170425

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. Y40415

Guterl Steel

Lot #: F1H190431

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

August 31, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H190431

This report contains the analytical results for the 14 samples received under chain of custody by TestAmerica in St. Louis on August 19, 2011. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1237141
The CCV recovery was outside the upper QC limit (greater than 20% D) for Vinyl acetate, Carbon Tetrachloride, 1,1,2,2-Tetrachloroethane, sec-Butylbenzene, Nonanal and 1,2-Dibromo-3-chlopropane indicating a potential high bias for those analytes in the samples associated with this CCV. These analytes were not detected above the reporting limit or were not target analytes in the associated samples.

The CCV recoveries are outside the lower QC limit (greater than 20% D) for Naphthalene indicating a potential low bias for those analytes in the samples associated with this CCV. This analyte is not a target analytes in the associated samples.

The LCS recovery for 1,1,2,2-Tetrachloroethane is outside the upper QC limit, indicating a potential positive bias for that analytes. This analyte was not observed above the reporting limit in the associated samples; therefore the sample data was not adversely affected by this excursion.

The MS ans MSD recoveries for 1,1,2,2-Tetrachloroethane are outside the upper QC limit, indicating a potential positive bias for that analytes. These analytes were not observed above the reporting limit in the associated samples; therefore the sample data was not adversely affected by this excursion.

The MSD recovery for 1,1,1-Trichloroethane, 1,2-Dichloroethene and 1,2-Dichloroethene (total) are outside the established QC limits. The RPD is within method acceptance criteria indicating matrix interference. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:
F1H190431 (7): A04DMW710DD0001
F1H190431 (8): A04DFB710DD0001
F1H190431 (9): A04DMW712DD0001
F1H190431 (10): A04BMW707DD0001
F1H190431 (14): TRIP BLANK #3

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1234136
The MS and MSD recoveries for calcium and sodium are outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H190431 (1): A04DMW710DD0001 DISSOLVED
F1H190431 (2): A04DFB710DD0001 DISSOLVED
F1H190431 (3): A04DMW712DD0001 DISSOLVED
F1H190431 (4): A04AMW610D0001 DISSOLVED
F1H190431 (5): A04AMW200001 DISSOLVED
F1H190431 (6): A04AM2100001 DISSOLVED
F1H190431 (7): A04DMW710DD0001
F1H190431 (8): A04DFB710DD0001
F1H190431 (9): A04DMW712DD0001
F1H190431 (11): A04AMW610D0001
F1H190431 (12): A04AMW200001
F1H190431 (13): A04AMW210001

Chloride (MCAWW 300.0A)

Batch: 1231100
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H190431 (7): A04DMW710DD0001
F1H190431 (9): A04DMW712DD0001
F1H190431 (11): A04AMW610D0001
F1H190431 (12): A04AMW200001
F1H190431 (13): A04AMW210001

Sulfate (MCAWW 300.0A)

Batch: 1231105
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H190431 (7): A04DMW710DD0001
F1H190431 (9): A04DMW712DD0001
F1H190431 (11): A04AMW610D0001
F1H190431 (12): A04AMW200001
F1H190431 (13): A04AMW210001

Nitrate (MCAWW 300.0A)

Batch: 1231102
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H190431 (12): A04AMW200001

Nitrite (MCAWW 300.0A)

Batch: 1231103
The following samples were reported ND at dilution for Nitrite, due to high concentrations of Chloride, which masked the retention time for Nitrite in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H190431 (9): A04DMW712DD0001
F1H190431 (11): A04AMW610D0001
F1H190431 (12): A04AMW200001
F1H190431 (13): A04AMW210001

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H190431 (7): A04DMW710DD0001
F1H190431 (8): A04DFB710DD0001
F1H190431 (9): A04DMW712DD0001
F1H190431 (11): A04AMW610D0001
F1H190431 (12): A04AMW200001
F1H190431 (13): A04AMW210001

Orthophosphate (MCAWW 033.0A)

Batch: 1231104
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries Ortho Phos in batch are attributed to matrix interference.

Affected Samples:
F1H190431 (7): A04DMW710DD0001
F1H190431 (8): A04DFB710DD0001
F1H190431 (9): A04DMW712DD0001
F1H190431 (11): A04AMW610D0001
F1H190431 (12): A04AMW200001
F1H190431 (13): A04AMW210001

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)
There was insufficient sample provided to perform the sample duplicate, an LCS duplicate was used instead.

Affected Samples:
F1H190431 (1): A04DMW710DD0001 DISSOLVED
F1H190431 (2): A04DFB710DD0001 DISSOLVED
F1H190431 (3): A04DMW712DD0001 DISSOLVED
F1H190431 (4): A04AMW610D0001 DISSOLVED
F1H190431 (5): A04AMW200001 DISSOLVED
F1H190431 (6): A04AM2100001 DISSOLVED
F1H190431 (7): A04DMW710DD0001
F1H190431 (8): A04DFB710DD0001
F1H190431 (9): A04DMW712DD0001
F1H190431 (11): A04AMW610D0001
F1H190431 (12): A04AMW200001
F1H190431 (13): A04AMW210001

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H190431

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H190431

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLT39	001	A04DMW710DD0001 DISSOLVED	08/18/11	08:25
MLT4E	002	A04DFB710DD0001 DISSOLVED	08/18/11	08:50
MLT4H	003	A04DMW712DD0001 DISSOLVED	08/18/11	09:35
MLT4K	004	A04AMW610D0001 DISSOLVED	08/18/11	11:10
MLT4V	005	A04AMW200001 DISSOLVED	08/18/11	12:05
MLT46	006	A04AM2100001 DISSOLVED	08/18/11	12:45
MLT47	007	A04DMW710DD0001	08/18/11	08:25
MLT5A	008	A04DFB710DD0001	08/18/11	08:50
MLT5D	009	A04DMW712DD0001	08/18/11	09:35
MLT5F	010	A04BMW707DD0001	08/18/11	10:30
MLT5H	011	A04AMW610D0001	08/18/11	11:10
MLT54	012	A04AMW200001	08/18/11	12:05
MLT6E	013	A04AMW210001	08/18/11	12:45
MLT6H	014	TRIP BLANK #3	08/18/11	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-001 **Matrix.....:** WATER
Date Sampled...: 08/18/11 08:25 **Date Received..:** 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	**67.0**	**1.0**	**ug/L**	**SW846 6020A**	**08/22-08/24/11**	**MLT391A3**
		Dilution Factor: 1		Analysis Time..: 03:50		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AD
		Dilution Factor: 1		Analysis Time..: 20:21		
Aluminum	ND	200	ug/L	SW846 6010C	08/22-08/27/11	MLT391AE
		Dilution Factor: 1		Analysis Time..: 20:21		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AC
		Dilution Factor: 1		Analysis Time..: 20:21		
Barium	**51.0**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT391AF**
		Dilution Factor: 1		Analysis Time..: 20:21		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AG
		Dilution Factor: 1		Analysis Time..: 20:21		
Calcium	**203000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT391AH**
		Dilution Factor: 10		Analysis Time..: 19:30		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AJ
		Dilution Factor: 1		Analysis Time..: 20:21		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AK
		Dilution Factor: 1		Analysis Time..: 20:21		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AL
		Dilution Factor: 1		Analysis Time..: 20:21		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AM
		Dilution Factor: 1		Analysis Time..: 20:21		
Iron	**167**	**100**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT391AN**
		Dilution Factor: 1		Analysis Time..: 17:36		
Magnesium	**34100**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT391AP**
		Dilution Factor: 1		Analysis Time..: 17:36		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**26.0**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT391AQ**
		Dilution Factor: 1		Analysis Time..: 20:21		
Sodium	**214000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT391AR**
		Dilution Factor: 10		Analysis Time..: 19:30		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AT
		Dilution Factor: 1		Analysis Time..: 20:21		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AU
		Dilution Factor: 1		Analysis Time..: 20:21		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AV
		Dilution Factor: 1		Analysis Time..: 20:21		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391AW
		Dilution Factor: 1		Analysis Time..: 20:21		
Strontium	**1130**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT391AX**
		Dilution Factor: 10		Analysis Time..: 19:30		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT391A0
		Dilution Factor: 1		Analysis Time..: 14:48		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT391A1
		Dilution Factor: 1		Analysis Time..: 20:21		
Zinc	**12.4 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT391A2**
		Dilution Factor: 1		Analysis Time..: 20:21		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-002 **Matrix.....:** WATER
Date Sampled...: 08/18/11 08:50 **Date Received..:** 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	**0.25 J**	**1.0**	**ug/L**	**SW846 6020A**	**08/22-08/24/11**	**MLT4E1AE**
		Dilution Factor: 1		Analysis Time..: 04:16		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AJ
		Dilution Factor: 1		Analysis Time..: 20:46		
Aluminum	ND	200	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AK
		Dilution Factor: 1		Analysis Time..: 20:46		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AH
		Dilution Factor: 1		Analysis Time..: 20:46		
Barium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AL
		Dilution Factor: 1		Analysis Time..: 20:46		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AM
		Dilution Factor: 1		Analysis Time..: 20:46		
Calcium	**256 J**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4E1AN**
		Dilution Factor: 1		Analysis Time..: 18:02		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AP
		Dilution Factor: 1		Analysis Time..: 20:46		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AQ
		Dilution Factor: 1		Analysis Time..: 20:46		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AR
		Dilution Factor: 1		Analysis Time..: 20:46		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AT
		Dilution Factor: 1		Analysis Time..: 20:46		
Iron	ND	100	ug/L	SW846 6010C	08/22-08/26/11	MLT4E1AU
		Dilution Factor: 1		Analysis Time..: 18:02		
Magnesium	ND	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT4E1AV
		Dilution Factor: 1		Analysis Time..: 18:02		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-002 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AW
		Dilution Factor: 1		Analysis Time..: 20:46		
Sodium	ND	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT4E1AX
		Dilution Factor: 1		Analysis Time..: 18:02		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1A0
		Dilution Factor: 1		Analysis Time..: 20:46		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1A1
		Dilution Factor: 1		Analysis Time..: 20:46		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1A2
		Dilution Factor: 1		Analysis Time..: 20:46		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1A3
		Dilution Factor: 1		Analysis Time..: 20:46		
Strontium	**0.75 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4E1A4**
		Dilution Factor: 1		Analysis Time..: 18:02		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT4E1AA
		Dilution Factor: 1		Analysis Time..: 15:27		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4E1AC
		Dilution Factor: 1		Analysis Time..: 20:46		
Zinc	**10.5 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4E1AD**
		Dilution Factor: 1		Analysis Time..: 20:46		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-003 **Matrix.....:** WATER
Date Sampled...: 08/18/11 09:35 **Date Received..:** 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	**38.8**	**1.0**	**ug/L**	**SW846 6020A**	**08/22-08/24/11**	**MLT4H1AE**
		Dilution Factor: 1		Analysis Time..: 04:30		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AJ
		Dilution Factor: 1		Analysis Time..: 20:59		
Aluminum	ND	200	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AK
		Dilution Factor: 1		Analysis Time..: 20:59		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AH
		Dilution Factor: 1		Analysis Time..: 20:59		
Barium	**60.8**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4H1AL**
		Dilution Factor: 1		Analysis Time..: 20:59		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AM
		Dilution Factor: 1		Analysis Time..: 20:59		
Calcium	**166000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4H1AN**
		Dilution Factor: 10		Analysis Time..: 20:20		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AP
		Dilution Factor: 1		Analysis Time..: 20:59		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AQ
		Dilution Factor: 1		Analysis Time..: 20:59		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AR
		Dilution Factor: 1		Analysis Time..: 20:59		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AT
		Dilution Factor: 1		Analysis Time..: 20:59		
Iron	**43.8 J**	**100**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4H1AU**
		Dilution Factor: 1		Analysis Time..: 18:14		
Magnesium	**47800**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4H1AV**
		Dilution Factor: 1		Analysis Time..: 18:14		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**9.7 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4H1AW**
		Dilution Factor: 1		Analysis Time..: 20:59		
Sodium	**276000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4H1AX**
		Dilution Factor: 10		Analysis Time..: 20:20		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1A0
		Dilution Factor: 1		Analysis Time..: 20:59		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1A1
		Dilution Factor: 1		Analysis Time..: 20:59		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1A2
		Dilution Factor: 1		Analysis Time..: 20:59		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1A3
		Dilution Factor: 1		Analysis Time..: 20:59		
Strontium	**878**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4H1A4**
		Dilution Factor: 10		Analysis Time..: 20:20		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT4H1AA
		Dilution Factor: 1		Analysis Time..: 15:33		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4H1AC
		Dilution Factor: 1		Analysis Time..: 20:59		
Zinc	**79.3**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4H1AD**
		Dilution Factor: 1		Analysis Time..: 20:59		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW610D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-004 Matrix.....: WATER
Date Sampled...: 08/18/11 11:10 Date Received..: 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	**10.6**	**1.0**	**ug/L**	**SW846 6020A**	**08/22-08/24/11**	**MLT4K1AE**
		Dilution Factor: 1		Analysis Time..: 04:36		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AJ
		Dilution Factor: 1		Analysis Time..: 21:06		
Aluminum	ND	200	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AK
		Dilution Factor: 1		Analysis Time..: 21:06		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AH
		Dilution Factor: 1		Analysis Time..: 21:06		
Barium	**19.1 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4K1AL**
		Dilution Factor: 1		Analysis Time..: 21:06		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AM
		Dilution Factor: 1		Analysis Time..: 21:06		
Calcium	**84600**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4K1AN**
		Dilution Factor: 10		Analysis Time..: 20:26		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AP
		Dilution Factor: 1		Analysis Time..: 21:06		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AQ
		Dilution Factor: 1		Analysis Time..: 21:06		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AR
		Dilution Factor: 1		Analysis Time..: 21:06		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AT
		Dilution Factor: 1		Analysis Time..: 21:06		
Iron	**74.7 J**	**100**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4K1AU**
		Dilution Factor: 1		Analysis Time..: 18:20		
Magnesium	**32000**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4K1AV**
		Dilution Factor: 1		Analysis Time..: 18:20		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW610D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**76.3**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4K1AW**
		Dilution Factor: 1		Analysis Time..: 21:06		
Sodium	**119000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4K1AX**
		Dilution Factor: 10		Analysis Time..: 20:26		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1A0
		Dilution Factor: 1		Analysis Time..: 21:06		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1A1
		Dilution Factor: 1		Analysis Time..: 21:06		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1A2
		Dilution Factor: 1		Analysis Time..: 21:06		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1A3
		Dilution Factor: 1		Analysis Time..: 21:06		
Strontium	**488**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4K1A4**
		Dilution Factor: 10		Analysis Time..: 20:26		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT4K1AA
		Dilution Factor: 1		Analysis Time..: 15:46		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4K1AC
		Dilution Factor: 1		Analysis Time..: 21:06		
Zinc	**14.8 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4K1AD**
		Dilution Factor: 1		Analysis Time..: 21:06		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW200001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-005 Matrix.....: WATER
Date Sampled...: 08/18/11 12:05 Date Received..: 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	13.3	1.0	ug/L	SW846 6020A	08/22-08/24/11	MLT4V1AE
		Dilution Factor: 1		Analysis Time..: 04:56		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AJ
		Dilution Factor: 1		Analysis Time..: 21:25		
Aluminum	ND	200	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AK
		Dilution Factor: 1		Analysis Time..: 21:25		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AH
		Dilution Factor: 1		Analysis Time..: 21:25		
Barium	57.4	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AL
		Dilution Factor: 1		Analysis Time..: 21:25		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AM
		Dilution Factor: 1		Analysis Time..: 21:25		
Calcium	91900	10000	ug/L	SW846 6010C	08/22-08/26/11	MLT4V1AN
		Dilution Factor: 10		Analysis Time..: 20:33		
Cadmium	1.1 J	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AP
		Dilution Factor: 1		Analysis Time..: 21:25		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AQ
		Dilution Factor: 1		Analysis Time..: 21:25		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AR
		Dilution Factor: 1		Analysis Time..: 21:25		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AT
		Dilution Factor: 1		Analysis Time..: 21:25		
Iron	28.7 J	100	ug/L	SW846 6010C	08/22-08/26/11	MLT4V1AU
		Dilution Factor: 1		Analysis Time..: 18:39		
Magnesium	20300	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT4V1AV
		Dilution Factor: 1		Analysis Time..: 18:39		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW200001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AW
		Dilution Factor: 1		Analysis Time..: 21:25		
Sodium	**46200**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4V1AX**
		Dilution Factor: 1		Analysis Time..: 18:39		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1A0
		Dilution Factor: 1		Analysis Time..: 21:25		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1A1
		Dilution Factor: 1		Analysis Time..: 21:25		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1A2
		Dilution Factor: 1		Analysis Time..: 21:25		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1A3
		Dilution Factor: 1		Analysis Time..: 21:25		
Strontium	**206**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT4V1A4**
		Dilution Factor: 10		Analysis Time..: 20:33		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT4V1AA
		Dilution Factor: 1		Analysis Time..: 15:53		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT4V1AC
		Dilution Factor: 1		Analysis Time..: 21:25		
Zinc	**251**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT4V1AD**
		Dilution Factor: 1		Analysis Time..: 21:25		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AM2100001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-006 **Matrix.....:** WATER
Date Sampled...: 08/18/11 12:45 **Date Received..:** 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	**3.2**	**1.0**	**ug/L**	**SW846 6020A**	**08/22-08/24/11**	**MLT461AE**
		Dilution Factor: 1		Analysis Time..: 05:03		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AJ
		Dilution Factor: 1		Analysis Time..: 21:31		
Aluminum	ND	200	ug/L	SW846 6010C	08/22-08/27/11	MLT461AK
		Dilution Factor: 1		Analysis Time..: 21:31		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AH
		Dilution Factor: 1		Analysis Time..: 21:31		
Barium	**72.0**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT461AL**
		Dilution Factor: 1		Analysis Time..: 21:31		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AM
		Dilution Factor: 1		Analysis Time..: 21:31		
Calcium	**110000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT461AN**
		Dilution Factor: 10		Analysis Time..: 20:39		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AP
		Dilution Factor: 1		Analysis Time..: 21:31		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AQ
		Dilution Factor: 1		Analysis Time..: 21:31		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AR
		Dilution Factor: 1		Analysis Time..: 21:31		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AT
		Dilution Factor: 1		Analysis Time..: 21:31		
Iron	ND	100	ug/L	SW846 6010C	08/22-08/26/11	MLT461AU
		Dilution Factor: 1		Analysis Time..: 18:46		
Magnesium	**36500**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT461AV**
		Dilution Factor: 1		Analysis Time..: 18:46		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AM2100001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H190431-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**5.1 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT461AW**
		Dilution Factor: 1		Analysis Time..: 21:31		
Sodium	**223000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT461AX**
		Dilution Factor: 10		Analysis Time..: 20:39		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461A0
		Dilution Factor: 1		Analysis Time..: 21:31		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461A1
		Dilution Factor: 1		Analysis Time..: 21:31		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461A2
		Dilution Factor: 1		Analysis Time..: 21:31		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461A3
		Dilution Factor: 1		Analysis Time..: 21:31		
Strontium	**608**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT461A4**
		Dilution Factor: 10		Analysis Time..: 20:39		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT461AA
		Dilution Factor: 1		Analysis Time..: 15:59		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AC
		Dilution Factor: 1		Analysis Time..: 21:31		
Zinc	ND	20.0	ug/L	SW846 6010C	08/22-08/27/11	MLT461AD
		Dilution Factor: 1		Analysis Time..: 21:31		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-007 Work Order #...: MLT471AC Matrix.....: WATER
Date Sampled...: 08/18/11 08:25 Date Received..: 08/19/11
Prep Date.....: 08/24/11 Analysis Date..: 08/25/11
Prep Batch #...: 1237141 Analysis Time..: 01:00
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**19**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**10**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**29**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**13**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**8.4**	**1.0**	**ug/L**
Vinyl chloride	**0.86 J**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-007 Work Order #...: MLT471AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	114	(85 - 120)
Dibromofluoromethane	86	(85 - 115)
1,2-Dichloroethane-d4	85	(70 - 120)
4-Bromofluorobenzene	95	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001

TOTAL Metals

Lot-Sample #...: F1H190431-007 Matrix.....: WATER
Date Sampled...: 08/18/11 08:25 Date Received..: 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	60.8	1.0	ug/L	SW846 6020A	08/22-08/24/11	MLT471A5
		Dilution Factor: 1		Analysis Time..: 05:10		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AF
		Dilution Factor: 1		Analysis Time..: 21:38		
Aluminum	346	200	ug/L	SW846 6010C	08/22-08/27/11	MLT471AG
		Dilution Factor: 1		Analysis Time..: 21:38		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AE
		Dilution Factor: 1		Analysis Time..: 21:38		
Barium	51.9	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AH
		Dilution Factor: 1		Analysis Time..: 21:38		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AJ
		Dilution Factor: 1		Analysis Time..: 21:38		
Calcium	195000	10000	ug/L	SW846 6010C	08/22-08/26/11	MLT471AK
		Dilution Factor: 10		Analysis Time..: 20:45		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AL
		Dilution Factor: 1		Analysis Time..: 21:38		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AM
		Dilution Factor: 1		Analysis Time..: 21:38		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AN
		Dilution Factor: 1		Analysis Time..: 21:38		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AP
		Dilution Factor: 1		Analysis Time..: 21:38		
Iron	300	100	ug/L	SW846 6010C	08/22-08/26/11	MLT471AQ
		Dilution Factor: 1		Analysis Time..: 18:52		
Magnesium	34000	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT471AR
		Dilution Factor: 1		Analysis Time..: 18:52		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001

TOTAL Metals

Lot-Sample #...: F1H190431-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**29.4**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT471AT**
		Dilution Factor: 1		Analysis Time..: 21:38		
Sodium	**198000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT471AU**
		Dilution Factor: 10		Analysis Time..: 20:45		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AV
		Dilution Factor: 1		Analysis Time..: 21:38		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AW
		Dilution Factor: 1		Analysis Time..: 21:38		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471AX
		Dilution Factor: 1		Analysis Time..: 21:38		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471A0
		Dilution Factor: 1		Analysis Time..: 21:38		
Strontium	**1120**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT471A1**
		Dilution Factor: 10		Analysis Time..: 20:45		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT471A2
		Dilution Factor: 1		Analysis Time..: 16:05		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT471A3
		Dilution Factor: 1		Analysis Time..: 21:38		
Zinc	**11.3 J**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT471A4**
		Dilution Factor: 1		Analysis Time..: 21:38		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001

General Chemistry

Lot-Sample #...: F1H190431-007 Work Order #...: MLT47 Matrix.....: WATER
Date Sampled...: 08/18/11 08:25 Date Received..: 08/19/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	352	20.0	mg/L	MCAWW 300.0A	08/19/11	1231100
		Dilution Factor: 100		Analysis Time..: 10:52		
Fluoride	0.97	0.10	mg/L	MCAWW 300.0A	08/19/11	1231101
		Dilution Factor: 1		Analysis Time..: 09:35		
Nitrate	0.028	0.020	mg/L	MCAWW 300.0A	08/19/11	1231102
		Dilution Factor: 1		Analysis Time..: 09:35		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/19/11	1231103
		Dilution Factor: 10		Analysis Time..: 10:37		
Phosphate as P, Ortho	0.28 B,J	0.50	mg/L	MCAWW 300.0A	08/19/11	1231104
		Dilution Factor: 1		Analysis Time..: 09:35		
Sulfate	263	50.0	mg/L	MCAWW 300.0A	08/19/11	1231105
		Dilution Factor: 100		Analysis Time..: 10:52		
Total Alkalinity	270	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1340	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-008 **Work Order #...:** MLT5A1AN **Matrix.....:** WATER
Date Sampled...: 08/18/11 08:50 **Date Received..:** 08/19/11
Prep Date.....: 08/24/11 **Analysis Date..:** 08/25/11
Prep Batch #...: 1237141 **Analysis Time..:** 02:11
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**7.7**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	**3.4 J**	**5.0**	**ug/L**
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.14 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-008 **Work Order #...:** MLT5A1AN **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	114	(85 - 120)
Dibromofluoromethane	90	(85 - 115)
1,2-Dichloroethane-d4	91	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001

TOTAL Metals

Lot-Sample #...: F1H190431-008 **Matrix.....:** WATER
Date Sampled...: 08/18/11 08:50 **Date Received..:** 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	ND	1.0	ug/L	SW846 6020A	08/22-08/24/11	MLT5A1AG
		Dilution Factor: 1		Analysis Time..: 05:16		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1AR
		Dilution Factor: 1		Analysis Time..: 21:44		
Aluminum	**87.8 J**	**200**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5A1AT**
		Dilution Factor: 1		Analysis Time..: 21:44		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1AQ
		Dilution Factor: 1		Analysis Time..: 21:44		
Barium	**25.0 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5A1AU**
		Dilution Factor: 1		Analysis Time..: 21:44		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1AV
		Dilution Factor: 1		Analysis Time..: 21:44		
Calcium	**1670**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5A1AW**
		Dilution Factor: 1		Analysis Time..: 18:58		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1AX
		Dilution Factor: 1		Analysis Time..: 21:44		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1A0
		Dilution Factor: 1		Analysis Time..: 21:44		
Chromium	**4.5 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5A1A1**
		Dilution Factor: 1		Analysis Time..: 21:44		
Copper	**791**	**25.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5A1A2**
		Dilution Factor: 1		Analysis Time..: 21:44		
Iron	**150**	**100**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5A1A3**
		Dilution Factor: 1		Analysis Time..: 18:58		
Magnesium	ND	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT5A1A4
		Dilution Factor: 1		Analysis Time..: 18:58		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001

TOTAL Metals

Lot-Sample #...: F1H190431-008 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**45.2**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5A1A5**
		Dilution Factor: 1		Analysis Time..: 21:44		
Sodium	ND	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT5A1A6
		Dilution Factor: 1		Analysis Time..: 18:58		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1A7
		Dilution Factor: 1		Analysis Time..: 21:44		
Lead	**25.6**	**10.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5A1A8**
		Dilution Factor: 1		Analysis Time..: 21:44		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1A9
		Dilution Factor: 1		Analysis Time..: 21:44		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1AA
		Dilution Factor: 1		Analysis Time..: 21:44		
Strontium	**13.4**	**5.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5A1AC**
		Dilution Factor: 1		Analysis Time..: 18:58		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT5A1AD
		Dilution Factor: 1		Analysis Time..: 16:25		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5A1AE
		Dilution Factor: 1		Analysis Time..: 21:44		
Zinc	**683**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5A1AF**
		Dilution Factor: 1		Analysis Time..: 21:44		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001

General Chemistry

Lot-Sample #...: F1H190431-008 Work Order #...: MLT5A Matrix.....: WATER
Date Sampled...: 08/18/11 08:50 Date Received..: 08/19/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	0.41	0.20	mg/L	MCAWW 300.0A	08/20/11	1231100
		Dilution Factor: 1		Analysis Time..: 02:43		
Fluoride	ND	0.10	mg/L	MCAWW 300.0A	08/20/11	1231101
		Dilution Factor: 1		Analysis Time..: 02:43		
Nitrate	0.0069 B	0.020	mg/L	MCAWW 300.0A	08/20/11	1231102
		Dilution Factor: 1		Analysis Time..: 02:43		
Nitrite	ND	0.020	mg/L	MCAWW 300.0A	08/20/11	1231103
		Dilution Factor: 1		Analysis Time..: 02:43		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/20/11	1231104
		Dilution Factor: 1		Analysis Time..: 02:43		
Sulfate	0.30 B	0.50	mg/L	MCAWW 300.0A	08/20/11	1231105
		Dilution Factor: 1		Analysis Time..: 02:43		
Total Alkalinity	2.8 B	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	11.0	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-009 Work Order #...: MLT5D1A1 Matrix.....: WATER
Date Sampled...: 08/18/11 09:35 Date Received..: 08/19/11
Prep Date.....: 08/24/11 Analysis Date..: 08/25/11
Prep Batch #...: 1237141 Analysis Time..: 02:34
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**5.7**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**3.5**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**14**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**2.0**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**1.9**	**1.0**	**ug/L**
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	**0.41 J**	**1.0**	**ug/L**
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.27 J**	**1.0**	**ug/L**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-009 **Work Order #...:** MLT5D1A1 **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	114	(85 - 120)
Dibromofluoromethane	88	(85 - 115)
1,2-Dichloroethane-d4	88	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001

TOTAL Metals

Lot-Sample #...: F1H190431-009 Matrix.....: WATER
Date Sampled...: 08/18/11 09:35 Date Received..: 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	**38.7**	**1.0**	**ug/L**	**SW846 6020A**	**08/22-08/24/11**	**MLT5D1AT**
		Dilution Factor: 1		Analysis Time..: 05:23		
Prep Batch #...: 1234136						
Zinc	**84.4**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5D1AR**
		Dilution Factor: 1		Analysis Time..: 21:51		
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1A4
		Dilution Factor: 1		Analysis Time..: 21:51		
Aluminum	**110 J**	**200**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5D1A5**
		Dilution Factor: 1		Analysis Time..: 21:51		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1A3
		Dilution Factor: 1		Analysis Time..: 21:51		
Barium	**62.4**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5D1A6**
		Dilution Factor: 1		Analysis Time..: 21:51		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1A7
		Dilution Factor: 1		Analysis Time..: 21:51		
Calcium	**169000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5D1A8**
		Dilution Factor: 10		Analysis Time..: 21:11		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1A9
		Dilution Factor: 1		Analysis Time..: 21:51		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AA
		Dilution Factor: 1		Analysis Time..: 21:51		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AC
		Dilution Factor: 1		Analysis Time..: 21:51		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AD
		Dilution Factor: 1		Analysis Time..: 21:51		
Iron	**145**	**100**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5D1AE**
		Dilution Factor: 1		Analysis Time..: 19:05		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001

TOTAL Metals

Lot-Sample #...: F1H190431-009 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Magnesium	**47600**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5D1AF**
		Dilution Factor: 1		Analysis Time..: 19:05		
Manganese	**15.3**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5D1AG**
		Dilution Factor: 1		Analysis Time..: 21:51		
Sodium	**279000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5D1AH**
		Dilution Factor: 10		Analysis Time..: 21:11		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AJ
		Dilution Factor: 1		Analysis Time..: 21:51		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AK
		Dilution Factor: 1		Analysis Time..: 21:51		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AL
		Dilution Factor: 1		Analysis Time..: 21:51		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AM
		Dilution Factor: 1		Analysis Time..: 21:51		
Strontium	**887**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5D1AN**
		Dilution Factor: 10		Analysis Time..: 21:11		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT5D1AP
		Dilution Factor: 1		Analysis Time..: 16:31		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5D1AQ
		Dilution Factor: 1		Analysis Time..: 21:51		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001

General Chemistry

Lot-Sample #...: F1H190431-009 Work Order #...: MLT5D Matrix.....: WATER
Date Sampled...: 08/18/11 09:35 Date Received..: 08/19/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	463	20.0	mg/L	MCAWW 300.0A	08/19/11	1231100
		Dilution Factor: 100		Analysis Time..: 11:54		
Fluoride	1.2	0.10	mg/L	MCAWW 300.0A	08/19/11	1231101
		Dilution Factor: 1		Analysis Time..: 11:07		
Nitrate	0.15	0.020	mg/L	MCAWW 300.0A	08/19/11	1231102
		Dilution Factor: 1		Analysis Time..: 11:07		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/19/11	1231103
		Dilution Factor: 10		Analysis Time..: 11:38		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/19/11	1231104
		Dilution Factor: 1		Analysis Time..: 11:07		
Sulfate	220	50.0	mg/L	MCAWW 300.0A	08/19/11	1231105
		Dilution Factor: 100		Analysis Time..: 11:54		
Total Alkalinity	321	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1490	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-010 Work Order #...: MLT5F1AA Matrix.....: WATER
Date Sampled...: 08/18/11 10:30 Date Received..: 08/19/11
Prep Date.....: 08/24/11 Analysis Date..: 08/25/11
Prep Batch #...: 1237141 Analysis Time..: 02:58
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**17**	**2.0**	**ug/L**
Benzene	**4.0**	**1.0**	**ug/L**
Bromodichloromethane	**1.0**	**1.0**	**ug/L**
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**2.0**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	**0.34 J**	**1.0**	**ug/L**
Chloroethane	ND	2.0	ug/L
Chloroform	**6.2**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**1.5**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	**0.56 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**8.3**	**1.0**	**ug/L**
1,1,1-Trichloroethane	**2.4**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	**9.8**	**5.0**	**ug/L**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001

GC/MS Volatiles

Lot-Sample #...: F1H190431-010 Work Order #...: MLT5F1AA Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	112	(85 - 120)
Dibromofluoromethane	90	(85 - 115)
1,2-Dichloroethane-d4	90	(70 - 120)
4-Bromofluorobenzene	96	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW610D0001

TOTAL Metals

Lot-Sample #...: F1H190431-011 Matrix.....: WATER
Date Sampled...: 08/18/11 11:10 Date Received..: 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	9.6	1.0	ug/L	SW846 6020A	08/22-08/24/11	MLT5H1AT
		Dilution Factor: 1		Analysis Time..: 05:30		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1A4
		Dilution Factor: 1		Analysis Time..: 21:57		
Aluminum	432	200	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1A5
		Dilution Factor: 1		Analysis Time..: 21:57		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1A3
		Dilution Factor: 1		Analysis Time..: 21:57		
Barium	17.6 J	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1A6
		Dilution Factor: 1		Analysis Time..: 21:57		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1A7
		Dilution Factor: 1		Analysis Time..: 21:57		
Calcium	101000	10000	ug/L	SW846 6010C	08/22-08/26/11	MLT5H1A8
		Dilution Factor: 10		Analysis Time..: 21:17		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1A9
		Dilution Factor: 1		Analysis Time..: 21:57		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1AA
		Dilution Factor: 1		Analysis Time..: 21:57		
Chromium	5.8 J	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1AC
		Dilution Factor: 1		Analysis Time..: 21:57		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1AD
		Dilution Factor: 1		Analysis Time..: 21:57		
Iron	530	100	ug/L	SW846 6010C	08/22-08/26/11	MLT5H1AE
		Dilution Factor: 1		Analysis Time..: 19:11		
Magnesium	38900	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT5H1AF
		Dilution Factor: 1		Analysis Time..: 19:11		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW610D0001

TOTAL Metals

Lot-Sample #...: F1H190431-011 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**132**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5H1AG**
		Dilution Factor: 1		Analysis Time..: 21:57		
Sodium	**125000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5H1AH**
		Dilution Factor: 10		Analysis Time..: 21:17		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1AJ
		Dilution Factor: 1		Analysis Time..: 21:57		
Lead	**5.5 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5H1AK**
		Dilution Factor: 1		Analysis Time..: 21:57		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1AL
		Dilution Factor: 1		Analysis Time..: 21:57		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1AM
		Dilution Factor: 1		Analysis Time..: 21:57		
Strontium	**559**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT5H1AN**
		Dilution Factor: 10		Analysis Time..: 21:17		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT5H1AP
		Dilution Factor: 1		Analysis Time..: 16:38		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT5H1AQ
		Dilution Factor: 1		Analysis Time..: 21:57		
Zinc	**39.2**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT5H1AR**
		Dilution Factor: 1		Analysis Time..: 21:57		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW610D0001

General Chemistry

Lot-Sample #...: F1H190431-011 Work Order #...: MLT5H Matrix.....: WATER
Date Sampled...: 08/18/11 11:10 Date Received..: 08/19/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	99.2	20.0	mg/L	MCAWW 300.0A	08/19/11	1231100
		Dilution Factor: 100		Analysis Time..: 06:45		
Fluoride	0.66	0.10	mg/L	MCAWW 300.0A	08/19/11	1231101
		Dilution Factor: 1		Analysis Time..: 05:59		
Nitrate	0.64	0.020	mg/L	MCAWW 300.0A	08/19/11	1231102
		Dilution Factor: 1		Analysis Time..: 05:59		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/19/11	1231103
		Dilution Factor: 5		Analysis Time..: 06:14		
Phosphate as P, Ortho	0.16 B,J	0.50	mg/L	MCAWW 300.0A	08/19/11	1231104
		Dilution Factor: 1		Analysis Time..: 05:59		
Sulfate	90.3	5.0	mg/L	MCAWW 300.0A	08/19/11	1231105
		Dilution Factor: 10		Analysis Time..: 06:30		
Total Alkalinity	383	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	678	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW200001

TOTAL Metals

Lot-Sample #...: F1H190431-012 Matrix.....: WATER
Date Sampled...: 08/18/11 12:05 Date Received..: 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	13.5	1.0	ug/L	SW846 6020A	08/22-08/24/11	MLT541A5
		Dilution Factor: 1		Analysis Time..: 05:36		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AF
		Dilution Factor: 1		Analysis Time..: 22:04		
Aluminum	369	200	ug/L	SW846 6010C	08/22-08/27/11	MLT541AG
		Dilution Factor: 1		Analysis Time..: 22:04		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AE
		Dilution Factor: 1		Analysis Time..: 22:04		
Barium	59.5	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AH
		Dilution Factor: 1		Analysis Time..: 22:04		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AJ
		Dilution Factor: 1		Analysis Time..: 22:04		
Calcium	91800	10000	ug/L	SW846 6010C	08/22-08/26/11	MLT541AK
		Dilution Factor: 10		Analysis Time..: 21:23		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AL
		Dilution Factor: 1		Analysis Time..: 22:04		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AM
		Dilution Factor: 1		Analysis Time..: 22:04		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AN
		Dilution Factor: 1		Analysis Time..: 22:04		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AP
		Dilution Factor: 1		Analysis Time..: 22:04		
Iron	250	100	ug/L	SW846 6010C	08/22-08/26/11	MLT541AQ
		Dilution Factor: 1		Analysis Time..: 19:17		
Magnesium	20900	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT541AR
		Dilution Factor: 1		Analysis Time..: 19:17		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW200001

TOTAL Metals

Lot-Sample #...: F1H190431-012 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**22.5**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT541AT**
		Dilution Factor: 1		Analysis Time..: 22:04		
Sodium	**46500**	**1000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT541AU**
		Dilution Factor: 1		Analysis Time..: 19:17		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AV
		Dilution Factor: 1		Analysis Time..: 22:04		
Lead	**2.1 J**	**10.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT541AW**
		Dilution Factor: 1		Analysis Time..: 22:04		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541AX
		Dilution Factor: 1		Analysis Time..: 22:04		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541A0
		Dilution Factor: 1		Analysis Time..: 22:04		
Strontium	**195**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT541A1**
		Dilution Factor: 10		Analysis Time..: 21:23		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT541A2
		Dilution Factor: 1		Analysis Time..: 16:44		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT541A3
		Dilution Factor: 1		Analysis Time..: 22:04		
Zinc	**265**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT541A4**
		Dilution Factor: 1		Analysis Time..: 22:04		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW200001

General Chemistry

Lot-Sample #...: F1H190431-012 Work Order #...: MLT54 Matrix.....: WATER
Date Sampled...: 08/18/11 12:05 Date Received..: 08/19/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	66.1	20.0	mg/L	MCAWW 300.0A	08/20/11	1231100
		Dilution Factor: 100		Analysis Time..: 12:55		
Fluoride	0.58	0.10	mg/L	MCAWW 300.0A	08/20/11	1231101
		Dilution Factor: 1		Analysis Time..: 12:09		
Nitrate	4.1	0.10	mg/L	MCAWW 300.0A	08/20/11	1231102
		Dilution Factor: 5		Analysis Time..: 12:25		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/20/11	1231103
		Dilution Factor: 5		Analysis Time..: 12:25		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/20/11	1231104
		Dilution Factor: 1		Analysis Time..: 12:09		
Sulfate	25.7	2.5	mg/L	MCAWW 300.0A	08/20/11	1231105
		Dilution Factor: 5		Analysis Time..: 12:25		
Total Alkalinity	270	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	461	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW210001

TOTAL Metals

Lot-Sample #...: F1H190431-013 Matrix.....: WATER
Date Sampled...: 08/18/11 12:45 Date Received..: 08/19/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1234135						
Uranium	3.1	1.0	ug/L	SW846 6020A	08/22-08/24/11	MLT6E1AG
		Dilution Factor: 1		Analysis Time..: 05:43		
Prep Batch #...: 1234136						
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AQ
		Dilution Factor: 1		Analysis Time..: 22:10		
Aluminum	93.9 J	200	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AR
		Dilution Factor: 1		Analysis Time..: 22:10		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AP
		Dilution Factor: 1		Analysis Time..: 22:10		
Barium	72.0	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AT
		Dilution Factor: 1		Analysis Time..: 22:10		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AU
		Dilution Factor: 1		Analysis Time..: 22:10		
Calcium	80100	10000	ug/L	SW846 6010C	08/22-08/26/11	MLT6E1AV
		Dilution Factor: 10		Analysis Time..: 21:29		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AW
		Dilution Factor: 1		Analysis Time..: 22:10		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AX
		Dilution Factor: 1		Analysis Time..: 22:10		
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1A0
		Dilution Factor: 1		Analysis Time..: 22:10		
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1A1
		Dilution Factor: 1		Analysis Time..: 22:10		
Iron	64.9 J	100	ug/L	SW846 6010C	08/22-08/26/11	MLT6E1A2
		Dilution Factor: 1		Analysis Time..: 19:23		
Magnesium	25500	1000	ug/L	SW846 6010C	08/22-08/26/11	MLT6E1A3
		Dilution Factor: 1		Analysis Time..: 19:23		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW210001

TOTAL Metals

Lot-Sample #...: F1H190431-013 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**4.3 J**	**15.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT6E1A4**
		Dilution Factor: 1		Analysis Time..: 22:10		
Sodium	**207000**	**10000**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT6E1A5**
		Dilution Factor: 10		Analysis Time..: 21:29		
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1A6
		Dilution Factor: 1		Analysis Time..: 22:10		
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1A7
		Dilution Factor: 1		Analysis Time..: 22:10		
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1A8
		Dilution Factor: 1		Analysis Time..: 22:10		
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AA
		Dilution Factor: 1		Analysis Time..: 22:10		
Strontium	**177**	**50.0**	**ug/L**	**SW846 6010C**	**08/22-08/26/11**	**MLT6E1AC**
		Dilution Factor: 10		Analysis Time..: 21:29		
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLT6E1AD
		Dilution Factor: 1		Analysis Time..: 16:51		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLT6E1AE
		Dilution Factor: 1		Analysis Time..: 22:10		
Zinc	**64.9**	**20.0**	**ug/L**	**SW846 6010C**	**08/22-08/27/11**	**MLT6E1AF**
		Dilution Factor: 1		Analysis Time..: 22:10		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW210001

General Chemistry

Lot-Sample #...: F1H190431-013 Work Order #...: MLT6E Matrix.....: WATER
Date Sampled...: 08/18/11 12:45 Date Received..: 08/19/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	231	20.0	mg/L	MCAWW 300.0A	08/20/11	1231100
		Dilution Factor: 100		Analysis Time..: 02:28		
Fluoride	0.24	0.10	mg/L	MCAWW 300.0A	08/20/11	1231101
		Dilution Factor: 1		Analysis Time..: 01:42		
Nitrate	0.091	0.020	mg/L	MCAWW 300.0A	08/20/11	1231102
		Dilution Factor: 1		Analysis Time..: 01:42		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/20/11	1231103
		Dilution Factor: 10		Analysis Time..: 02:13		
Phosphate as P, Ortho	0.066 B,J	0.50	mg/L	MCAWW 300.0A	08/20/11	1231104
		Dilution Factor: 1		Analysis Time..: 01:42		
Sulfate	88.1	2.5	mg/L	MCAWW 300.0A	08/20/11	1231105
		Dilution Factor: 5		Analysis Time..: 01:57		
Total Alkalinity	377	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	913	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #3

GC/MS Volatiles

Lot-Sample #...: F1H190431-014 **Work Order #...:** MLT6H1AA **Matrix.....:** WATER
Date Sampled...: 08/18/11 **Date Received..:** 08/19/11
Prep Date.....: 08/24/11 **Analysis Date..:** 08/25/11
Prep Batch #...: 1237141 **Analysis Time..:** 00:36
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**0.077 J**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #3

GC/MS Volatiles

Lot-Sample #...: F1H190431-014 **Work Order #...:** MLT6H1AA **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	116	(85 - 120)
Dibromofluoromethane	88	(85 - 115)
1,2-Dichloroethane-d4	86	(70 - 120)
4-Bromofluorobenzene	95	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H190431 **Work Order #...:** ML2TV1AA **Matrix.....:** WATER
MB Lot-Sample #: F1H250000-141

Prep Date.....: 08/24/11 **Analysis Time..:** 00:13
Analysis Date..: 08/25/11 **Prep Batch #...:** 1237141
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	114	(85 - 120)
Dibromofluoromethane	90	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H190431 Work Order #...: ML2TV1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	90	(70 - 120)		
4-Bromofluorobenzene	93	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H190431 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H220000-135 **Prep Batch #...:** 1234135						
Uranium	ND	1.0	ug/L	SW846 6020A	08/22-08/24/11	MLWFC1AA
		Dilution Factor: 1				
		Analysis Time..: 03:36				
MB Lot-Sample #: F1H220000-136 **Prep Batch #...:** 1234136						
Aluminum	ND	200	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AD
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Antimony	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AU
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AA
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Barium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AE
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AF
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AH
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Calcium	ND	1000	ug/L	SW846 6010C	08/22-08/26/11	MLWFE1AG
		Dilution Factor: 1				
		Analysis Time..: 17:24				
Chromium	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AK
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AJ
		Dilution Factor: 1				
		Analysis Time..: 20:08				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H190431 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AL
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Iron	ND	100	ug/L	SW846 6010C	08/22-08/26/11	MLWFE1AM
		Dilution Factor: 1				
		Analysis Time..: 17:24				
Lead	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AT
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Magnesium	ND	1000	ug/L	SW846 6010C	08/22-08/26/11	MLWFE1AN
		Dilution Factor: 1				
		Analysis Time..: 17:24				
Manganese	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AP
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Nickel	ND	40.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AR
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Selenium	ND	15.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AV
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Silver	ND	10.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1AC
		Dilution Factor: 1				
		Analysis Time..: 20:08				
Sodium	ND	1000	ug/L	SW846 6010C	08/22-08/26/11	MLWFE1AQ
		Dilution Factor: 1				
		Analysis Time..: 17:24				
Strontium	ND	5.0	ug/L	SW846 6010C	08/22-08/26/11	MLWFE1AW
		Dilution Factor: 1				
		Analysis Time..: 17:24				
Thallium	ND	20.0	ug/L	SW846 6010C	08/22-08/28/11	MLWFE1AX
		Dilution Factor: 1				
		Analysis Time..: 14:35				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1A0
		Dilution Factor: 1				
		Analysis Time..: 20:08				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H190431 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/22-08/27/11	MLWFE1A1
		Dilution Factor: 1				
		Analysis Time..: 20:08				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H190431 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLX571AA		MB Lot-Sample #:	F1H190000-100	
	ND	0.20	mg/L	MCAWW 300.0A	08/19/11	1231100
		Dilution Factor: 1				
		Analysis Time..: 01:06				
Fluoride		Work Order #: MLX581AA		MB Lot-Sample #:	F1H190000-101	
	ND	0.10	mg/L	MCAWW 300.0A	08/19/11	1231101
		Dilution Factor: 1				
		Analysis Time..: 01:06				
Nitrate		Work Order #: MLX6A1AA		MB Lot-Sample #:	F1H190000-102	
	ND	0.020	mg/L	MCAWW 300.0A	08/19/11	1231102
		Dilution Factor: 1				
		Analysis Time..: 01:06				
Nitrite		Work Order #: MLX6F1AA		MB Lot-Sample #:	F1H190000-103	
	ND	0.020	mg/L	MCAWW 300.0A	08/19/11	1231103
		Dilution Factor: 1				
		Analysis Time..: 01:06				
Phosphate as P, Ortho		Work Order #: MLX6H1AA		MB Lot-Sample #:	F1H190000-104	
	0.20 B	**0.50**	**mg/L**	**MCAWW 300.0A**	**08/19/11**	**1231104**
		Dilution Factor: 1				
		Analysis Time..: 01:06				
Sulfate		Work Order #: MLX6J1AA		MB Lot-Sample #:	F1H190000-105	
	ND	0.50	mg/L	MCAWW 300.0A	08/19/11	1231105
		Dilution Factor: 1				
		Analysis Time..: 01:06				
Total Alkalinity		Work Order #: ML3DL1AA		MB Lot-Sample #:	F1H260000-032	
	ND	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: ML0CP1AA		MB Lot-Sample #:	F1H240000-026	
	ND	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H190431 Work Order #...: ML2TV1AC Matrix.....: WATER
LCS Lot-Sample#: F1H250000-141
Prep Date.....: 08/24/11 Analysis Date..: 08/24/11
Prep Batch #...: 1237141 Analysis Time..: 22:38
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Chlorobenzene	98	(80 - 120)	SW846 8260B
Bromoform	78	(70 - 130)	SW846 8260B
Ethylbenzene	102	(75 - 125)	SW846 8260B
Styrene	103	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	408 a	(65 - 130)	SW846 8260B
Tetrachloroethene	84	(45 - 150)	SW846 8260B
1,2-Dichlorobenzene	95	(70 - 120)	SW846 8260B
cis-1,3-Dichloropropene	81	(70 - 130)	SW846 8260B
Dibromochloromethane	93	(60 - 135)	SW846 8260B
Vinyl chloride	98	(50 - 145)	SW846 8260B
Bromomethane	97	(30 - 145)	SW846 8260B
Chloroethane	102	(60 - 135)	SW846 8260B
Acetone	65	(40 - 140)	SW846 8260B
1,1-Dichloroethene	103	(70 - 130)	SW846 8260B
Methylene chloride	91	(55 - 140)	SW846 8260B
Carbon disulfide	105	(35 - 160)	SW846 8260B
1,1-Dichloroethane	102	(70 - 135)	SW846 8260B
2-Butanone	83	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	97	(85 - 115)	SW846 8260B
Chloroform	97	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	107	(65 - 130)	SW846 8260B
Carbon tetrachloride	115	(65 - 140)	SW846 8260B
1,2-Dichloroethane	85	(70 - 130)	SW846 8260B
Benzene	98	(80 - 120)	SW846 8260B
Trichloroethene	87	(70 - 125)	SW846 8260B
1,2-Dichloropropane	91	(75 - 125)	SW846 8260B
Bromodichloromethane	83	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	85	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	102	(55 - 140)	SW846 8260B
Toluene	100	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	99	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	97	(75 - 125)	SW846 8260B
2-Hexanone	83	(55 - 130)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H190431 **Work Order #...:** ML2TV1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H250000-141

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
4-Methyl-2-pentanone	**83**	**(60 - 135)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	102	(85 - 115)
1,2-Dichloroethane-d4	93	(70 - 120)
4-Bromofluorobenzene	95	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H190431 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H220000-135 **Prep Batch #...:** 1234135					
Uranium	107	(80 - 120)	SW846 6020A	08/22-08/24/11	MLWFC1AC
		Dilution Factor: 1		Analysis Time..: 03:43	
LCS Lot-Sample#: F1H220000-136 **Prep Batch #...:** 1234136					
Arsenic	105	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1A2
		Dilution Factor: 1		Analysis Time..: 20:14	
Silver	94	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1A3
		Dilution Factor: 1		Analysis Time..: 20:14	
Aluminum	109	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1A4
		Dilution Factor: 1		Analysis Time..: 20:14	
Barium	108	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1A5
		Dilution Factor: 1		Analysis Time..: 20:14	
Beryllium	116	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1A6
		Dilution Factor: 1		Analysis Time..: 20:14	
Calcium	105	(80 - 120)	SW846 6010C	08/22-08/26/11	MLWFE1A7
		Dilution Factor: 1		Analysis Time..: 17:30	
Cadmium	107	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1A8
		Dilution Factor: 1		Analysis Time..: 20:14	
Cobalt	104	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1A9
		Dilution Factor: 1		Analysis Time..: 20:14	
Chromium	104	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CA
		Dilution Factor: 1		Analysis Time..: 20:14	
Copper	104	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CC
		Dilution Factor: 1		Analysis Time..: 20:14	
Iron	106	(80 - 120)	SW846 6010C	08/22-08/26/11	MLWFE1CD
		Dilution Factor: 1		Analysis Time..: 17:30	
Magnesium	100	(80 - 120)	SW846 6010C	08/22-08/26/11	MLWFE1CE
		Dilution Factor: 1		Analysis Time..: 17:30	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H190431 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	108	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CF
		Dilution Factor: 1	Analysis Time..: 20:14		
Sodium	103	(80 - 120)	SW846 6010C	08/22-08/26/11	MLWFE1CG
		Dilution Factor: 1	Analysis Time..: 17:30		
Nickel	104	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CH
		Dilution Factor: 1	Analysis Time..: 20:14		
Lead	103	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CJ
		Dilution Factor: 1	Analysis Time..: 20:14		
Antimony	107	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CK
		Dilution Factor: 1	Analysis Time..: 20:14		
Selenium	106	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CL
		Dilution Factor: 1	Analysis Time..: 20:14		
Strontium	100	(80 - 120)	SW846 6010C	08/22-08/26/11	MLWFE1CM
		Dilution Factor: 1	Analysis Time..: 17:30		
Thallium	100	(80 - 120)	SW846 6010C	08/22-08/28/11	MLWFE1CN
		Dilution Factor: 1	Analysis Time..: 14:42		
Vanadium	105	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CP
		Dilution Factor: 1	Analysis Time..: 20:14		
Zinc	113	(80 - 120)	SW846 6010C	08/22-08/27/11	MLWFE1CQ
		Dilution Factor: 1	Analysis Time..: 20:14		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H190431 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: MLX571AC	LCS Lot-Sample#: F1H190000-100		
	97	(90 - 110)	MCAWW 300.0A	08/19/11	1231100
		Dilution Factor: 1	Analysis Time..: 12:51		
Fluoride		Work Order #: MLX581AC	LCS Lot-Sample#: F1H190000-101		
	99	(90 - 110)	MCAWW 300.0A	08/19/11	1231101
		Dilution Factor: 1	Analysis Time..: 12:51		
Nitrate		Work Order #: MLX6A1AC	LCS Lot-Sample#: F1H190000-102		
	99	(90 - 110)	MCAWW 300.0A	08/19/11	1231102
		Dilution Factor: 1	Analysis Time..: 12:51		
Nitrite		Work Order #: MLX6F1AC	LCS Lot-Sample#: F1H190000-103		
	100	(90 - 110)	MCAWW 300.0A	08/19/11	1231103
		Dilution Factor: 1	Analysis Time..: 12:51		
Phosphate as P, Ortho		Work Order #: MLX6H1AC	LCS Lot-Sample#: F1H190000-104		
	101	(90 - 110)	MCAWW 300.0A	08/19/11	1231104
		Dilution Factor: 1	Analysis Time..: 12:51		
Sulfate		Work Order #: MLX6J1AC	LCS Lot-Sample#: F1H190000-105		
	97	(90 - 110)	MCAWW 300.0A	08/19/11	1231105
		Dilution Factor: 1	Analysis Time..: 12:51		
Total Alkalinity		Work Order #: ML3DL1AC	LCS Lot-Sample#: F1H260000-032		
	94	(90 - 110)	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: ML3DL1AD	LCS Lot-Sample#: F1H260000-032		
	94	(90 - 110)	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: ML0CP1AC	LCS Lot-Sample#: F1H240000-026		
	98	(90 - 113)	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H190431 Work Order #...: MLT471CG-MS Matrix.....: WATER
MS Lot-Sample #: F1H190431-007 MLT471CH-MSD
Date Sampled...: 08/18/11 08:25 Date Received..: 08/19/11
Prep Date.....: 08/24/11 Analysis Date..: 08/25/11
Prep Batch #...: 1237141 Analysis Time..: 01:24
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	82	(70 - 130)			SW846 8260B
	88	(70 - 130)	6.3	(0-20)	SW846 8260B
Dibromochloromethane	91	(60 - 135)			SW846 8260B
	96	(60 - 135)	5.6	(0-20)	SW846 8260B
Vinyl chloride	89	(50 - 145)			SW846 8260B
	86	(50 - 145)	3.3	(0-20)	SW846 8260B
Bromomethane	86	(30 - 145)			SW846 8260B
	89	(30 - 145)	3.9	(0-20)	SW846 8260B
Chloroethane	91	(60 - 135)			SW846 8260B
	91	(60 - 135)	0.51	(0-20)	SW846 8260B
Acetone	56	(40 - 140)			SW846 8260B
	65	(40 - 140)	15	(0-20)	SW846 8260B
1,1-Dichloroethene	106	(70 - 130)			SW846 8260B
	114	(70 - 130)	4.0	(0-20)	SW846 8260B
Methylene chloride	81	(55 - 140)			SW846 8260B
	88	(55 - 140)	8.0	(0-20)	SW846 8260B
Carbon disulfide	91	(35 - 160)			SW846 8260B
	96	(35 - 160)	4.9	(0-20)	SW846 8260B
1,1-Dichloroethane	125	(70 - 135)			SW846 8260B
	142 a	(70 - 135)	5.2	(0-20)	SW846 8260B
2-Butanone	86	(30 - 150)			SW846 8260B
	86	(30 - 150)	0.17	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	108	(85 - 115)			SW846 8260B
	124 a	(85 - 115)	6.0	(0-20)	SW846 8260B
Chloroform	101	(65 - 135)			SW846 8260B
	99	(65 - 135)	2.2	(0-20)	SW846 8260B
1,1,1-Trichloroethane	119	(65 - 130)			SW846 8260B
	136 a	(65 - 130)	6.7	(0-20)	SW846 8260B
Carbon tetrachloride	108	(65 - 140)			SW846 8260B
	108	(65 - 140)	0.83	(0-20)	SW846 8260B
1,2-Dichloroethane	87	(70 - 130)			SW846 8260B
	91	(70 - 130)	4.5	(0-20)	SW846 8260B
Benzene	98	(80 - 120)			SW846 8260B
	102	(80 - 120)	4.0	(0-20)	SW846 8260B
Trichloroethene	109	(70 - 125)			SW846 8260B
	111	(70 - 125)	1.1	(0-20)	SW846 8260B
1,2-Dichloropropane	101	(75 - 125)			SW846 8260B
	100	(75 - 125)	0.49	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H190431 Work Order #...: MLT471CG-MS Matrix.....: WATER
MS Lot-Sample #: F1H190431-007 MLT471CH-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	87	(75 - 120)			SW846 8260B
	86	(75 - 120)	0.62	(0-20)	SW846 8260B
1,1,2-Trichloroethane	86	(75 - 125)			SW846 8260B
	87	(75 - 125)	1.3	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	96	(55 - 140)			SW846 8260B
	101	(55 - 140)	5.0	(0-20)	SW846 8260B
Toluene	104	(75 - 120)			SW846 8260B
	102	(75 - 120)	1.3	(0-20)	SW846 8260B
1,3-Dichlorobenzene	104	(75 - 125)			SW846 8260B
	104	(75 - 125)	0.48	(0-20)	SW846 8260B
1,4-Dichlorobenzene	94	(75 - 125)			SW846 8260B
	101	(75 - 125)	7.4	(0-20)	SW846 8260B
2-Hexanone	85	(55 - 130)			SW846 8260B
	91	(55 - 130)	6.6	(0-20)	SW846 8260B
4-Methyl-2-pentanone	87	(60 - 135)			SW846 8260B
	88	(60 - 135)	1.9	(0-20)	SW846 8260B
Chlorobenzene	103	(80 - 120)			SW846 8260B
	101	(80 - 120)	2.5	(0-20)	SW846 8260B
Bromoform	78	(70 - 130)			SW846 8260B
	83	(70 - 130)	5.0	(0-20)	SW846 8260B
Ethylbenzene	108	(75 - 125)			SW846 8260B
	103	(75 - 125)	5.1	(0-20)	SW846 8260B
Styrene	104	(65 - 135)			SW846 8260B
	108	(65 - 135)	4.6	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	412 a	(65 - 130)			SW846 8260B
	437 a	(65 - 130)	5.9	(0-20)	SW846 8260B
Tetrachloroethene	59	(45 - 150)			SW846 8260B
	57	(45 - 150)	3.0	(0-20)	SW846 8260B
1,2-Dichlorobenzene	95	(70 - 120)			SW846 8260B
	100	(70 - 120)	5.3	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
	104	(85 - 120)
Dibromofluoromethane	98	(85 - 115)
	100	(85 - 115)
1,2-Dichloroethane-d4	91	(70 - 120)
	94	(70 - 120)
4-Bromofluorobenzene	94	(75 - 120)
	95	(75 - 120)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H190431 **Work Order #...:** MLT471CG-MS **Matrix.....:** WATER
MS Lot-Sample #: F1H190431-007 MLT471CH-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H190431 **Matrix.....:** WATER
Date Sampled...: 08/18/11 08:25 **Date Received..:** 08/19/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H190431-001 **Prep Batch #...:** 1234135							
Uranium	105	(80 - 120)			SW846 6020A	08/22-08/24/11	MLT391A5
	102	(80 - 120)	2.9	(0-20)	SW846 6020A	08/22-08/24/11	MLT391A6
		Dilution Factor: 1					
		Analysis Time..: 04:03					
MS Lot-Sample #: F1H190431-001 **Prep Batch #...:** 1234136							
Aluminum	105	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391CC
	105	(80 - 120)	0.16	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CD
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Antimony	102	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391C9
	101	(80 - 120)	0.18	(0-20)	SW846 6010C	08/22-08/27/11	MLT391DA
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Arsenic	102	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391A7
	102	(80 - 120)	0.24	(0-20)	SW846 6010C	08/22-08/27/11	MLT391A8
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Barium	103	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391CE
	103	(80 - 120)	0.10	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CF
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Beryllium	110	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391CG
	110	(80 - 120)	0.02	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CH
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Cadmium	98	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391CL
	98	(80 - 120)	0.09	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CM
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Calcium	41 N	(80 - 120)			SW846 6010C	08/22-08/26/11	MLT391CJ
	23 N	(80 - 120)	0.84	(0-20)	SW846 6010C	08/22-08/26/11	MLT391CK
		Dilution Factor: 10					
		Analysis Time..: 19:55					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H190431 **Matrix.....:** WATER
Date Sampled...: 08/18/11 08:25 **Date Received..:** 08/19/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	97	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391CQ
	97	(80 - 120)	0.09	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CR
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Cobalt	95	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391CN
	95	(80 - 120)	0.12	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CP
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Copper	99	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391CT
	99	(80 - 120)	0.30	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CU
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Iron	101	(80 - 120)			SW846 6010C	08/22-08/26/11	MLT391CV
	101	(80 - 120)	0.08	(0-20)	SW846 6010C	08/22-08/26/11	MLT391CW
		Dilution Factor: 1					
		Analysis Time..: 17:49					
Lead	94	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391C7
	94	(80 - 120)	0.48	(0-20)	SW846 6010C	08/22-08/27/11	MLT391C8
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Magnesium	93	(80 - 120)			SW846 6010C	08/22-08/26/11	MLT391CX
	97	(80 - 120)	1.0	(0-20)	SW846 6010C	08/22-08/26/11	MLT391C0
		Dilution Factor: 1					
		Analysis Time..: 17:49					
Manganese	100	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391C1
	100	(80 - 120)	0.31	(0-20)	SW846 6010C	08/22-08/27/11	MLT391C2
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Nickel	94	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391C5
	95	(80 - 120)	0.23	(0-20)	SW846 6010C	08/22-08/27/11	MLT391C6
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Selenium	101	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391DC
	102	(80 - 120)	1.2	(0-20)	SW846 6010C	08/22-08/27/11	MLT391DD
		Dilution Factor: 1					
		Analysis Time..: 20:33					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H190431 **Matrix.....:** WATER
Date Sampled...: 08/18/11 08:25 **Date Received..:** 08/19/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	91	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391A9
	90	(80 - 120)	0.40	(0-20)	SW846 6010C	08/22-08/27/11	MLT391CA
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Sodium	33 N	(80 - 120)			SW846 6010C	08/22-08/26/11	MLT391C3
	16 N	(80 - 120)	0.76	(0-20)	SW846 6010C	08/22-08/26/11	MLT391C4
		Dilution Factor: 10					
		Analysis Time..: 19:55					
Strontium	94	(80 - 120)			SW846 6010C	08/22-08/26/11	MLT391DE
	92	(80 - 120)	0.80	(0-20)	SW846 6010C	08/22-08/26/11	MLT391DF
		Dilution Factor: 10					
		Analysis Time..: 19:55					
Thallium	92	(80 - 120)			SW846 6010C	08/22-08/28/11	MLT391DG
	92	(80 - 120)	0.78	(0-20)	SW846 6010C	08/22-08/28/11	MLT391DH
		Dilution Factor: 1					
		Analysis Time..: 15:14					
Vanadium	99	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391DJ
	99	(80 - 120)	0.04	(0-20)	SW846 6010C	08/22-08/27/11	MLT391DK
		Dilution Factor: 1					
		Analysis Time..: 20:33					
Zinc	107	(80 - 120)			SW846 6010C	08/22-08/27/11	MLT391DL
	108	(80 - 120)	0.36	(0-20)	SW846 6010C	08/22-08/27/11	MLT391DM
		Dilution Factor: 1					
		Analysis Time..: 20:33					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H190431 **Matrix.....:** WATER
Date Sampled...: 08/18/11 11:10 **Date Received..:** 08/19/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLT5H1CM		MS Lot-Sample #: F1H190431-011	
	99	(90 - 110)	MCAWW 300.0A	08/19/11	1231100
		Dilution Factor: 100	Analysis Time..: 06:45		
Fluoride		Work Order #...: MLT5H1CP		MS Lot-Sample #: F1H190431-011	
	97	(90 - 110)	MCAWW 300.0A	08/19/11	1231101
		Dilution Factor: 1	Analysis Time..: 05:59		
Nitrate		Work Order #...: MLT5H1CR		MS Lot-Sample #: F1H190431-011	
	94	(90 - 110)	MCAWW 300.0A	08/19/11	1231102
		Dilution Factor: 1	Analysis Time..: 05:59		
Nitrite		Work Order #...: MLT5H1CU		MS Lot-Sample #: F1H190431-011	
	76 N	(90 - 110)	MCAWW 300.0A	08/19/11	1231103
		Dilution Factor: 5	Analysis Time..: 06:14		
Phosphate as P, Ortho		Work Order #...: MLT5H1CW		MS Lot-Sample #: F1H190431-011	
	61 N	(90 - 110)	MCAWW 300.0A	08/19/11	1231104
		Dilution Factor: 1	Analysis Time..: 05:59		
Sulfate		Work Order #...: MLT5H1C0		MS Lot-Sample #: F1H190431-011	
	103	(90 - 110)	MCAWW 300.0A	08/19/11	1231105
		Dilution Factor: 10	Analysis Time..: 06:30		
Total Alkalinity		Work Order #...: MLXMN1EH		MS Lot-Sample #: F1H230464-002	
	144 N	(80 - 120)	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H190431 **Work Order #...:** MLT5H-SMP MLT5H-DUP **Matrix.....:** WATER

Date Sampled...: 08/18/11 11:10 **Date Received..:** 08/19/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H190431-011		
	99.2	97.0	mg/L	2.2	(0-20)	MCAWW 300.0A	08/19/11	1231100
		Dilution Factor: 100				Analysis Time..: 06:45		
Fluoride						SD Lot-Sample #: F1H190431-011		
	0.66	0.64	mg/L	2.1	(0-20)	MCAWW 300.0A	08/19/11	1231101
		Dilution Factor: 1				Analysis Time..: 05:59		
Nitrate						SD Lot-Sample #: F1H190431-011		
	0.64	0.62	mg/L	3.7	(0-20)	MCAWW 300.0A	08/19/11	1231102
		Dilution Factor: 1				Analysis Time..: 05:59		
Nitrite						SD Lot-Sample #: F1H190431-011		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/19/11	1231103
		Dilution Factor: 5				Analysis Time..: 06:14		
Phosphate as P, Ortho						SD Lot-Sample #: F1H190431-011		
	0.16 B,J	0.079 B	mg/L	69	(0-20)	MCAWW 300.0A	08/19/11	1231104
		Dilution Factor: 1				Analysis Time..: 05:59		
Sulfate						SD Lot-Sample #: F1H190431-011		
	90.3	90.5	mg/L	0.24	(0-20)	MCAWW 300.0A	08/19/11	1231105
		Dilution Factor: 10				Analysis Time..: 06:30		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H190431 **Work Order #...:** MLT47-SMP MLT47-DUP **Matrix.....:** WATER

Date Sampled...: 08/18/11 08:25 **Date Received..:** 08/19/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H190431-007		
	1340	1380	mg/L	2.4	(0-0.0)	MCAWW 160.1	08/24-08/25/11	1236026
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H190431 **Work Order #...:** MLXMN-SMP MLXMN-DUP **Matrix.....:** WATER

Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #:	F1H230464-002	
	382	388	mg/L	1.5	(0-20)	MCAWW 310.1	08/26/11	1238032

Dilution Factor: 1 Analysis Time..: 00:00

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H190431-001
Work Order: MLT39
Matrix: WATER

Date Collected: 08/18/11 0825
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 56
Uranium 234	21.0		2.0	0.1	0.06	08/23/11	08/29/11
Uranium 235/236	1.38		0.32	0.10	0.04	08/23/11	08/29/11
Uranium 238	21.3		2.1	0.1	0.07	08/23/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H190431-002
Work Order: MLT4E
Matrix: WATER

Date Collected: 08/18/11 0850
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1235027**	**Yld % 84**
Uranium 234	0.019	U	0.030	0.100	0.050	08/23/11	08/27/11
Uranium 235/236	0.011	U	0.021	0.100	0.028	08/23/11	08/27/11
Uranium 238	0.004	U	0.018	0.100	0.045	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H190431-003
Work Order: MLT4H
Matrix: WATER

Date Collected: 08/18/11 0935
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 57
Uranium 234	14.0		1.4	0.1	0.08	08/23/11	08/27/11
Uranium 235/236	0.63		0.20	0.10	0.08	08/23/11	08/27/11
Uranium 238	12.4		1.3	0.1	0.06	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW610D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H190431-004
Work Order: MLT4K
Matrix: WATER

Date Collected: 08/18/11 1110
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 81
Uranium 234	2.56		0.36	0.10	0.04	08/23/11	08/27/11
Uranium 235/236	0.130		0.075	0.100	0.046	08/23/11	08/27/11
Uranium 238	2.61		0.37	0.10	0.04	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW200001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H190431-005
Work Order: MLT4V
Matrix: WATER

Date Collected: 08/18/11 1205
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 88
Uranium 234	3.89		0.49	0.10	0.05	08/23/11	08/27/11
Uranium 235/236	0.24		0.10	0.10	0.03	08/23/11	08/27/11
Uranium 238	3.82		0.48	0.10	0.02	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AM2100001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H190431-006
Work Order: MLT46
Matrix: WATER

Date Collected: 08/18/11 1245
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1235027		Yld % 66
Uranium 234	1.03		0.23	0.10	0.05	08/23/11	08/27/11
Uranium 235/236	0.037	U	0.047	0.100	0.060	08/23/11	08/27/11
Uranium 238	0.93		0.21	0.10	0.03	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0001

Radiochemistry

Lab Sample ID: F1H190431-007
Work Order: MLT47
Matrix: WATER

Date Collected: 08/18/11 0825
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 62
Uranium 234	18.6		1.8	0.1	0.06	08/23/11	08/27/11
Uranium 235/236	1.02		0.25	0.10	0.06	08/23/11	08/27/11
Uranium 238	19.1		1.8	0.1	0.06	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DFB710DD0001

Radiochemistry

Lab Sample ID: F1H190431-008
Work Order: MLT5A
Matrix: WATER

Date Collected: 08/18/11 0850
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1235027**	**Yld % 74**
Uranium 234	0.016	U	0.027	0.100	0.042	08/23/11	08/27/11
Uranium 235/236	0.012	U	0.023	0.100	0.031	08/23/11	08/27/11
Uranium 238	0.007	U	0.019	0.100	0.042	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW712DD0001

Radiochemistry

Lab Sample ID: F1H190431-009
Work Order: MLT5D
Matrix: WATER

Date Collected: 08/18/11 0935
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 55
Uranium 234	13.2		1.4	0.1	0.05	08/23/11	08/27/11
Uranium 235/236	0.59		0.19	0.10	0.07	08/23/11	08/27/11
Uranium 238	12.7		1.3	0.1	0.06	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW610D0001

Radiochemistry

Lab Sample ID: F1H190431-011
Work Order: MLT5H
Matrix: WATER

Date Collected: 08/18/11 1110
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 72
Uranium 234	2.54		0.37	0.10	0.03	08/23/11	08/27/11
Uranium 235/236	0.104		0.070	0.100	0.031	08/23/11	08/27/11
Uranium 238	2.66		0.39	0.10	0.03	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW200001

Radiochemistry

Lab Sample ID: F1H190431-012
Work Order: MLT54
Matrix: WATER

Date Collected: 08/18/11 1205
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1235027	Yld % 67
Uranium 234	4.50		0.56	0.10	0.03	08/23/11	08/27/11
Uranium 235/236	0.23		0.11	0.10	0.03	08/23/11	08/27/11
Uranium 238	4.27		0.54	0.10	0.03	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW210001

Radiochemistry

Lab Sample ID: F1H190431-013
Work Order: MLT6E
Matrix: WATER

Date Collected: 08/18/11 1245
Date Received: 08/19/11 0910

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1235027		Yld % 76
Uranium 234	0.73		0.18	0.10	0.05	08/23/11	08/27/11
Uranium 235/236	0.058		0.052	0.100	0.031	08/23/11	08/27/11
Uranium 238	0.79		0.18	0.10	0.04	08/23/11	08/27/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H190431
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID / Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1235027		Yld % 80	F1H230000-027B
Uranium 234	0.025	U	0.034	0.100	0.053	08/23/11	08/29/11
Uranium 235/236	-0.0026	U	0.0051	0.100	0.047	08/23/11	08/29/11
Uranium 238	0.006	U	0.017	0.100	0.037	08/23/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F1H190431
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ+/-)	% Yld	% Rec	QC Control Limits	Lab Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**A-01-R MOD**				**F1H230000-027C**	
Uranium 234		3.26	2.86	0.39	85	88	(76 - 136)		
	Spk 2	3.26	3.09	0.41	87	95	(76 - 136)	8	%RPD
Uranium 238		3.39	3.32	0.43	85	98	(76 - 134)		
	Spk 2	3.39	3.39	0.43	87	100	(76 - 134)	2	%RPD
		Batch #:	1235027		Analysis Date:		08/29/11		

NOTE(S):

Calculations are performed before rounding to avoid round-off error in calculated results

TestAmerica St. Louis

F1H190431

CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guteri Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc | #SMPS in LOT: 14

Date Received: 2011-08-19

Analytical Due Date: 2011-08-26

Report Due Date: 2011-08-29

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
1	A04DMW710DD0001 DISSOLVED			2011-08-18 / 825	MLT39	WATER

SAMPLE COMMENTS:

SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
2	A04DFB710DD0001 DISSOLVED			2011-08-18 / 850	MLT4E	WATER

SAMPLE COMMENTS:

MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H190431

CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 14

Date Received: 2011-08-19

Analytical Due Date: 2011-08-26

Report Due Date: 2011-08-29

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chrometography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
3	* A04DMW712DD0001 DISSOLVED			2011-08-18 / 935	MLT4H	WATER

SAMPLE COMMENTS:

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H190431 CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300

Project Manager: LMF Quote #: 89251 SDG:

Project: Y40415 Guterl Steel

PO#: 697886 Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 14

Date Received: 2011-08-19

Analytical Due Date: 2011-08-26

Report Due Date: 2011-08-29

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
4	A04AMW610D0001 DISSOLVED			2011-08-18 / 1110	MLT4K	WATER

SAMPLE COMMENTS:

NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

F1H190431

CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc | #SMPS In LOT: 14

Date Received: 2011-08-19

Analytical Due Date: 2011-08-26

Report Due Date: 2011-08-29

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
5	A04AMW200001 DISSOLVED			2011-08-18 / 1205	MLT4V	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
6	A04AM2100001 DISSOLVED			2011-08-18 / 1245	MLT46	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H190431

CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300

Date Received: 2011-08-19

Analytical Due Date: 2011-08-26

Report Due Date: 2011-08-29

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 14

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	A04DMW710DD0001			2011-08-18 / 825	MLT47	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GQ	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	A04DFB710DD0001			2011-08-18 / 850	MLT5A	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	A04DMW712DD0001			2011-08-18 / 935	MLT5D	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H190431 CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300,2-85

Project Manager: LMF | Quote #: 89251 | SDG:

Date Received: 2011-08-19

Project: Y40415 | Guterl Steel

Analytical Due Date: 2011-08-26

PO#: 697886 | Report to: Kevin Cronin

Report Due Date: 2011-08-29

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: B Standard Report

#SMPS In LOT: 14

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
10	A04BMW707DD0001			2011-08-18 / 1030	MLT5F	WATER

SAMPLE COMMENTS:

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
11	A04AMW610D0001			2011-08-18 / 1110	MLT5H	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H190431

CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300,2-85

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 14

Date Received: 2011-08-19

Analytical Due Date: 2011-08-26

Report Due Date: 2011-08-29

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
12	A04AMW200001			2011-08-18 / 1205	MLT54	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H190431 CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300,2-85

Project Manager: LMF Quote #: 89251 SDG: Date Received: 2011-08-19

Project: Y40415 Guteri Steel Analytical Due Date: 2011-08-26

PO#: 697886 Report to: Kevin Cronin Report Due Date: 2011-08-29

Client: 522706 Shaw Environmental & Infrastructure Inc #SMPS in LOT: 14 Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
13	A04AMW210001			2011-08-18 / 1245	MLT6E	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H190431

CLIENT ANALYSIS SUMMARY

Storage Loc: R299-300,2-85

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-19

Analytical Due Date: 2011-08-26

Report Due Date: 2011-08-29

Report Type: B Standard Report

#SMPS In LOT: 14

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
14	TRIP BLANK #3			2011-08-18 / 0	MLT6H	WATER

SAMPLE COMMENTS:

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	

estAmerica St. Louis
'15 Rider Trail North
th City, MO 63045
ne 314.298.8566 fax 314.298.8757

CUR 180

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/18/2011	COC No: 011
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
cinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below _____			
3) 782-4807 FAX	☐ 2 weeks			SDG No.
ject Name: Former Guterl Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
) #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
4DMW710DD0001	8/18/2011	0825	Grab	GW	10	X		X	X	X	X	X	X	X					4xLP 2x250P 1x500P 3xVIA
4DFB710DD0001	8/18/2011	0850	Grab	GW	10	X		X	X	X	X	X	X	X					↓ ↓ ↓ ↓
4DMW712DD0001	8/18/2011	0935	Grab	GW	10	X		X	X	X	X	X	X	X					
4BMW707DD0001	8/18/2011	1030	Grab	GW	3									X					3xVIAL 40
4AMW610D0001	8/18/2011	1110	Grab	GW	7	X		X	X	X	X	X	X						4xLP 2x250P 1x500P
4AMW200001	8/18/2011	1205	Grab	GW	7	X		X	X	X	X	X	X						↓ ↓ ↓
4AMW210001	8/18/2011	1245	Grab	GW	7	X		X	X	X	X	X	X						
Blank #3	8/18/2011	--	TB	--	1									X					1xVAIL 40

servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

sible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

cial Instructions/QC Requirements & Comments:

inquished by: [signature]	Company: Shaw E & I Inc.	Date/Time: 8-18-11/1610	Received by: [signature]	Company: BFLO	Date/Time: 08-18-11 16:10
inquished by: [signature]	Company: BFLO	Date/Time: 08-18-11 16:45	Received by: [signature]	Company: BFLO	Date/Time: 8/18/11 16:50
inquished by: [signature]	Company: BFLO	Date/Time: 8/18/1615	Received by: Nicholas Owens [signature]	Company: TA STL	Date/Time: 8/19/11 0910

TestAmerica St. Louis

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F1H190431 TestAmerica St. Louis

CUR Form #: 1 8 0

CONDITION UPON RECEIPT FORM

Client: SHAW ENVIRO

Quote No: 89251

COC/RFA No: 011

Initiated By: NVD Date: 8/19/11 Time: 0910

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*

1. 4485 0258 4649
2. 4485 0258 4650
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Sample Temperature (s):**

1. 4
2. 4
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler? NVD 8/19/11 NVD 8/19/11	8.	Y (N)	Are there custody seals present on bottles?
2.	Y N (N/A)	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

SAMPLE ID A04AMW610D000 IS ACTUALY LABELED AS A04AMW601D0001 AND WILL BE LOGGED PER C.O.C

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/22/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guterl Steel

Lot #: F1H230407

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

September 6, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H230407

This report contains the analytical results for the nine samples received under chain of custody by TestAmerica in St. Louis on August 23, 2011. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances

The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1237192
The CCV recoveries are outside the upper QC limit (greater than 20% D) for Bromomethane, Chloroethane, Trichlorofluoromethane and 1,2,3-Trichloropropane indicating a potential high bias for those analytes in the samples associated with this CCV. These analytes were not detected above the reporting limit or were not target analytes in the associated samples.

The LCS recovery for Bromomethane is outside the upper QC limit, indicating a potential positive bias for this analyte. This analyte was not observed above the reporting limit in the associated samples; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1H230407 (5): TRIP BLANK #5
F1H230407 (7): A02MW50001
F1H230407 (8): A02MW120001
F1H230407 (9): A02MW30001

The samples were analyzed at a dilution based upon laboratory screening information. The reporting limit has been adjusted for the dilution.

Affected Samples:
F1H230407 (7): A02MW50001

Batch: 124401
The MS/MSD analysis was not performed with this batch; the associated samples are dilutions only. The MS/MSD was performed with original analyses. An LCS/LCSD was performed to demonstrate accuracy and replicate precision.

The samples were analyzed at a dilution due to high concentrations of target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

The %RSD for Ethyl acetate exceeds the acceptance criteria. The analyte will not be reported from this ICAL.

The following compounds were removed from the initial calibration lowest point due to poor response. Ethyl ether, Methyl acetate, Acetontrile, Ethyl acetate, 2-Butanone, Isobutanol, 1,4-dioxane, 2-Nitropropane and Cyclohexanone. Addtionally, Acetone was removed from the lowest 2 points.

n-Propylbenzene and sec-Butylbenzene were removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration.

The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

Affected Samples:
F1H230407 (7): A02MW50001
F1H230407 (8): A02MW120001

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1236078
There was insufficient digestate volume for the analysis of thallium. The samples were re-prepared and the re-extract batch is 1242041.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

The serial dilution for sodium is outside of method acceptance criteria indicating matrix interference. All associated samples are flagged accordingly.

1236078-F1H230407-007
The MS (MSD) recovery for calcium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

1236078-F1H230407-002
The MS (MSD) recovery for strontium is outside the established QC limits. The RPD is within method acceptance criteria indicating matrix interference. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:
F1H230407 (1): A02MW600D0001 DISSOLVED
F1H230407 (2): A02MW50001 DISSOLVED
F1H230407 (3): A02MW120001 DISSOLVED
F1H230407 (4): A02MW30001 DISSOLVED
F1H230407 (6): A02M600D0001
F1H230407 (7): A02MW50001
F1H230407 (8): A02MW120001
F1H230407 (9): A02MW30001

The concentration of strontium in the CCB is greater than 2 times the MDL. The samples associated with this CCB exhibit concentrations greater than ten times the concentrations observed in the CCB.

Affected Samples:
F1H230407 (7): A02MW50001
F1H230407 (9): A02MW30001

Chloride (MCAWW 300.0A)

Batch: 1235141
The following samples were analyzed at a dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230407 (6): A02M600D0001
F1H230407 (7): A02MW50001
F1H230407 (9): A02MW30001

Nitrate (MCAWW 300.0A)

Batch: 1235143
The following samples were analyzed at a dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230407 (6): A02M600D0001
F1H230407 (7): A02MW50001
F1H230407 (9): A02MW30001

Sulfate (MCAWW 300.0A)

Batch: 1235146
The following samples were analyzed at a dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230407 (6): A02M600D0001
F1H230407 (7): A02MW50001
F1H230407 (8): A02MW120001
F1H230407 (9): A02MW30001

Fluoride (MCAWW 300.0A)

Batch: 1235142
The following samples were reported ND at a dilution, due to matrix interferences, which masked the target retention times in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230407 (6): A02M600D0001

Nitrite (MCAWW 300.0A)

Batch: 1235144
The following samples were reported ND at a dilution, due to matrix interferences, which masked the target retention times in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H230407 (6): A02M600D0001
F1H230407 (7): A02MW50001
F1H230407 (8): A02MW120001
F1H230407 (9): A02MW30001

Orthophosphate as P (MCAWW 300.0A)

Batch: 1235145
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H230407 (6): A02M600D0001
F1H230407 (7): A02MW50001
F1H230407 (8): A02MW120001
F1H230407 (9): A02MW30001

Filteralbe residue (TDS) (MCAWW 160.1)

Batch: 1238124
The sample was analyzed at a dilution based on high concentrations of target analytes. The reporting limit has been adjusted accordingly.

Affected Samples:
F1H230407 (6): A02M600D0001

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)
There was insufficient sample to perform the sample duplicate.

Affected Samples:
F1H230407 (1): A02MW600D0001 DISSOLVED
F1H230407 (2): A02MW50001 DISSOLVED
F1H230407 (3): A02MW120001 DISSOLVED
F1H230407 (4): A02MW30001 DISSOLVED
F1H230407 (6): A02M600D0001
F1H230407 (7): A02MW50001
F1H230407 (8): A02MW120001
F1H230407 (9): A02MW30001

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H230407

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H230407

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLW8C	001	A02MW600D0001 DISSOLVED	08/22/11	09:00
MLW8D	002	A02MW50001 DISSOLVED	08/22/11	11:05
MLW8E	003	A02MW120001 DISSOLVED	08/22/11	12:30
MLW8F	004	A02MW30001 DISSOLVED	08/22/11	13:45
MLW86	005	TRIP BLANK #5	08/22/11	
MLW88	006	A02M600D0001	08/22/11	09:00
MLW9L	007	A02MW50001	08/22/11	11:00
MLW9Q	008	A02MW120001	08/22/11	12:30
MLW9X	009	A02MW30001	08/22/11	13:45

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW600D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-001 Matrix.....: WATER
Date Sampled...: 08/22/11 09:00 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	**2.5**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLW8C1A3**
		Dilution Factor: 1		Analysis Time..: 06:29		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AD
		Dilution Factor: 1		Analysis Time..: 01:17		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AE
		Dilution Factor: 1		Analysis Time..: 01:17		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AC
		Dilution Factor: 1		Analysis Time..: 01:17		
Barium	**197**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8C1AF**
		Dilution Factor: 1		Analysis Time..: 01:17		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AG
		Dilution Factor: 1		Analysis Time..: 01:17		
Calcium	**369000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8C1AH**
		Dilution Factor: 10		Analysis Time..: 18:11		
Cadmium	**1.2 J**	**5**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8C1AJ**
		Dilution Factor: 1		Analysis Time..: 01:17		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AK
		Dilution Factor: 1		Analysis Time..: 01:17		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AL
		Dilution Factor: 1		Analysis Time..: 01:17		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AM
		Dilution Factor: 1		Analysis Time..: 01:17		
Iron	**322**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8C1AN**
		Dilution Factor: 1		Analysis Time..: 01:17		
Magnesium	**149000**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8C1AP**
		Dilution Factor: 10		Analysis Time..: 18:11		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW600D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**353**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8C1AQ**
		Dilution Factor: 1		Analysis Time..: 01:17		
Sodium	**1840000 E**	**50000**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLW8C1AR**
		Dilution Factor: 50		Analysis Time..: 15:10		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AT
		Dilution Factor: 1		Analysis Time..: 01:17		
Lead	**1.5 J**	**10**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8C1AU**
		Dilution Factor: 1		Analysis Time..: 01:17		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AV
		Dilution Factor: 1		Analysis Time..: 01:17		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1AW
		Dilution Factor: 1		Analysis Time..: 01:17		
Strontium	**1340 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLW8C1AX**
		Dilution Factor: 10		Analysis Time..: 13:29		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8C1A1
		Dilution Factor: 1		Analysis Time..: 01:17		
Zinc	**611**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8C1A2**
		Dilution Factor: 1		Analysis Time..: 01:17		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW8C2A0
		Dilution Factor: 1		Analysis Time..: 17:10		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-002 Matrix.....: WATER
Date Sampled...: 08/22/11 11:05 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	**6.2**	1	ug/L	SW846 6020A	08/24-08/26/11	MLW8D1AE
		Dilution Factor: 1		Analysis Time..: 06:36		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AJ
		Dilution Factor: 1		Analysis Time..: 01:23		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AK
		Dilution Factor: 1		Analysis Time..: 01:23		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AH
		Dilution Factor: 1		Analysis Time..: 01:23		
Barium	**54.6**	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AL
		Dilution Factor: 1		Analysis Time..: 01:23		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AM
		Dilution Factor: 1		Analysis Time..: 01:23		
Calcium	**95200 N**	10000	ug/L	SW846 6010C	08/24-08/27/11	MLW8D1AN
		Dilution Factor: 10		Analysis Time..: 18:17		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AP
		Dilution Factor: 1		Analysis Time..: 01:23		
Cobalt	**5.6 J**	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AQ
		Dilution Factor: 1		Analysis Time..: 01:23		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AR
		Dilution Factor: 1		Analysis Time..: 01:23		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AT
		Dilution Factor: 1		Analysis Time..: 01:23		
Iron	**2970**	100	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AU
		Dilution Factor: 1		Analysis Time..: 01:23		
Magnesium	**21600**	1000	ug/L	SW846 6010C	08/24-08/27/11	MLW8D1AV
		Dilution Factor: 1		Analysis Time..: 16:35		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	292	15	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AW
		Dilution Factor: 1		Analysis Time..: 01:23		
Sodium	10600 E	1000	ug/L	SW846 6010C	08/24-08/27/11	MLW8D1AX
		Dilution Factor: 1		Analysis Time..: 16:35		
Nickel	524	40	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1A0
		Dilution Factor: 1		Analysis Time..: 01:23		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1A1
		Dilution Factor: 1		Analysis Time..: 01:23		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1A2
		Dilution Factor: 1		Analysis Time..: 01:23		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1A3
		Dilution Factor: 1		Analysis Time..: 01:23		
Strontium	269 N	50	ug/L	SW846 6010C	08/24-08/30/11	MLW8D1A4
		Dilution Factor: 10		Analysis Time..: 13:35		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AC
		Dilution Factor: 1		Analysis Time..: 01:23		
Zinc	7.8 J	20	ug/L	SW846 6010C	08/24-08/28/11	MLW8D1AD
		Dilution Factor: 1		Analysis Time..: 01:23		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW8D2AA
		Dilution Factor: 1		Analysis Time..: 17:16		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-003 **Matrix.....:** WATER
Date Sampled...: 08/22/11 12:30 **Date Received..:** 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	**3.8**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLW8E1AE**
		Dilution Factor: 1		Analysis Time..: 07:02		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AJ
		Dilution Factor: 1		Analysis Time..: 01:49		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AK
		Dilution Factor: 1		Analysis Time..: 01:49		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AH
		Dilution Factor: 1		Analysis Time..: 01:49		
Barium	**76.4**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8E1AL**
		Dilution Factor: 1		Analysis Time..: 01:49		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AM
		Dilution Factor: 1		Analysis Time..: 01:49		
Calcium	**62400 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8E1AN**
		Dilution Factor: 10		Analysis Time..: 18:43		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AP
		Dilution Factor: 1		Analysis Time..: 01:49		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AQ
		Dilution Factor: 1		Analysis Time..: 01:49		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AR
		Dilution Factor: 1		Analysis Time..: 01:49		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AT
		Dilution Factor: 1		Analysis Time..: 01:49		
Iron	**217**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8E1AU**
		Dilution Factor: 1		Analysis Time..: 01:49		
Magnesium	**14200**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8E1AV**
		Dilution Factor: 1		Analysis Time..: 17:01		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**344**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8E1AW**
		Dilution Factor: 1		Analysis Time..: 01:49		
Sodium	**1960 E**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8E1AX**
		Dilution Factor: 1		Analysis Time..: 17:01		
Nickel	**227**	**40**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8E1A0**
		Dilution Factor: 1		Analysis Time..: 01:49		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1A1
		Dilution Factor: 1		Analysis Time..: 01:49		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1A2
		Dilution Factor: 1		Analysis Time..: 01:49		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1A3
		Dilution Factor: 1		Analysis Time..: 01:49		
Strontium	**183 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLW8E1A4**
		Dilution Factor: 10		Analysis Time..: 14:00		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8E1AC
		Dilution Factor: 1		Analysis Time..: 01:49		
Zinc	**42.0**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8E1AD**
		Dilution Factor: 1		Analysis Time..: 01:49		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW8E2AA
		Dilution Factor: 1		Analysis Time..: 17:42		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-004 Matrix.....: WATER
Date Sampled...: 08/22/11 13:45 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	**2.5**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLW8F1AE**
		Dilution Factor: 1		Analysis Time..: 07:16		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AJ
		Dilution Factor: 1		Analysis Time..: 02:02		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AK
		Dilution Factor: 1		Analysis Time..: 02:02		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AH
		Dilution Factor: 1		Analysis Time..: 02:02		
Barium	**81.1**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8F1AL**
		Dilution Factor: 1		Analysis Time..: 02:02		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AM
		Dilution Factor: 1		Analysis Time..: 02:02		
Calcium	**103000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8F1AN**
		Dilution Factor: 10		Analysis Time..: 19:09		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AP
		Dilution Factor: 1		Analysis Time..: 02:02		
Cobalt	**20.6 J**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8F1AQ**
		Dilution Factor: 1		Analysis Time..: 02:02		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AR
		Dilution Factor: 1		Analysis Time..: 02:02		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AT
		Dilution Factor: 1		Analysis Time..: 02:02		
Iron	**3330**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8F1AU**
		Dilution Factor: 1		Analysis Time..: 02:02		
Magnesium	**26900**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8F1AV**
		Dilution Factor: 1		Analysis Time..: 17:14		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230407-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**348**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8F1AW**
		Dilution Factor: 1		Analysis Time..: 02:02		
Sodium	**10200 E**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW8F1AX**
		Dilution Factor: 1		Analysis Time..: 17:14		
Nickel	**954**	**40**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8F1A0**
		Dilution Factor: 1		Analysis Time..: 02:02		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1A1
		Dilution Factor: 1		Analysis Time..: 02:02		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1A2
		Dilution Factor: 1		Analysis Time..: 02:02		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1A3
		Dilution Factor: 1		Analysis Time..: 02:02		
Strontium	**236 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLW8F1A4**
		Dilution Factor: 10		Analysis Time..: 14:13		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW8F1AC
		Dilution Factor: 1		Analysis Time..: 02:02		
Zinc	**26.4**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW8F1AD**
		Dilution Factor: 1		Analysis Time..: 02:02		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW8F2AA
		Dilution Factor: 1		Analysis Time..: 17:55		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #5

GC/MS Volatiles

Lot-Sample #...: F1H230407-005 **Work Order #...:** MLW861AA **Matrix.....:** WATER
Date Sampled...: 08/22/11 **Date Received..:** 08/23/11
Prep Date.....: 08/25/11 **Analysis Date..:** 08/25/11
Prep Batch #...: 1237192 **Analysis Time..:** 22:57
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #5

GC/MS Volatiles

Lot-Sample #...: F1H230407-005 **Work Order #...:** MLW861AA **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	113	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
1,2-Dichloroethane-d4	98	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02M600D0001

TOTAL Metals

Lot-Sample #...: F1H230407-006 **Matrix.....:** WATER
Date Sampled...: 08/22/11 09:00 **Date Received..:** 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	**2.4**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLW881A4**
		Dilution Factor: 1		Analysis Time..: 07:36		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW881AE
		Dilution Factor: 1		Analysis Time..: 02:08		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW881AF
		Dilution Factor: 1		Analysis Time..: 02:08		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW881AD
		Dilution Factor: 1		Analysis Time..: 02:08		
Barium	**192**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW881AG**
		Dilution Factor: 1		Analysis Time..: 02:08		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW881AH
		Dilution Factor: 1		Analysis Time..: 02:08		
Calcium	**380000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW881AJ**
		Dilution Factor: 10		Analysis Time..: 19:15		
Cadmium	**1.2 J**	**5**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW881AK**
		Dilution Factor: 1		Analysis Time..: 02:08		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW881AL
		Dilution Factor: 1		Analysis Time..: 02:08		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW881AM
		Dilution Factor: 1		Analysis Time..: 02:08		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW881AN
		Dilution Factor: 1		Analysis Time..: 02:08		
Iron	**648**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW881AP**
		Dilution Factor: 1		Analysis Time..: 02:08		
Magnesium	**152000**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW881AQ**
		Dilution Factor: 10		Analysis Time..: 19:15		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02M600D0001

TOTAL Metals

Lot-Sample #...: F1H230407-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**353**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW881AR**
		Dilution Factor: 1		Analysis Time..: 02:08		
Sodium	**1830000 E**	**50000**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLW881AT**
		Dilution Factor: 50		Analysis Time..: 15:16		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	MLW881AU
		Dilution Factor: 1		Analysis Time..: 02:08		
Lead	**16.4**	**10**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW881AV**
		Dilution Factor: 1		Analysis Time..: 02:08		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW881AW
		Dilution Factor: 1		Analysis Time..: 02:08		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW881AX
		Dilution Factor: 1		Analysis Time..: 02:08		
Strontium	**1280 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLW881A0**
		Dilution Factor: 10		Analysis Time..: 14:19		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW881A2
		Dilution Factor: 1		Analysis Time..: 02:08		
Zinc	**614**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW881A3**
		Dilution Factor: 1		Analysis Time..: 02:08		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW882A1
		Dilution Factor: 1		Analysis Time..: 18:14		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02M600D0001

General Chemistry

Lot-Sample #...: F1H230407-006 **Work Order #...:** MLW88 **Matrix.....:** WATER
Date Sampled...: 08/22/11 09:00 **Date Received..:** 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	2660	400	mg/L	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 2000		Analysis Time..: 01:30		
Fluoride	0.13 B	1.0	mg/L	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 10		Analysis Time..: 12:57		
Nitrate	ND	0.20	mg/L	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 10		Analysis Time..: 12:57		
Nitrite	ND	40.0	mg/L	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 2000		Analysis Time..: 01:30		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1		Analysis Time..: 12:40		
Sulfate	209	100	mg/L	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 200		Analysis Time..: 01:13		
Total Alkalinity	524	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	5400	1000	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 100		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001

GC/MS Volatiles

Lot-Sample #...: F1H230407-007 Work Order #...: MLW9L1CE Matrix.....: WATER
Date Sampled...: 08/22/11 11:00 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/25/11
Prep Batch #...: 1237192 Analysis Time..: 23:51
Dilution Factor: 10
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	20	ug/L
Benzene	**3.2 J,D**	**10**	**ug/L**
Bromodichloromethane	ND	10	ug/L
Bromoform	ND	10	ug/L
Bromomethane	ND	20	ug/L
2-Butanone	ND	50	ug/L
Carbon disulfide	ND	20	ug/L
Carbon tetrachloride	ND	10	ug/L
Chlorobenzene	ND	20	ug/L
Dibromochloromethane	ND	10	ug/L
Chloroethane	**130 D**	**20**	**ug/L**
Chloroform	**7.0 J,D**	**10**	**ug/L**
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,2-Dichloroethane	ND	10	ug/L
1,1-Dichloroethene	**20 D**	**10**	**ug/L**
1,2-Dichloroethene (total)	**17 J,D**	**20**	**ug/L**
1,2-Dichloropropane	ND	10	ug/L
cis-1,3-Dichloropropene	ND	10	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	10	ug/L
2-Hexanone	ND	50	ug/L
Methylene chloride	ND	10	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Styrene	ND	10	ug/L
1,1,2,2-Tetrachloroethane	ND	10	ug/L
Tetrachloroethene	**1.9 J,D**	**10**	**ug/L**
Toluene	ND	10	ug/L
1,1,1-Trichloroethane	**71 D**	**10**	**ug/L**
1,1,2-Trichloroethane	ND	10	ug/L
Trichloroethene	**12 D**	**10**	**ug/L**
Vinyl chloride	**7.5 J,D**	**20**	**ug/L**
Xylenes (total)	ND	50	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001

GC/MS Volatiles

Lot-Sample #...: F1H230407-007 Work Order #...: MLW9L1CE Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
1,2-Dichloroethane-d4	100	(70 - 120)
4-Bromofluorobenzene	99	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001

GC/MS Volatiles

Lot-Sample #...: F1H230407-007	Work Order #...: MLW9L2CE	Matrix.....: WATER	
Date Sampled...: 08/22/11 11:00	Date Received..: 08/23/11		
Prep Date.....: 08/31/11	Analysis Date..: 08/31/11		
Prep Batch #...: 1244011	Analysis Time..: 19:51		
Dilution Factor: 20			
	Method.....: SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethane	560 D	20	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	96	(85 - 120)
Dibromofluoromethane	101	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	95	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001

TOTAL Metals

Lot-Sample #...: F1H230407-007 Matrix.....: WATER
Date Sampled...: 08/22/11 11:00 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	**6.1**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLW9L1AF**
		Dilution Factor: 1		Analysis Time..: 07:42		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1AQ
		Dilution Factor: 1		Analysis Time..: 02:15		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1AR
		Dilution Factor: 1		Analysis Time..: 02:15		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1AP
		Dilution Factor: 1		Analysis Time..: 02:15		
Barium	**53.7**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW9L1AT**
		Dilution Factor: 1		Analysis Time..: 02:15		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1AU
		Dilution Factor: 1		Analysis Time..: 02:15		
Calcium	**96400 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW9L1AV**
		Dilution Factor: 10		Analysis Time..: 19:21		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1AW
		Dilution Factor: 1		Analysis Time..: 02:15		
Cobalt	**5.5 J**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW9L1AX**
		Dilution Factor: 1		Analysis Time..: 02:15		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1A0
		Dilution Factor: 1		Analysis Time..: 02:15		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1A1
		Dilution Factor: 1		Analysis Time..: 02:15		
Iron	**2840**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW9L1A2**
		Dilution Factor: 1		Analysis Time..: 02:15		
Magnesium	**21500**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW9L1A3**
		Dilution Factor: 1		Analysis Time..: 17:26		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001

TOTAL Metals

Lot-Sample #...: F1H230407-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**288**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW9L1A4**
		Dilution Factor: 1		Analysis Time..: 02:15		
Sodium	**10800 E**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLW9L1A5**
		Dilution Factor: 1		Analysis Time..: 17:26		
Nickel	**534**	**40**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW9L1A6**
		Dilution Factor: 1		Analysis Time..: 02:15		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1A7
		Dilution Factor: 1		Analysis Time..: 02:15		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1A8
		Dilution Factor: 1		Analysis Time..: 02:15		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1A9
		Dilution Factor: 1		Analysis Time..: 02:15		
Strontium	**212 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLW9L1AA**
		Dilution Factor: 10		Analysis Time..: 14:26		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW9L1AD
		Dilution Factor: 1		Analysis Time..: 02:15		
Zinc	**8.6 J**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLW9L1AE**
		Dilution Factor: 1		Analysis Time..: 02:15		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW9L2AC
		Dilution Factor: 1		Analysis Time..: 18:21		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001

General Chemistry

Lot-Sample #...: F1H230407-007 Work Order #...: MLW9L Matrix.....: WATER
Date Sampled...: 08/22/11 11:00 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	16.6	1.0	mg/L	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 5		Analysis Time..: 02:02		
Fluoride	2.9	0.50	mg/L	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 5		Analysis Time..: 02:02		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 1		Analysis Time..: 01:46		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 5		Analysis Time..: 02:02		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1		Analysis Time..: 01:46		
Sulfate	73.2	2.5	mg/L	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 5		Analysis Time..: 02:02		
Total Alkalinity	254	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	400	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001

GC/MS Volatiles

Lot-Sample #...: F1H230407-008 Work Order #...: MLW9Q1CE Matrix.....: WATER
Date Sampled...: 08/22/11 12:30 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 00:18
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	**0.13 J**	**1.0**	**ug/L**
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**38**	**1.0**	**ug/L**
1,2-Dichlorobenzene	**0.83 J**	**1.0**	**ug/L**
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**18**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**2.6**	**1.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Toluene	**4.1**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**20**	**1.0**	**ug/L**
Vinyl chloride	**6.2**	**2.0**	**ug/L**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	111	(85 - 115)
1,2-Dichloroethane-d4	102	(70 - 120)
4-Bromofluorobenzene	106	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001

GC/MS Volatiles

Lot-Sample #...: F1H230407-008 Work Order #...: MLW9Q2CE Matrix.....: WATER
Date Sampled...: 08/22/11 12:30 Date Received..: 08/23/11
Prep Date.....: 08/31/11 Analysis Date..: 08/31/11
Prep Batch #...: 1244011 Analysis Time..: 21:04
Dilution Factor: 5
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Carbon tetrachloride	85 D	5.0	ug/L
1,2-Dichloroethene (total)	130 D	10	ug/L
Tetrachloroethene	110 D	5.0	ug/L
1,1,1-Trichloroethane	60 D	5.0	ug/L
Xylenes (total)	130 D	25	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	96	(85 - 120)
Dibromofluoromethane	95	(85 - 115)
1,2-Dichloroethane-d4	92	(70 - 120)
4-Bromofluorobenzene	93	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001

TOTAL Metals

Lot-Sample #...: F1H230407-008 Matrix.....: WATER
Date Sampled...: 08/22/11 12:30 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	3.9	1	ug/L	SW846 6020A	08/24-08/26/11	MLW9Q1AR
		Dilution Factor: 1		Analysis Time..: 08:02		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1A3
		Dilution Factor: 1		Analysis Time..: 02:47		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1A4
		Dilution Factor: 1		Analysis Time..: 02:47		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1A2
		Dilution Factor: 1		Analysis Time..: 02:47		
Barium	77.0	50	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1A5
		Dilution Factor: 1		Analysis Time..: 02:47		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1A6
		Dilution Factor: 1		Analysis Time..: 02:47		
Calcium	62100 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLW9Q1A7
		Dilution Factor: 10		Analysis Time..: 19:41		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1A8
		Dilution Factor: 1		Analysis Time..: 02:47		
Cobalt	4.2 J	50	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1A9
		Dilution Factor: 1		Analysis Time..: 02:47		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AA
		Dilution Factor: 1		Analysis Time..: 02:47		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AC
		Dilution Factor: 1		Analysis Time..: 02:47		
Iron	802	100	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AD
		Dilution Factor: 1		Analysis Time..: 02:47		
Magnesium	14300	1000	ug/L	SW846 6010C	08/24-08/27/11	MLW9Q1AE
		Dilution Factor: 1		Analysis Time..: 17:58		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001

TOTAL Metals

Lot-Sample #...: F1H230407-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	348	15	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AF
		Dilution Factor: 1		Analysis Time..: 02:47		
Sodium	2070 E	1000	ug/L	SW846 6010C	08/24-08/27/11	MLW9Q1AG
		Dilution Factor: 1		Analysis Time..: 17:58		
Nickel	246	40	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AH
		Dilution Factor: 1		Analysis Time..: 02:47		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AJ
		Dilution Factor: 1		Analysis Time..: 02:47		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AK
		Dilution Factor: 1		Analysis Time..: 02:47		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AL
		Dilution Factor: 1		Analysis Time..: 02:47		
Strontium	206 N	50	ug/L	SW846 6010C	08/24-08/31/11	MLW9Q1AM
		Dilution Factor: 10		Analysis Time..: 13:28		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AP
		Dilution Factor: 1		Analysis Time..: 02:47		
Zinc	46.4	20	ug/L	SW846 6010C	08/24-08/28/11	MLW9Q1AQ
		Dilution Factor: 1		Analysis Time..: 02:47		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW9Q2AN
		Dilution Factor: 1		Analysis Time..: 18:40		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001

General Chemistry

Lot-Sample #...: F1H230407-008 Work Order #...: MLW9Q Matrix.....: WATER
Date Sampled...: 08/22/11 12:30 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	1.8	0.20	mg/L	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 1		Analysis Time..: 05:36		
Fluoride	1.5	0.10	mg/L	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 1		Analysis Time..: 05:36		
Nitrate	0.017 B	0.020	mg/L	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 1		Analysis Time..: 05:36		
Nitrite	ND	0.020	mg/L	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 1		Analysis Time..: 05:36		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1		Analysis Time..: 05:36		
Sulfate	21.1	2.5	mg/L	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 5		Analysis Time..: 05:52		
Total Alkalinity	196	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	233	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001

GC/MS Volatiles

Lot-Sample #...: F1H230407-009 Work Order #...: MLW9X1CE Matrix.....: WATER
Date Sampled...: 08/22/11 13:45 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 00:44
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	**0.24 J**	**2.0**	**ug/L**
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**16**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**4.8**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**2.3**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**2.5**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	**0.77 J**	**1.0**	**ug/L**
Vinyl chloride	**0.47 J**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001

GC/MS Volatiles

Lot-Sample #...: F1H230407-009 **Work Order #...:** MLW9X1CE **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	112	(85 - 120)
Dibromofluoromethane	105	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001

TOTAL Metals

Lot-Sample #...: F1H230407-009 Matrix.....: WATER
Date Sampled...: 08/22/11 13:45 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236076						
Uranium	2.6	1	ug/L	SW846 6020A	08/24-08/26/11	MLW9X1A4
		Dilution Factor: 1		Analysis Time..: 08:09		
Prep Batch #...: 1236078						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AE
		Dilution Factor: 1		Analysis Time..: 02:54		
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AF
		Dilution Factor: 1		Analysis Time..: 02:54		
Arsenic	3.4 J	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AD
		Dilution Factor: 1		Analysis Time..: 02:54		
Barium	80.5	50	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AG
		Dilution Factor: 1		Analysis Time..: 02:54		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AH
		Dilution Factor: 1		Analysis Time..: 02:54		
Calcium	102000 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLW9X1AJ
		Dilution Factor: 10		Analysis Time..: 19:47		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AK
		Dilution Factor: 1		Analysis Time..: 02:54		
Cobalt	21.1 J	50	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AL
		Dilution Factor: 1		Analysis Time..: 02:54		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AM
		Dilution Factor: 1		Analysis Time..: 02:54		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AN
		Dilution Factor: 1		Analysis Time..: 02:54		
Iron	5880	100	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AP
		Dilution Factor: 1		Analysis Time..: 02:54		
Magnesium	26100	1000	ug/L	SW846 6010C	08/24-08/27/11	MLW9X1AQ
		Dilution Factor: 1		Analysis Time..: 18:05		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001

TOTAL Metals

Lot-Sample #...: F1H230407-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	349	15	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AR
		Dilution Factor: 1		Analysis Time..: 02:54		
Sodium	10500 E	1000	ug/L	SW846 6010C	08/24-08/27/11	MLW9X1AT
		Dilution Factor: 1		Analysis Time..: 18:05		
Nickel	1000	40	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AU
		Dilution Factor: 1		Analysis Time..: 02:54		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AV
		Dilution Factor: 1		Analysis Time..: 02:54		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AW
		Dilution Factor: 1		Analysis Time..: 02:54		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1AX
		Dilution Factor: 1		Analysis Time..: 02:54		
Strontium	289 N	50	ug/L	SW846 6010C	08/24-08/30/11	MLW9X1A0
		Dilution Factor: 10		Analysis Time..: 15:03		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1A2
		Dilution Factor: 1		Analysis Time..: 02:54		
Zinc	29.9	20	ug/L	SW846 6010C	08/24-08/28/11	MLW9X1A3
		Dilution Factor: 1		Analysis Time..: 02:54		
Prep Batch #...: 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	MLW9X2A1
		Dilution Factor: 1		Analysis Time..: 18:47		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001

General Chemistry

Lot-Sample #...: F1H230407-009 Work Order #...: MLW9X Matrix.....: WATER
Date Sampled...: 08/22/11 13:45 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	11.1	1.0	mg/L	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 5		Analysis Time..: 07:31		
Fluoride	4.4	0.50	mg/L	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 5		Analysis Time..: 07:31		
Nitrate	ND	0.020	mg/L	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 1		Analysis Time..: 07:14		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 5		Analysis Time..: 07:31		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1		Analysis Time..: 07:14		
Sulfate	41.6	2.5	mg/L	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 5		Analysis Time..: 07:31		
Total Alkalinity	325	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	410	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1		Analysis Time..: 00:00		

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 Work Order #...: ML3581AA Matrix.....: WATER
MB Lot-Sample #: F1H250000-192

Prep Date.....: 08/25/11 Analysis Time..: 22:13
Analysis Date..: 08/25/11 Prep Batch #...: 1237192
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)
Dibromofluoromethane	102	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 Work Order #...: ML3581AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	102	(70 - 120)		
4-Bromofluorobenzene	99	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 **Work Order #...:** ML7GA1AA **Matrix.....:** WATER
MB Lot-Sample #: F1I010000-011

Prep Date.....: 08/31/11 **Analysis Time..:** 19:26
Analysis Date..: 08/31/11 **Prep Batch #...:** 1244011
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	98	(85 - 120)
Dibromofluoromethane	99	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	97	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H240000-076 **Prep Batch #...:** 1236076						
Uranium	ND	1	ug/L	SW846 6020A	08/24-08/26/11	ML0JG1AA
		Dilution Factor: 1				
		Analysis Time..: 06:16				
MB Lot-Sample #: F1H240000-078 **Prep Batch #...:** 1236078						
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AD
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AU
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AA
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Barium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AE
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AF
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AH
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Calcium	ND	1000	ug/L	SW846 6010C	08/24-08/27/11	ML0JL1AG
		Dilution Factor: 1				
		Analysis Time..: 16:03				
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AK
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AJ
		Dilution Factor: 1				
		Analysis Time..: 00:51				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H230407 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AL
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Iron	ND	100	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AM
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AT
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Magnesium	ND	1000	ug/L	SW846 6010C	08/24-08/27/11	ML0JL1AN
		Dilution Factor: 1				
		Analysis Time..: 16:03				
Manganese	ND	15	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AP
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AR
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AV
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1AC
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Sodium	**329 J**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**ML0JL1AQ**
		Dilution Factor: 1				
		Analysis Time..: 16:03				
Strontium	**0.75 J**	**5**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**ML0JL1AW**
		Dilution Factor: 1				
		Analysis Time..: 13:04				
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1A0
		Dilution Factor: 1				
		Analysis Time..: 00:51				
Zinc	ND	20	ug/L	SW846 6010C	08/24-08/28/11	ML0JL1A1
		Dilution Factor: 1				
		Analysis Time..: 00:51				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H300000-041 **Prep Batch #...:** 1242041						
Thallium	ND	20	ug/L	SW846 6010C	08/29-08/31/11	ML43N1AA
		Dilution Factor: 1				
		Analysis Time..: 16:57				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H230407 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: ML2CL1AA		MB Lot-Sample #:	F1H230000-141	
	ND	0.20	mg/L	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 1				
		Analysis Time..: 12:24				
Fluoride		Work Order #: ML2CR1AA		MB Lot-Sample #:	F1H230000-142	
	ND	0.10	mg/L	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 1				
		Analysis Time..: 12:24				
Nitrate		Work Order #: ML2C01AA		MB Lot-Sample #:	F1H230000-143	
	ND	0.020	mg/L	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 1				
		Analysis Time..: 12:24				
Nitrite		Work Order #: ML2C41AA		MB Lot-Sample #:	F1H230000-144	
	ND	0.020	mg/L	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 1				
		Analysis Time..: 12:24				
Phosphate as P, Ortho		Work Order #: ML2C81AA		MB Lot-Sample #:	F1H230000-145	
	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1				
		Analysis Time..: 12:24				
Sulfate		Work Order #: ML2DC1AA		MB Lot-Sample #:	F1H230000-146	
	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 1				
		Analysis Time..: 12:24				
Total Alkalinity		Work Order #: ML51P1AA		MB Lot-Sample #:	F1H300000-085	
	ND	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: ML4AF1AA		MB Lot-Sample #:	F1H260000-124	
	ND	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 Work Order #...: ML3581AC Matrix.....: WATER
LCS Lot-Sample#: F1H250000-192
Prep Date.....: 08/25/11 Analysis Date..: 08/25/11
Prep Batch #...: 1237192 Analysis Time..: 21:20
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
cis-1,3-Dichloropropene	104	(70 - 130)	SW846 8260B
Dibromochloromethane	102	(60 - 135)	SW846 8260B
Vinyl chloride	116	(50 - 145)	SW846 8260B
Bromomethane	153 a	(30 - 145)	SW846 8260B
Chloroethane	120	(60 - 135)	SW846 8260B
Acetone	105	(40 - 140)	SW846 8260B
1,1-Dichloroethene	100	(70 - 130)	SW846 8260B
Methylene chloride	90	(55 - 140)	SW846 8260B
Carbon disulfide	95	(35 - 160)	SW846 8260B
1,1-Dichloroethane	100	(70 - 135)	SW846 8260B
2-Butanone	105	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	98	(85 - 115)	SW846 8260B
Chloroform	99	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	101	(65 - 130)	SW846 8260B
Carbon tetrachloride	101	(65 - 140)	SW846 8260B
1,2-Dichloroethane	97	(70 - 130)	SW846 8260B
Benzene	99	(80 - 120)	SW846 8260B
Trichloroethene	95	(70 - 125)	SW846 8260B
1,2-Dichloropropane	97	(75 - 125)	SW846 8260B
Bromodichloromethane	100	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	100	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	106	(55 - 140)	SW846 8260B
Toluene	107	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	104	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	100	(75 - 125)	SW846 8260B
2-Hexanone	96	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	110	(60 - 135)	SW846 8260B
Chlorobenzene	100	(80 - 120)	SW846 8260B
Bromoform	106	(70 - 130)	SW846 8260B
Ethylbenzene	106	(75 - 125)	SW846 8260B
Styrene	110	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	106	(65 - 130)	SW846 8260B
Tetrachloroethene	99	(45 - 150)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 Work Order #...: ML3581AC Matrix.....: WATER
LCS Lot-Sample#: F1H250000-192

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichlorobenzene	**102**	**(70 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	105	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 **Work Order #...:** ML7GA1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: F1I010000-011 ML7GA1AD-LCSD
Prep Date.....: 08/31/11 **Analysis Date..:** 09/01/11
Prep Batch #...: 1244011 **Analysis Time..:** 04:21
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethane	108	(70 - 135)			SW846 8260B
	108	(70 - 135)	0.37	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	105	(85 - 115)			SW846 8260B
	107	(85 - 115)	2.0	(0-20)	SW846 8260B
1,1,1-Trichloroethane	107	(65 - 130)			SW846 8260B
	110	(65 - 130)	2.8	(0-20)	SW846 8260B
Carbon tetrachloride	107	(65 - 140)			SW846 8260B
	112	(65 - 140)	4.2	(0-20)	SW846 8260B
Tetrachloroethene	105	(45 - 150)			SW846 8260B
	113	(45 - 150)	7.0	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	96	(85 - 120)
	102	(85 - 120)
Dibromofluoromethane	98	(85 - 115)
	95	(85 - 115)
1,2-Dichloroethane-d4	96	(70 - 120)
	91	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)
	103	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H240000-076 **Prep Batch #...:** 1236076					
Uranium	94	(80 - 120)	SW846 6020A	08/24-08/26/11	ML0JG1AC
		Dilution Factor: 1		Analysis Time..: 06:22	
LCS Lot-Sample#: F1H240000-078 **Prep Batch #...:** 1236078					
Arsenic	103	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1A2
		Dilution Factor: 1		Analysis Time..: 00:57	
Silver	93	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1A3
		Dilution Factor: 1		Analysis Time..: 00:57	
Aluminum	108	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1A4
		Dilution Factor: 1		Analysis Time..: 00:57	
Barium	109	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1A5
		Dilution Factor: 1		Analysis Time..: 00:57	
Beryllium	116	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1A6
		Dilution Factor: 1		Analysis Time..: 00:57	
Calcium	105	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JL1A7
		Dilution Factor: 1		Analysis Time..: 16:10	
Cadmium	108	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1A8
		Dilution Factor: 1		Analysis Time..: 00:57	
Cobalt	104	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1A9
		Dilution Factor: 1		Analysis Time..: 00:57	
Chromium	104	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CA
		Dilution Factor: 1		Analysis Time..: 00:57	
Copper	103	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CC
		Dilution Factor: 1		Analysis Time..: 00:57	
Iron	109	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CD
		Dilution Factor: 1		Analysis Time..: 00:57	
Magnesium	97	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JL1CE
		Dilution Factor: 1		Analysis Time..: 16:10	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	107	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CF
		Dilution Factor: 1	Analysis Time..: 00:57		
Sodium	103	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JL1CG
		Dilution Factor: 1	Analysis Time..: 16:10		
Nickel	104	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CH
		Dilution Factor: 1	Analysis Time..: 00:57		
Lead	104	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CJ
		Dilution Factor: 1	Analysis Time..: 00:57		
Antimony	105	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CK
		Dilution Factor: 1	Analysis Time..: 00:57		
Selenium	105	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CL
		Dilution Factor: 1	Analysis Time..: 00:57		
Strontium	105	(80 - 120)	SW846 6010C	08/24-08/30/11	ML0JL1CM
		Dilution Factor: 1	Analysis Time..: 13:10		
Vanadium	105	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CP
		Dilution Factor: 1	Analysis Time..: 00:57		
Zinc	113	(80 - 120)	SW846 6010C	08/24-08/28/11	ML0JL1CQ
		Dilution Factor: 1	Analysis Time..: 00:57		
LCS Lot-Sample#: F1H300000-041 **Prep Batch #...:** 1242041					
Thallium	103	(80 - 120)	SW846 6010C	08/29-08/31/11	ML43N1AC
		Dilution Factor: 1	Analysis Time..: 17:04		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230407 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: ML2CL1AC	LCS Lot-Sample#: F1H230000-141		
	92	(90 - 110)	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 1	Analysis Time..: 12:07		
Fluoride		Work Order #: ML2CR1AC	LCS Lot-Sample#: F1H230000-142		
	95	(90 - 110)	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 1	Analysis Time..: 12:07		
Nitrate		Work Order #: ML2C01AC	LCS Lot-Sample#: F1H230000-143		
	95	(90 - 110)	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 1	Analysis Time..: 12:07		
Nitrite		Work Order #: ML2C41AC	LCS Lot-Sample#: F1H230000-144		
	101	(90 - 110)	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 1	Analysis Time..: 12:07		
Phosphate as P, Ortho		Work Order #: ML2C81AC	LCS Lot-Sample#: F1H230000-145		
	96	(90 - 110)	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1	Analysis Time..: 12:07		
Sulfate		Work Order #: ML2DC1AC	LCS Lot-Sample#: F1H230000-146		
	96	(90 - 110)	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 1	Analysis Time..: 12:07		
Total Alkalinity		Work Order #: ML51P1AC	LCS Lot-Sample#: F1H300000-085		
	94	(90 - 110)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: ML51P1AD	LCS Lot-Sample#: F1H300000-085		
	94	(90 - 110)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: ML4AF1AC	LCS Lot-Sample#: F1H260000-124		
	96	(90 - 113)	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 Work Order #...: MLXMN1C4-MS Matrix.....: WATER
MS Lot-Sample #: F1H230464-002 MLXMN1C5-MSD
Date Sampled...: 08/19/11 09:15 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 01:37
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	96	(70 - 130)			SW846 8260B
	99	(70 - 130)	2.1	(0-20)	SW846 8260B
Dibromochloromethane	105	(60 - 135)			SW846 8260B
	102	(60 - 135)	2.0	(0-20)	SW846 8260B
Vinyl chloride	106	(50 - 145)			SW846 8260B
	110	(50 - 145)	4.4	(0-20)	SW846 8260B
Bromomethane	144	(30 - 145)			SW846 8260B
	137	(30 - 145)	5.1	(0-20)	SW846 8260B
Chloroethane	117	(60 - 135)			SW846 8260B
	120	(60 - 135)	2.1	(0-20)	SW846 8260B
Acetone	103	(40 - 140)			SW846 8260B
	102	(40 - 140)	0.97	(0-20)	SW846 8260B
1,1-Dichloroethene	108	(70 - 130)			SW846 8260B
	106	(70 - 130)	2.0	(0-20)	SW846 8260B
Methylene chloride	93	(55 - 140)			SW846 8260B
	92	(55 - 140)	0.97	(0-20)	SW846 8260B
Carbon disulfide	105	(35 - 160)			SW846 8260B
	104	(35 - 160)	0.57	(0-20)	SW846 8260B
1,1-Dichloroethane	103	(70 - 135)			SW846 8260B
	102	(70 - 135)	1.3	(0-20)	SW846 8260B
2-Butanone	100	(30 - 150)			SW846 8260B
	104	(30 - 150)	4.7	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	99	(85 - 115)			SW846 8260B
	100	(85 - 115)	0.90	(0-20)	SW846 8260B
Chloroform	100	(65 - 135)			SW846 8260B
	102	(65 - 135)	1.9	(0-20)	SW846 8260B
1,1,1-Trichloroethane	100	(65 - 130)			SW846 8260B
	103	(65 - 130)	2.8	(0-20)	SW846 8260B
Carbon tetrachloride	98	(65 - 140)			SW846 8260B
	98	(65 - 140)	0.01	(0-20)	SW846 8260B
1,2-Dichloroethane	100	(70 - 130)			SW846 8260B
	101	(70 - 130)	1.2	(0-20)	SW846 8260B
Benzene	102	(80 - 120)			SW846 8260B
	101	(80 - 120)	0.29	(0-20)	SW846 8260B
Trichloroethene	95	(70 - 125)			SW846 8260B
	97	(70 - 125)	1.4	(0-20)	SW846 8260B
1,2-Dichloropropane	101	(75 - 125)			SW846 8260B
	102	(75 - 125)	0.59	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230407 **Work Order #...:** MLXMN1C4-MS **Matrix.....:** WATER
MS Lot-Sample #: F1H230464-002 MLXMN1C5-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	100	(75 - 120)			SW846 8260B
	100	(75 - 120)	0.19	(0-20)	SW846 8260B
1,1,2-Trichloroethane	105	(75 - 125)			SW846 8260B
	103	(75 - 125)	2.3	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	102	(55 - 140)			SW846 8260B
	103	(55 - 140)	1.5	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	106	(75 - 120)	0.09	(0-20)	SW846 8260B
1,3-Dichlorobenzene	100	(75 - 125)			SW846 8260B
	104	(75 - 125)	3.7	(0-20)	SW846 8260B
1,4-Dichlorobenzene	99	(75 - 125)			SW846 8260B
	100	(75 - 125)	1.9	(0-20)	SW846 8260B
2-Hexanone	101	(55 - 130)			SW846 8260B
	93	(55 - 130)	8.2	(0-20)	SW846 8260B
4-Methyl-2-pentanone	112	(60 - 135)			SW846 8260B
	111	(60 - 135)	0.80	(0-20)	SW846 8260B
Chlorobenzene	101	(80 - 120)			SW846 8260B
	102	(80 - 120)	0.78	(0-20)	SW846 8260B
Bromoform	106	(70 - 130)			SW846 8260B
	104	(70 - 130)	1.9	(0-20)	SW846 8260B
Ethylbenzene	106	(75 - 125)			SW846 8260B
	106	(75 - 125)	0.28	(0-20)	SW846 8260B
Styrene	112	(65 - 135)			SW846 8260B
	112	(65 - 135)	0.17	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	104	(65 - 130)			SW846 8260B
	106	(65 - 130)	1.1	(0-20)	SW846 8260B
Tetrachloroethene	98	(45 - 150)			SW846 8260B
	100	(45 - 150)	1.8	(0-20)	SW846 8260B
1,2-Dichlorobenzene	103	(70 - 120)			SW846 8260B
	105	(70 - 120)	1.6	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
	108	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
	108	(85 - 115)
1,2-Dichloroethane-d4	102	(70 - 120)
	106	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)
	100	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER
Date Sampled...: 08/22/11 11:05 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H230407-002 **Prep Batch #...:** 1236076							
Uranium	98	(80 - 120)			SW846 6020A	08/24-08/26/11	MLW8D1CN
	99	(80 - 120)	0.38	(0-20)	SW846 6020A	08/24-08/26/11	MLW8D1CP
		Dilution Factor: 1					
		Analysis Time..: 06:49					
MS Lot-Sample #: F1H230407-002 **Prep Batch #...:** 1236078							
Aluminum	109	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1CV
	108	(80 - 120)	0.51	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1CW
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Antimony	105	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1A9
	104	(80 - 120)	0.51	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1CA
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Arsenic	104	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1CQ
	104	(80 - 120)	0.23	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1CR
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Barium	109	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1CX
	108	(80 - 120)	0.70	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1C0
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Beryllium	113	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1C1
	114	(80 - 120)	0.70	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1C2
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Cadmium	103	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1C5
	104	(80 - 120)	0.67	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1C6
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Calcium	119	(80 - 120)			SW846 6010C	08/24-08/27/11	MLW8D1C3
	113	(80 - 120)	0.56	(0-20)	SW846 6010C	08/24-08/27/11	MLW8D1C4
		Dilution Factor: 10					
		Analysis Time..: 18:30					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER
Date Sampled...: 08/22/11 11:05 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	102	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1C9
	102	(80 - 120)	0.25	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1DA
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Cobalt	99	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1C7
	99	(80 - 120)	0.07	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1C8
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Copper	104	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1DC
	103	(80 - 120)	0.73	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1DD
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Iron	105	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1DE
	106	(80 - 120)	0.33	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1DF
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Lead	100	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1A7
	100	(80 - 120)	0.74	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1A8
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Magnesium	96	(80 - 120)			SW846 6010C	08/24-08/27/11	MLW8D1DG
	97	(80 - 120)	0.31	(0-20)	SW846 6010C	08/24-08/27/11	MLW8D1DH
		Dilution Factor: 1					
		Analysis Time..: 16:48					
Manganese	104	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1DJ
	104	(80 - 120)	0.12	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1DK
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Nickel	97	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1A5
	98	(80 - 120)	0.49	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1A6
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Selenium	104	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1CC
	105	(80 - 120)	0.63	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1CD
		Dilution Factor: 1					
		Analysis Time..: 01:36					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER
Date Sampled...: 08/22/11 11:05 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	93	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1CT
	93	(80 - 120)	0.27	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1CU
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Sodium	98	(80 - 120)			SW846 6010C	08/24-08/27/11	MLW8D1DL
	99	(80 - 120)	0.25	(0-20)	SW846 6010C	08/24-08/27/11	MLW8D1DM
		Dilution Factor: 1					
		Analysis Time..: 16:48					
Strontium	130 N	(80 - 120)			SW846 6010C	08/24-08/30/11	MLW8D1CE
	132 N	(80 - 120)	1.6	(0-20)	SW846 6010C	08/24-08/30/11	MLW8D1CF
		Dilution Factor: 10					
		Analysis Time..: 13:48					
Vanadium	104	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1CJ
	104	(80 - 120)	0.07	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1CK
		Dilution Factor: 1					
		Analysis Time..: 01:36					
Zinc	111	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW8D1CL
	111	(80 - 120)	0.08	(0-20)	SW846 6010C	08/24-08/28/11	MLW8D1CM
		Dilution Factor: 1					
		Analysis Time..: 01:36					
MS Lot-Sample #: F1H230407-002 **Prep Batch #...:** 1242041							
Thallium	99	(80 - 120)			SW846 6010C	08/29-08/31/11	MLW8D1DN
	99	(80 - 120)	0.10	(0-20)	SW846 6010C	08/29-08/31/11	MLW8D1DP
		Dilution Factor: 1					
		Analysis Time..: 17:29					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER
Date Sampled...: 08/22/11 11:00 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H230407-007 **Prep Batch #...:** 1236076							
Uranium	97	(80 - 120)			SW846 6020A	08/24-08/26/11	MLW9L1DD
	96	(80 - 120)	1.5	(0-20)	SW846 6020A	08/24-08/26/11	MLW9L1DE
		Dilution Factor: 1					
		Analysis Time..: 07:49					
MS Lot-Sample #: F1H230407-007 **Prep Batch #...:** 1236078							
Aluminum	108	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1DR
	109	(80 - 120)	1.0	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1DT
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Antimony	103	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1C0
	105	(80 - 120)	1.8	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1C1
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Arsenic	102	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1DM
	105	(80 - 120)	2.8	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1DN
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Barium	108	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1DU
	108	(80 - 120)	0.35	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1DV
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Beryllium	112	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1DW
	114	(80 - 120)	1.6	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1DX
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Cadmium	102	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1D2
	104	(80 - 120)	2.8	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1D3
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Calcium	14 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLW9L1D0
	121 N	(80 - 120)	10	(0-20)	SW846 6010C	08/24-08/27/11	MLW9L1D1
		Dilution Factor: 10					
		Analysis Time..: 19:28					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER
Date Sampled...: 08/22/11 11:00 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	100	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1CF
	102	(80 - 120)	1.8	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1CG
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Cobalt	98	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1D4
	100	(80 - 120)	2.1	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1D5
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Copper	103	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1CH
	103	(80 - 120)	0.24	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1CJ
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Iron	104	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1CK
	107	(80 - 120)	2.1	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1CL
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Lead	98	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1CW
	101	(80 - 120)	2.7	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1CX
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Magnesium	93	(80 - 120)			SW846 6010C	08/24-08/27/11	MLW9L1CM
	96	(80 - 120)	1.0	(0-20)	SW846 6010C	08/24-08/27/11	MLW9L1CN
		Dilution Factor: 1					
		Analysis Time..: 17:46					
Manganese	102	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1CP
	105	(80 - 120)	1.8	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1CQ
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Nickel	95	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1CU
	99	(80 - 120)	2.7	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1CV
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Selenium	102	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1C2
	106	(80 - 120)	3.1	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1C3
		Dilution Factor: 1					
		Analysis Time..: 02:34					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230407 **Matrix.....:** WATER
Date Sampled...: 08/22/11 11:00 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	92	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1DP
	93	(80 - 120)	0.83	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1DQ
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Sodium	94	(80 - 120)			SW846 6010C	08/24-08/27/11	MLW9L1CR
	95	(80 - 120)	0.22	(0-20)	SW846 6010C	08/24-08/27/11	MLW9L1CT
		Dilution Factor: 1					
		Analysis Time..: 17:46					
Strontium	99	(80 - 120)			SW846 6010C	08/24-08/30/11	MLW9L1C4
	97	(80 - 120)	1.6	(0-20)	SW846 6010C	08/24-08/30/11	MLW9L1C5
		Dilution Factor: 10					
		Analysis Time..: 14:45					
Vanadium	103	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1C8
	104	(80 - 120)	1.2	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1C9
		Dilution Factor: 1					
		Analysis Time..: 02:34					
Zinc	109	(80 - 120)			SW846 6010C	08/24-08/28/11	MLW9L1DA
	112	(80 - 120)	2.5	(0-20)	SW846 6010C	08/24-08/28/11	MLW9L1DC
		Dilution Factor: 1					
		Analysis Time..: 02:34					

MS Lot-Sample #: F1H230407-007 **Prep Batch #...:** 1242041

Thallium	99	(80 - 120)			SW846 6010C	08/29-08/31/11	MLW9L1EK
	99	(80 - 120)	0.06	(0-20)	SW846 6010C	08/29-08/31/11	MLW9L1EL
		Dilution Factor: 1					
		Analysis Time..: 18:27					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230407 **Matrix.....:** WATER
Date Sampled...: 08/22/11 11:00 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLW9L1DF		MS Lot-Sample #: F1H230407-007	
	107	(90 - 110)	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 5	Analysis Time..: 02:02		
Fluoride		Work Order #...: MLW9L1DG		MS Lot-Sample #: F1H230407-007	
	103	(90 - 110)	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 5	Analysis Time..: 02:02		
Nitrate		Work Order #...: MLW9L1DH		MS Lot-Sample #: F1H230407-007	
	106	(90 - 110)	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 1	Analysis Time..: 01:46		
Nitrite		Work Order #...: MLW9L1DJ		MS Lot-Sample #: F1H230407-007	
	55 N	(90 - 110)	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 5	Analysis Time..: 02:02		
Phosphate as P, Ortho		Work Order #...: MLW9L1DK		MS Lot-Sample #: F1H230407-007	
	56 N	(90 - 110)	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1	Analysis Time..: 01:46		
Sulfate		Work Order #...: MLW9L1D6		MS Lot-Sample #: F1H230407-007	
	104	(90 - 110)	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 5	Analysis Time..: 02:02		
Total Alkalinity		Work Order #...: MLW9L1EM		MS Lot-Sample #: F1H230407-007	
	98	(80 - 120)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230407 **Work Order #...:** MLW9L-SMP MLW9L-DUP **Matrix.....:** WATER

Date Sampled...: 08/22/11 11:00 **Date Received..:** 08/23/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H230407-007		
	400	400	mg/L	0.0	(0-15)	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1				Analysis Time..: 00:00		
Chloride						SD Lot-Sample #: F1H230407-007		
	16.6	16.7	mg/L	0.10	(0-20)	MCAWW 300.0A	08/24/11	1235141
		Dilution Factor: 5				Analysis Time..: 02:02		
Fluoride						SD Lot-Sample #: F1H230407-007		
	2.9	3.0	mg/L	1.2	(0-20)	MCAWW 300.0A	08/24/11	1235142
		Dilution Factor: 5				Analysis Time..: 02:02		
Nitrate						SD Lot-Sample #: F1H230407-007		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/24/11	1235143
		Dilution Factor: 1				Analysis Time..: 01:46		
Nitrite						SD Lot-Sample #: F1H230407-007		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/24/11	1235144
		Dilution Factor: 5				Analysis Time..: 02:02		
Phosphate as P, Ortho						SD Lot-Sample #: F1H230407-007		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/24/11	1235145
		Dilution Factor: 1				Analysis Time..: 01:46		
Sulfate						SD Lot-Sample #: F1H230407-007		
	73.2	73.7	mg/L	0.73	(0-20)	MCAWW 300.0A	08/24/11	1235146
		Dilution Factor: 5				Analysis Time..: 02:02		
Total Alkalinity						SD Lot-Sample #: F1H230407-007		
	254	254	mg/L	0.16	(0-20)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1				Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW600D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230407-001
Work Order: MLW8C
Matrix: WATER

Date Collected: 08/22/11 0900
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1236047**	**Yld % 63**
Uranium 234	1.28		0.26	0.10	0.07	08/24/11	08/29/11
Uranium 235/236	0.050	U	0.053	0.100	0.060	08/24/11	08/29/11
Uranium 238	0.93		0.21	0.10	0.05	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230407-002
Work Order: MLW8D
Matrix: WATER

Date Collected: 08/22/11 1105
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1236047		Yld % 69
Uranium 234	2.40		0.36	0.10	0.06	08/24/11	08/29/11
Uranium 235/236	0.112		0.074	0.100	0.052	08/24/11	08/29/11
Uranium 238	2.21		0.34	0.10	0.04	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230407-003
Work Order: MLW8E
Matrix: WATER

Date Collected: 08/22/11 1230
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1236047	Yld % 78
Uranium 234	1.06		0.22	0.10	0.06	08/24/11	08/29/11
Uranium 235/236	0.140		0.082	0.100	0.060	08/24/11	08/29/11
Uranium 238	1.36		0.25	0.10	0.05	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230407-004
Work Order: MLW8F
Matrix: WATER

Date Collected: 08/22/11 1345
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1236047		Yld % 72
Uranium 234	1.06		0.22	0.10	0.06	08/24/11	08/29/11
Uranium 235/236	0.012	U	0.024	0.100	0.032	08/24/11	08/29/11
Uranium 238	0.86		0.20	0.10	0.06	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02M600D0001

Radiochemistry

Lab Sample ID: F1H230407-006
Work Order: MLW88
Matrix: WATER

Date Collected: 08/22/11 0900
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1236047		Yld % 66
Uranium 234	0.92		0.21	0.10	0.07	08/24/11	08/29/11
Uranium 235/236	0.032	U	0.046	0.100	0.069	08/24/11	08/29/11
Uranium 238	0.78		0.19	0.10	0.08	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW50001

Radiochemistry

Lab Sample ID: F1H230407-007
Work Order: MLW9L
Matrix: WATER

Date Collected: 08/22/11 1100
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1236047	Yld % 64
Uranium 234	2.36		0.37	0.10	0.07	08/24/11	08/29/11
Uranium 235/236	0.098		0.072	0.100	0.057	08/24/11	08/29/11
Uranium 238	2.06		0.34	0.10	0.06	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW120001

Radiochemistry

Lab Sample ID: F1H230407-008
Work Order: MLW9Q
Matrix: WATER

Date Collected: 08/22/11 1230
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1236152	Yld % 76
Uranium 234	1.49		0.26	0.10	0.05	08/24/11	08/29/11
Uranium 235/236	0.136		0.079	0.100	0.031	08/24/11	08/29/11
Uranium 238	1.43		0.26	0.10	0.04	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW30001

Radiochemistry

Lab Sample ID: F1H230407-009
Work Order: MLW9X
Matrix: WATER

Date Collected: 08/22/11 1345
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1236152	Yld % 76
Uranium 234	0.88		0.20	0.10	0.07	08/24/11	08/29/11
Uranium 235/236	0.040	U	0.047	0.100	0.061	08/24/11	08/29/11
Uranium 238	0.92		0.20	0.10	0.05	08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H230407
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1236152		Yld % 73		F1H240000-152B
Uranium 234	-0.0072	U	0.0084	0.100	0.057		08/24/11	08/29/11
Uranium 235/236	0.0	U	0.012	0.100	0.033		08/24/11	08/29/11
Uranium 238	0.01	U	0.036	0.100	0.076		08/24/11	08/29/11
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1236047		Yld % 82		F1H240000-047B
Uranium 234	0.015	U	0.032	0.100	0.059		08/24/11	08/29/11
Uranium 235/236	-0.0027	U	0.0054	0.100	0.049		08/24/11	08/29/11
Uranium 238	-0.0043	U	0.0061	0.100	0.046		08/24/11	08/29/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F1H230407
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ+/-)	% Yld	% Rec	QC Control Limits	Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**	**A-01-R MOD**				**Lab Sample ID F1H240000-047C**		
Uranium 234		3.26	3.11	0.42	84	95	(76 - 136)		
	Spk 2	3.26	3.12	0.41	85	96	(76 - 136)	0.4	%RPD
Uranium 238		3.39	3.47	0.45	84	102	(76 - 134)		
	Spk 2	3.39	3.36	0.43	85	99	(76 - 134)	3	%RPD
		Batch #:	1236047		**Analysis Date:**		08/29/11		
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**	**A-01-R MOD**				**Lab Sample ID F1H240000-152C**		
Uranium 234		3.26	3.26	0.42	87	100	(76 - 136)		
	Spk 2	3.26	3.40	0.43	85	104	(76 - 136)	4	%RPD
Uranium 238		3.39	3.40	0.44	87	100	(76 - 134)		
	Spk 2	3.39	4.08	0.49	85	120	(76 - 134)	18	%RPD
		Batch #:	1236152		**Analysis Date:**		08/29/11		

NOTE (S) F1H230407

Calculations are performed before rounding to avoid round-off error in calculated results

F1H230407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R4,5

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 9

Date Received: 2011-08-23

Analytical Due Date: 2011-08-31

Report Due Date: 2011-09-02

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A02MW600D0001 DISSOLVED			2011-08-22 / 900	MLW8C	WATER

SAMPLE COMMENTS:

SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A02MW50001 DISSOLVED			2011-08-22 / 1105	MLW8D	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H230407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5,2-84

Project Manager: LMF
Quote #: 89251 SDG:
Project: Y40415 Guterl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 9

Date Received: 2011-08-23
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06
	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
D	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4 X	PROT: A	WRK LOC	06

F1H230407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5,2-84

Project Manager: LMF
Project: Y40415
PO#: 697886
Client: 522706 Shaw Environmental & Infrastructure Inc

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin

Date Received: 2011-08-23
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: B Standard Report
EDD Code: 00

#SMPS in LOT: 9

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

D	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A02MW120001 DISSOLVED			2011-08-22 / 1230	MLW8E	WATER

SAMPLE COMMENTS:

	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R4,5

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 9

Date Received: 2011-08-23

Analytical Due Date: 2011-08-31

Report Due Date: 2011-09-02

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	A02MW30001 DISSOLVED			2011-08-22 / 1345	MLW8F	WATER

SAMPLE COMMENTS:

CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-23

Project: Y40415
Gutert Steel
Analytical Due Date: 2011-08-31

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-09-02

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 9
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE # 5 | CLIENT SAMPLE ID: TRIP BLANK #5 | Site ID | Client Matrix | DATE/TIME SAMPLED: 2011-08-22 / 0 | WORKORDER: MLW86 | WATER

SAMPLE COMMENTS:

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N

SAMPLE # 6 | CLIENT SAMPLE ID: A02M600D0001 | Site ID | Client Matrix | DATE/TIME SAMPLED: 2011-08-22 / 900 | WORKORDER: MLW88 | WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5,2-84

Project Manager: LMF
Quote #: 89251 SDG:
Project: Y40415 Guterl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 9

Date Received: 2011-08-23
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MDD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	A02MW50001			2011-08-22 / 1100	MLW9L	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H230407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5,2-84

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-23

Project: Y40415
Guterl Steel
Analytical Due Date: 2011-08-31

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-09-02

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 9
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
	XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
	XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
	XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
	XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
	XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
	XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
	XX	DQ	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
	XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
	XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
D	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		

F1H230407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5,2-84

Project Manager: LMF
Quote #: 89251 SDG:
Date Received: 2011-08-23

Project: Y40415
Guterl Steel
Analytical Due Date: 2011-08-31

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-09-02

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 9
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	XX	QK	SW846 8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
S	XX	C8	MCAW 300.0A W	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	C9	MCAW 300.0A W	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	CX	MCAW 300.0A W	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	CY	MCAW 300.0A W	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	DO	MCAW 300.0A W	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	GO	MCAW 300.0A W	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	AK	MCAW 160.1 W	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
X	XX	C8	MCAW 300.0A W	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	C9	MCAW 300.0A W	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	CX	MCAW 300.0A W	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	CY	MCAW 300.0A W	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	DO	MCAW 300.0A W	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	GO	MCAW 300.0A W	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H230407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5,2-84

Project Manager: LMF
Project: Y40415
PO#: 697886
Client: 522706 Shaw Environmental & Infrastructure Inc

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin

#SMPS In LOT: 9

Date Received: 2011-08-23
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: B Standard Report
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

X	XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
X	XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	A02MW120001			2011-08-22 / 1230	MLW9Q	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

CLIENT ANALYSIS SUMMARY

Storage Loc: R4,5,2-84

Project Manager: LMF | Quote #: 89251 | SDG:

Project: Y40415 | Guterl Steel

PO#: 697886 | Report to: Kevin Cronin

Client: 522706 | Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-23

Analytical Due Date: 2011-08-31

Report Due Date: 2011-09-02

Report Type: B Standard Report

EDD Code: 00

#SMPS in LOT: 9

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	A02MW30001			2011-08-22 / 1345	MLW9X	WATER

SAMPLE COMMENTS:

NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

F1H230407

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R4,5,2-84

Project Manager: LMF
Quote #: 89251 SDG:
Project: Y40415 Guterl Steel
PO#: 697886 Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-23
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: B Standard Report
EDD Code: 00
#SMPS In LOT: 9

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

estAmerica St. Louis
'15 Rider Trail North
th City, MO 63045
ne 314.298.8566 fax 314.298.8757

cur 199

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/22/2011	COC No: 013
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	Analysis Turnaround Time			Job No. 140416.09020100
cinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below			
3) 782-4807 FAX	☐ 2 weeks			SDG No.
ject Name: Former Guterl Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
) #	☐ 1 day			

Sample Identification (label read)	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
2MW600D0001 A05BMW600D0001	8/22/2011	0900	Grab	GW	7	X		X	X	X	X	X	X						2x
2MW50001 8.23.11	8/22/2011	1105	Grab	GW	10	X		X	X	X	X	X	X	X	3x40, 500P, 4xLP, 250P				
3MW50001MS	8/22/2011	1105	Grab	GW	10	X		X	X	X	X	X	X	X					
3MW50001MSD	8/22/2011	1105	Grab	GW	10	X		X	X	X	X	X	X	X					
2MW120001	8/22/2011	1230	Grab	GW	10	X		X	X	X	X	X	X	X					KCC
2MW30001	8/22/2011	1345	Grab	GW	10	X		X	X	X	X	X	X	X					
Blank #5	8/22/2011	--	TB	--	1									X	1x40				

servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

sible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

cial Instructions/QC Requirements & Comments:

inquished by: [signature]	Company: Shaw E & I Inc.	Date/Time: 8/22/11 16:40	Received by: [signature]	Company: BFLO	Date/Time: 08-22-11 16:40
inquished by: [signature]	Company: BFLO	Date/Time: 08-22-11 17:05	Received by: [signature]	Company: BFLO	Date/Time: 8-22-11 17:05
inquished by: [signature]	Company: BFLO	Date/Time: 8/22/11 1700	Received by: [signature]	Company: TASL	Date/Time: 8.23.11 0905

F1H230447

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): FH230407 TestAmerica St. Louis

CUR Form #: 1 9 9

CONDITION UPON RECEIPT FORM

Client: Shaw

Quote No: 89151

COC/RFA No: 013

Initiated By: SW Date: 8.23.11 Time: 0905

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*				Sample Temperature (s):**			
1.	4485 0258 4877	6.		1.	ambient	6.	
2.	4866	7.		2.	↓	7.	
3.	4855	8.		3.		8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y N (N/A)	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	Y (N) N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Sample 1. we rec'd. A05BMW600D0001. The QC bottles read "A03" but the sample reads "A02."

A03 Should be A02 MS/MSD[2] Please use COC A0200 LMF 8/23/11 SW 8.23.11

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 8/25/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guterl Steel

Lot #: F1H230464

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

September 7, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H230464

This report contains the analytical results for the 14 samples received under chain of custody by TestAmerica in St. Louis on August 23, 2011. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances

The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1237192
The CCV recoveries are outside the upper QC limit (greater than 20% D) for Bromomethane, Chloroethane, Trichlorofluoromethane and 1,2,3-Trichloropropane indicating a potential high bias for those analytes in the samples associated with this CCV. These analytes were not detected above the reporting limit or were not target analytes in the associated samples.

The LCS recovery for Bromomethane is outside the upper QC limit, indicating a potential positive bias for that analyte. This analyte was not observed above the reporting limit in the associated samples; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1H230464 (2): A03MW703DD0001
F1H230464 (4): A02MW40001
F1H230464 (6): A04AMW701DD0001
F1H230464 (8): TRIP BLANK #4

Batch: 1244011
The samples were analyzed at a dilution based upon laboratory screening information. The reporting limit has been adjusted for the dilution.

The MS/MSD analysis was not performed with this batch; the associated samples are dilutions only. The MS/MSD was performed with the original analyses. An LCS/LCSD was performed to demonstrate accuracy and replicate precision.

The following compounds were removed from the initial calibration lowest point due to poor response. Ethyl ether, Methyl acetate, Acetontrile, Ethyl acetate, 2-Butanone, Isobutanol, 1,4-dioxane, 2-Nitropropane and Cyclohexanone. Addtionally, Acetone was removed from the lowest 2 points.

n-Propylbenzene and sec-Butylbenzene were removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration.

The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

Affected Samples:
F1H230464 (4): A02MW40001

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1236079
There was insufficient digestate volume for analysis of thallium. Samples have been reprepared and the re-extract batch is 1242042.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

The serial dilution for aluminum is outside the established QC limits, indicating matrix interference.

1236079-F1H230464-002
The MS and MSD recovery for calcium and sodium are outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

1236079-F1H230464-010
The MS and MSD recovery for calcium, magnesium and sodium are outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

The MS and MSD recovries for strontium are outside the established QC limits. The RPD is within method acceptance criteria indicating matrix interference. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (2): A03MW703DD0001
F1H230464 (3): A03MW16D0001
F1H230464 (4): A02MW40001
F1H230464 (5): A03MW9004
F1H230464 (6): A04AMW701DD0001
F1H230464 (9): A03MW607D0001 DISSOLVED
F1H230464 (10): A03MW703DD0001 DISSOLVED
F1H230464 (11): A03MW16D0001 DISSOLVED
F1H230464 (12): A02MW40001 DISSOLVED
F1H230464 (13): A03MW9004 DISSOLVED
F1H230464 (14): A04AMW701DD0001 DISSOLVED

The concentration of strontium in the CCB is greater than 2 times the MDL. The samples associated with this CCB exhibit concentrations greater than ten times the concentrations observed in the CCB.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (2): A03MW703DD0001
F1H230464 (6): A04AMW701DD0001
F1H230464 (9): A03MW607D0001 DISSOLVED
F1H230464 (10): A03MW703DD0001 DISSOLVED
F1H230464 (14): A04AMW701DD0001 DISSOLVED

Alkalinity (MCAWW 310.1)

Batch: 1242085
The MS recovery was outside the established QC limits. The analyte concentration in the original sample is greater than four times the amounted spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:
F1H230464 (2): A03MW703DD0001

Chloride (MCAWW 300.0A)

Batch: 1235169
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (2): A03MW703DD0001
F1H230464 (3): A03MW16D0001
F1H230464 (4): A02MW40001
F1H230464 (5): A03MW9004
F1H230464 (6): A04AMW701DD0001
F1H230464 (7): A04BMW707DD0001

Sulfate (MCAWW 300.0A)

Batch: 1235174
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (2): A03MW703DD0001
F1H230464 (3): A03MW16D0001
F1H230464 (4): A02MW40001
F1H230464 (5): A03MW9004
F1H230464 (6): A04AMW701DD0001
F1H230464 (7): A04BMW707DD0001

Fluoride (MCAWW 300.0A)

Batch: 1235170
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Fluoride are attributed to matrix interference.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (2): A03MW703DD0001
F1H230464 (3): A03MW16D0001
F1H230464 (4): A02MW40001
F1H230464 (5): A03MW9004
F1H230464 (6): A04AMW701DD0001
F1H230464 (7): A04BMW707DD0001

The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (3): A03MW16D0001
F1H230464 (5): A03MW9004

The following samples were reported ND at dilution, due to high concentrations of interfering anions, which masked the retention times of these target analytes in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230464 (7): A04BMW707DD0001

Nitrate (MCAWW 300.0A)

Batch: 1235171
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230464 (7): A04BMW707DD0001

Orthophosphate as P (MCAWW 300.0A)

Batch: 1235173
The following samples were reported ND at dilution, due to high concentrations of interfering anions, which masked the retention times of these target analytes in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H230464 (7): A04BMW707DD0001

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (2): A03MW703DD0001
F1H230464 (3): A03MW16D0001
F1H230464 (4): A02MW40001
F1H230464 (5): A03MW9004
F1H230464 (6): A04AMW701DD0001
F1H230464 (7): A04BMW707DD0001

Nitrite (MCAWW 300.0A)

Batch: 1235172
The following samples were reported ND at dilution, due to high concentrations of interfering anions, which masked the retention times of these target analytes in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrite are attributed to matrix interference.

Affected Samples:
F1H230464 (1): A03MW607D001
F1H230464 (2): A03MW703DD0001
F1H230464 (3): A03MW16D0001
F1H230464 (4): A02MW40001
F1H230464 (5): A03MW9004
F1H230464 (6): A04AMW701DD0001
F1H230464 (7): A04BMW707DD0001

Fiterable Resiue (TDS) (MCAWW 160.1)

Batch: 1236026
The sample was analyzed at a dilution based on high concentrations of target analytes. The reporting limit has been adjusted accordingly.

Affected Samples:
F1H230464 (7): A04BMW707DD0001

There were no other nonconformances or observations noted with any analysis on this lot.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H230464

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H230464

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MLXMK	001	A03MW607D001	08/19/11	08:45
MLXMN	002	A03MW703DD0001	08/19/11	09:15
MLXM1	003	A03MW16D0001	08/19/11	10:30
MLXM3	004	A02MW40001	08/19/11	12:00
MLXM6	005	A03MW9004	08/19/11	
MLXNA	006	A04AMW701DD0001	08/19/11	13:40
MLXND	007	A04BMW707DD0001	08/19/11	14:05
MLXNE	008	TRIP BLANK #4	08/19/11	
MLXN1	009	A03MW607D0001 DISSOLVED	08/19/11	08:45
MLXN6	010	A03MW703DD0001 DISSOLVED	08/19/11	09:15
MLXN8	011	A03MW16D0001 DISSOLVED	08/19/11	10:30
MLXPA	012	A02MW40001 DISSOLVED	08/19/11	12:00
MLXPC	013	A03MW9004 DISSOLVED	08/19/11	
MLXPD	014	A04AMW701DD0001 DISSOLVED	08/19/11	13:40

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW607D001

TOTAL Metals

Lot-Sample #...: F1H230464-001 Matrix.....: WATER
Date Sampled...: 08/19/11 08:45 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	19.5	1.0	ug/L	SW846 6020A	08/24-08/26/11	MLXMK1AE
		Dilution Factor: 1		Analysis Time..: 03:49		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1AQ
		Dilution Factor: 1		Analysis Time..: 22:42		
Aluminum	15200 NE	200	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1AR
		Dilution Factor: 1		Analysis Time..: 22:42		
Arsenic	9.2 J	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1AP
		Dilution Factor: 1		Analysis Time..: 22:42		
Barium	132	50	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1AT
		Dilution Factor: 1		Analysis Time..: 22:42		
Beryllium	0.67 J	5	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1AU
		Dilution Factor: 1		Analysis Time..: 22:42		
Calcium	719000 N	20000	ug/L	SW846 6010C	08/24-08/30/11	MLXMK1AV
		Dilution Factor: 20		Analysis Time..: 12:13		
Cadmium	1.0 J	5	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1AW
		Dilution Factor: 1		Analysis Time..: 22:42		
Cobalt	6.5 J	50	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1AX
		Dilution Factor: 1		Analysis Time..: 22:42		
Chromium	17.1	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A0
		Dilution Factor: 1		Analysis Time..: 22:42		
Copper	21.6 J	25	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A1
		Dilution Factor: 1		Analysis Time..: 22:42		
Iron	16200	100	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A2
		Dilution Factor: 1		Analysis Time..: 22:42		
Magnesium	211000 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A3
		Dilution Factor: 10		Analysis Time..: 13:55		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW607D001

TOTAL Metals

Lot-Sample #...: F1H230464-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	2380	15	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A4
		Dilution Factor: 1		Analysis Time..: 22:42		
Sodium	61600 N	1000	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A5
		Dilution Factor: 1		Analysis Time..: 11:23		
Nickel	19.3 J	40	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A6
		Dilution Factor: 1		Analysis Time..: 22:42		
Lead	41.8	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A7
		Dilution Factor: 1		Analysis Time..: 22:42		
Antimony	5.8 J	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A8
		Dilution Factor: 1		Analysis Time..: 22:42		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1A9
		Dilution Factor: 1		Analysis Time..: 22:42		
Strontium	830 N	100	ug/L	SW846 6010C	08/24-08/30/11	MLXMK1CA
		Dilution Factor: 20		Analysis Time..: 12:13		
Vanadium	15.3 J	50	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1CD
		Dilution Factor: 1		Analysis Time..: 22:42		
Zinc	305	20	ug/L	SW846 6010C	08/24-08/27/11	MLXMK1CE
		Dilution Factor: 1		Analysis Time..: 22:42		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXMK2CC
		Dilution Factor: 1		Analysis Time..: 19:06		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW607D001

General Chemistry

Lot-Sample #...: F1H230464-001 Work Order #...: MLXMK Matrix.....: WATER
Date Sampled...: 08/19/11 08:45 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	101	20.0	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 100		Analysis Time..: 01:08		
Fluoride	4.9	0.50	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 5		Analysis Time..: 12:37		
Nitrate	0.042	0.020	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1		Analysis Time..: 12:22		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 5		Analysis Time..: 12:37		
Phosphate as P, Ortho	0.077 B,J	0.50	mg/L	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1		Analysis Time..: 12:22		
Sulfate	63.8 J	2.5	mg/L	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 5		Analysis Time..: 12:37		
Total Alkalinity	1490	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	754	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001

GC/MS Volatiles

Lot-Sample #...: F1H230464-002 Work Order #...: MLXMN1AC Matrix.....: WATER
Date Sampled...: 08/19/11 09:15 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 01:10
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001

GC/MS Volatiles

Lot-Sample #...: F1H230464-002 Work Order #...: MLXMN1AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	111	(85 - 120)
Dibromofluoromethane	107	(85 - 115)
1,2-Dichloroethane-d4	107	(70 - 120)
4-Bromofluorobenzene	100	(75 - 120)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001

TOTAL Metals

Lot-Sample #...: F1H230464-002 Matrix.....: WATER
Date Sampled...: 08/19/11 09:15 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	0.28 J	1	ug/L	SW846 6020A	08/24-08/26/11	MLXMN1A5
		Dilution Factor: 1		Analysis Time..: 03:56		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AF
		Dilution Factor: 1		Analysis Time..: 22:49		
Aluminum	2010 NE	200	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AG
		Dilution Factor: 1		Analysis Time..: 22:49		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AE
		Dilution Factor: 1		Analysis Time..: 22:49		
Barium	55.0	50	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AH
		Dilution Factor: 1		Analysis Time..: 22:49		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AJ
		Dilution Factor: 1		Analysis Time..: 22:49		
Calcium	382000 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AK
		Dilution Factor: 10		Analysis Time..: 14:02		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AL
		Dilution Factor: 1		Analysis Time..: 22:49		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AM
		Dilution Factor: 1		Analysis Time..: 22:49		
Chromium	11.5	10	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AN
		Dilution Factor: 1		Analysis Time..: 22:49		
Copper	11.4 J	25	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AP
		Dilution Factor: 1		Analysis Time..: 22:49		
Iron	4210	100	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AQ
		Dilution Factor: 1		Analysis Time..: 22:49		
Magnesium	110000 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AR
		Dilution Factor: 10		Analysis Time..: 14:02		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001

TOTAL Metals

Lot-Sample #...: F1H230464-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**462**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXMN1AT**
		Dilution Factor: 1		Analysis Time..: 22:49		
Sodium	**191000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXMN1AU**
		Dilution Factor: 10		Analysis Time..: 14:02		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1AV
		Dilution Factor: 1		Analysis Time..: 22:49		
Lead	**10.8**	**10**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXMN1AW**
		Dilution Factor: 1		Analysis Time..: 22:49		
Antimony	ND	50	ug/L	SW846 6010C	08/24-08/30/11	MLXMN1AX
		Dilution Factor: 5		Analysis Time..: 12:23		
Selenium	ND	75	ug/L	SW846 6010C	08/24-08/30/11	MLXMN1A0
		Dilution Factor: 5		Analysis Time..: 12:23		
Strontium	**15200 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXMN1A1**
		Dilution Factor: 10		Analysis Time..: 14:02		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXMN1A3
		Dilution Factor: 1		Analysis Time..: 22:49		
Zinc	**41.9**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXMN1A4**
		Dilution Factor: 1		Analysis Time..: 22:49		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXMN2A2
		Dilution Factor: 1		Analysis Time..: 19:12		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001

General Chemistry

Lot-Sample #...: F1H230464-002 Work Order #...: MLXMN Matrix.....: WATER
Date Sampled...: 08/19/11 09:15 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	455	40.0	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 200		Analysis Time..: 07:18		
Fluoride	0.64	0.10	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 1		Analysis Time..: 06:32		
Nitrate	0.018 B	0.020	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1		Analysis Time..: 06:32		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 10		Analysis Time..: 07:03		
Phosphate as P, Ortho	0.087 B,J	0.50	mg/L	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1		Analysis Time..: 06:32		
Sulfate	413 J	100	mg/L	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 200		Analysis Time..: 07:18		
Total Alkalinity	382	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1940	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW16D0001

TOTAL Metals

Lot-Sample #...: F1H230464-003 Matrix.....: WATER
Date Sampled...: 08/19/11 10:30 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	**29.3**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLXM11AP**
		Dilution Factor: 1		Analysis Time..: 04:23		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM11A2
		Dilution Factor: 1		Analysis Time..: 23:14		
Aluminum	ND NE	200	ug/L	SW846 6010C	08/24-08/27/11	MLXM11A3
		Dilution Factor: 1		Analysis Time..: 23:14		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM11A1
		Dilution Factor: 1		Analysis Time..: 23:14		
Barium	**118**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM11A4**
		Dilution Factor: 1		Analysis Time..: 23:14		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXM11A5
		Dilution Factor: 1		Analysis Time..: 23:14		
Calcium	**58400 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM11A6**
		Dilution Factor: 10		Analysis Time..: 14:27		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXM11A7
		Dilution Factor: 1		Analysis Time..: 23:14		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXM11A8
		Dilution Factor: 1		Analysis Time..: 23:14		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM11AA
		Dilution Factor: 1		Analysis Time..: 23:14		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/27/11	MLXM11AC
		Dilution Factor: 1		Analysis Time..: 23:14		
Iron	**1590**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM11AD**
		Dilution Factor: 1		Analysis Time..: 23:14		
Magnesium	**63800 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM11AE**
		Dilution Factor: 10		Analysis Time..: 14:27		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW16D0001

TOTAL Metals

Lot-Sample #...: F1H230464-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**808**	15	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM11AF**
		Dilution Factor: 1		Analysis Time..: 23:14		
Sodium	**154000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM11AG**
		Dilution Factor: 10		Analysis Time..: 14:27		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/27/11	MLXM11AH
		Dilution Factor: 1		Analysis Time..: 23:14		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM11AJ
		Dilution Factor: 1		Analysis Time..: 23:14		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM11AK
		Dilution Factor: 1		Analysis Time..: 23:14		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/27/11	MLXM11AL
		Dilution Factor: 1		Analysis Time..: 23:14		
Strontium	**264 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLXM11A9**
		Dilution Factor: 10		Analysis Time..: 12:20		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXM11CC
		Dilution Factor: 1		Analysis Time..: 23:14		
Zinc	**24.3**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM11CD**
		Dilution Factor: 1		Analysis Time..: 23:14		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXM12CA
		Dilution Factor: 1		Analysis Time..: 19:51		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW16D0001

General Chemistry

Lot-Sample #...: F1H230464-003 Work Order #...: MLXM1 Matrix.....: WATER
Date Sampled...: 08/19/11 10:30 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	96.0	20.0	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 100		Analysis Time..: 04:44		
Fluoride	7.1	0.50	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 5		Analysis Time..: 04:13		
Nitrate	0.0064 B	0.020	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1		Analysis Time..: 03:58		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 5		Analysis Time..: 04:13		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1		Analysis Time..: 03:58		
Sulfate	53.5 J	2.5	mg/L	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 5		Analysis Time..: 04:13		
Total Alkalinity	512	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	744	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001

GC/MS Volatiles

Lot-Sample #...: F1H230464-004 Work Order #...: MLXM31AC Matrix.....: WATER
Date Sampled...: 08/19/11 12:00 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 02:30
Dilution Factor: 10
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1-Dichloroethene	**51 D**	**10**	**ug/L**
1,2-Dichloroethene (total)	**26 D**	**20**	**ug/L**
1,2-Dichloropropane	ND	10	ug/L
Acetone	ND	20	ug/L
Benzene	ND	10	ug/L
Bromodichloromethane	ND	10	ug/L
Bromoform	ND	10	ug/L
Bromomethane	ND	20	ug/L
2-Butanone	ND	50	ug/L
Carbon disulfide	ND	20	ug/L
Carbon tetrachloride	ND	10	ug/L
Chlorobenzene	ND	20	ug/L
Dibromochloromethane	ND	10	ug/L
Chloroethane	ND	20	ug/L
Chloroform	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,1-Dichloroethane	**110 D**	**10**	**ug/L**
1,2-Dichloroethane	ND	10	ug/L
cis-1,3-Dichloropropene	ND	10	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	10	ug/L
2-Hexanone	ND	50	ug/L
Methylene chloride	ND	10	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Styrene	ND	10	ug/L
1,1,2,2-Tetrachloroethane	ND	10	ug/L
Tetrachloroethene	ND	10	ug/L
Toluene	ND	10	ug/L
1,1,2-Trichloroethane	ND	10	ug/L
Trichloroethene	**80 D**	**10**	**ug/L**
Vinyl chloride	**1.1 J,D**	**20**	**ug/L**
Xylenes (total)	ND	50	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001

GC/MS Volatiles

Lot-Sample #...: F1H230464-004 Work Order #...: MLXM31AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	109	(85 - 120)
Dibromofluoromethane	107	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
4-Bromofluorobenzene	101	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001

GC/MS Volatiles

Lot-Sample #...: F1H230464-004 Work Order #...: MLXM32AC Matrix.....: WATER
Date Sampled...: 08/19/11 12:00 Date Received..: 08/23/11
Prep Date.....: 08/31/11 Analysis Date..: 08/31/11
Prep Batch #...: 1244011 Analysis Time..: 21:28
Dilution Factor: 20
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,1,1-Trichloroethane	500 D	20	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	93	(85 - 120)
Dibromofluoromethane	95	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
4-Bromofluorobenzene	95	(75 - 120)

NOTE(S):

D Result was obtained from the analysis of a dilution.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001

TOTAL Metals

Lot-Sample #...: F1H230464-004 Matrix.....: WATER
Date Sampled...: 08/19/11 12:00 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	**48.0**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLXM31A5**
		Dilution Factor: 1		Analysis Time..: 04:36		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AF
		Dilution Factor: 1		Analysis Time..: 23:27		
Aluminum	ND NE	200	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AG
		Dilution Factor: 1		Analysis Time..: 23:27		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AE
		Dilution Factor: 1		Analysis Time..: 23:27		
Barium	**39.4 J**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM31AH**
		Dilution Factor: 1		Analysis Time..: 23:27		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AJ
		Dilution Factor: 1		Analysis Time..: 23:27		
Calcium	**61900 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM31AK**
		Dilution Factor: 10		Analysis Time..: 14:40		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AL
		Dilution Factor: 1		Analysis Time..: 23:27		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AM
		Dilution Factor: 1		Analysis Time..: 23:27		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AN
		Dilution Factor: 1		Analysis Time..: 23:27		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AP
		Dilution Factor: 1		Analysis Time..: 23:27		
Iron	ND	100	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AQ
		Dilution Factor: 1		Analysis Time..: 23:27		
Magnesium	**23000 N**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM31AR**
		Dilution Factor: 1		Analysis Time..: 12:20		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001

TOTAL Metals

Lot-Sample #...: F1H230464-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	172	15	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AT
		Dilution Factor: 1		Analysis Time..: 23:27		
Sodium	25500 N	1000	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AU
		Dilution Factor: 1		Analysis Time..: 12:20		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AV
		Dilution Factor: 1		Analysis Time..: 23:27		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AW
		Dilution Factor: 1		Analysis Time..: 23:27		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM31AX
		Dilution Factor: 1		Analysis Time..: 23:27		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/27/11	MLXM31A0
		Dilution Factor: 1		Analysis Time..: 23:27		
Strontium	169 N	50	ug/L	SW846 6010C	08/24-08/30/11	MLXM31A1
		Dilution Factor: 10		Analysis Time..: 12:32		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXM31A3
		Dilution Factor: 1		Analysis Time..: 23:27		
Zinc	83.7	20	ug/L	SW846 6010C	08/24-08/27/11	MLXM31A4
		Dilution Factor: 1		Analysis Time..: 23:27		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXM32A2
		Dilution Factor: 1		Analysis Time..: 20:04		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001

General Chemistry

Lot-Sample #...: F1H230464-004 Work Order #...: MLXM3 Matrix.....: WATER
Date Sampled...: 08/19/11 12:00 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	43.3	2.0	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 10		Analysis Time..: 03:27		
Fluoride	1.2	0.10	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 1		Analysis Time..: 02:25		
Nitrate	0.14	0.020	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1		Analysis Time..: 02:25		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 5		Analysis Time..: 02:40		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1		Analysis Time..: 02:25		
Sulfate	44.4 J	2.5	mg/L	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 5		Analysis Time..: 02:40		
Total Alkalinity	202	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	352	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW9004

TOTAL Metals

Lot-Sample #...: F1H230464-005 **Matrix.....:** WATER
Date Sampled...: 08/19/11 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	**28.4**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLXM61AP**
		Dilution Factor: 1		Analysis Time..: 04:56		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM61A2
		Dilution Factor: 1		Analysis Time..: 23:34		
Aluminum	ND NE	200	ug/L	SW846 6010C	08/24-08/27/11	MLXM61A3
		Dilution Factor: 1		Analysis Time..: 23:34		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM61A1
		Dilution Factor: 1		Analysis Time..: 23:34		
Barium	**119**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM61A4**
		Dilution Factor: 1		Analysis Time..: 23:34		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXM61A5
		Dilution Factor: 1		Analysis Time..: 23:34		
Calcium	**54900 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM61A6**
		Dilution Factor: 10		Analysis Time..: 14:46		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXM61A7
		Dilution Factor: 1		Analysis Time..: 23:34		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXM61A8
		Dilution Factor: 1		Analysis Time..: 23:34		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AA
		Dilution Factor: 1		Analysis Time..: 23:34		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AC
		Dilution Factor: 1		Analysis Time..: 23:34		
Iron	**1590**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM61AD**
		Dilution Factor: 1		Analysis Time..: 23:34		
Magnesium	**62400 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXM61AE**
		Dilution Factor: 10		Analysis Time..: 14:46		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW9004

TOTAL Metals

Lot-Sample #...: F1H230464-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	811	15	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AF
		Dilution Factor: 1		Analysis Time..: 23:34		
Sodium	153000 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AG
		Dilution Factor: 10		Analysis Time..: 14:46		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AH
		Dilution Factor: 1		Analysis Time..: 23:34		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AJ
		Dilution Factor: 1		Analysis Time..: 23:34		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AK
		Dilution Factor: 1		Analysis Time..: 23:34		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/27/11	MLXM61AL
		Dilution Factor: 1		Analysis Time..: 23:34		
Strontium	162 N	50	ug/L	SW846 6010C	08/24-08/30/11	MLXM61A9
		Dilution Factor: 10		Analysis Time..: 12:39		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXM61CC
		Dilution Factor: 1		Analysis Time..: 23:34		
Zinc	24.0	20	ug/L	SW846 6010C	08/24-08/27/11	MLXM61CD
		Dilution Factor: 1		Analysis Time..: 23:34		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXM62CA
		Dilution Factor: 1		Analysis Time..: 20:10		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW9004

General Chemistry

Lot-Sample #...: F1H230464-005 Work Order #...: MLXM6 Matrix.....: WATER
Date Sampled...: 08/19/11 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	95.4	20.0	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 100		Analysis Time..: 02:10		
Fluoride	7.1	0.50	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 5		Analysis Time..: 01:39		
Nitrate	0.10	0.020	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1		Analysis Time..: 01:23		
Nitrite	ND	0.10	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 5		Analysis Time..: 01:39		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1		Analysis Time..: 01:23		
Sulfate	53.5 J	2.5	mg/L	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 5		Analysis Time..: 01:39		
Total Alkalinity	503	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	747	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001

GC/MS Volatiles

Lot-Sample #...: F1H230464-006 Work Order #...: MLXNA1AN Matrix.....: WATER
Date Sampled...: 08/19/11 13:40 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 02:56
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**0.40 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.42 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001

GC/MS Volatiles

Lot-Sample #...: F1H230464-006 Work Order #...: MLXNA1AN Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	103	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	103	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001

TOTAL Metals

Lot-Sample #...: F1H230464-006 Matrix.....: WATER
Date Sampled...: 08/19/11 13:40 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	1.4	1	ug/L	SW846 6020A	08/24-08/26/11	MLXNA1AG
		Dilution Factor: 1		Analysis Time..: 05:03		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AR
		Dilution Factor: 1		Analysis Time..: 23:40		
Aluminum	236 NE	200	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AT
		Dilution Factor: 1		Analysis Time..: 23:40		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AQ
		Dilution Factor: 1		Analysis Time..: 23:40		
Barium	26.1 J	50	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AU
		Dilution Factor: 1		Analysis Time..: 23:40		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AV
		Dilution Factor: 1		Analysis Time..: 23:40		
Calcium	141000 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AW
		Dilution Factor: 10		Analysis Time..: 14:53		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AX
		Dilution Factor: 1		Analysis Time..: 23:40		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A0
		Dilution Factor: 1		Analysis Time..: 23:40		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A1
		Dilution Factor: 1		Analysis Time..: 23:40		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A2
		Dilution Factor: 1		Analysis Time..: 23:40		
Iron	275	100	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A3
		Dilution Factor: 1		Analysis Time..: 23:40		
Magnesium	60700 N	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A4
		Dilution Factor: 10		Analysis Time..: 14:53		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001

TOTAL Metals

Lot-Sample #...: F1H230464-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**20.6**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXNA1A5**
		Dilution Factor: 1		Analysis Time..: 23:40		
Sodium	**254000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXNA1A6**
		Dilution Factor: 10		Analysis Time..: 14:53		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A7
		Dilution Factor: 1		Analysis Time..: 23:40		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A8
		Dilution Factor: 1		Analysis Time..: 23:40		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1A9
		Dilution Factor: 1		Analysis Time..: 23:40		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AA
		Dilution Factor: 1		Analysis Time..: 23:40		
Strontium	**2650 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXNA1AC**
		Dilution Factor: 10		Analysis Time..: 14:53		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AE
		Dilution Factor: 1		Analysis Time..: 23:40		
Zinc	ND	20	ug/L	SW846 6010C	08/24-08/27/11	MLXNA1AF
		Dilution Factor: 1		Analysis Time..: 23:40		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXNA2AD
		Dilution Factor: 1		Analysis Time..: 20:17		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001

General Chemistry

Lot-Sample #...: F1H230464-006 Work Order #...: MLXNA Matrix.....: WATER
Date Sampled...: 08/19/11 13:40 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	488	40.0	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 200		Analysis Time..: 05:46		
Fluoride	0.56	0.10	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 1		Analysis Time..: 04:59		
Nitrate	0.018 B	0.020	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1		Analysis Time..: 04:59		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 10		Analysis Time..: 05:30		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1		Analysis Time..: 04:59		
Sulfate	185 J	5.0	mg/L	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 10		Analysis Time..: 05:30		
Total Alkalinity	257	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1430	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001

General Chemistry

Lot-Sample #...: F1H230464-007 Work Order #...: MLXND Matrix.....: WATER
Date Sampled...: 08/19/11 14:05 Date Received..: 08/23/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	5750	400	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 2000		Analysis Time..: 10:54		
Fluoride	0.40 B	2.0	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 20		Analysis Time..: 10:23		
Nitrate	0.44	0.040	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 2		Analysis Time..: 10:08		
Nitrite	ND	4.0	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 200		Analysis Time..: 10:39		
Phosphate as P, Ortho	0.63 B,J	1.0	mg/L	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 2		Analysis Time..: 10:08		
Sulfate	1860 J	100	mg/L	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 200		Analysis Time..: 10:39		
Total Alkalinity	1750	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	13500	1000	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 100		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #4

GC/MS Volatiles

Lot-Sample #...: F1H230464-008 Work Order #...: MLXNE1AA Matrix.....: WATER
Date Sampled...: 08/19/11 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 03:22
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
4-Methyl-2-pentanone	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	**3.0**	**1.0**	**ug/L**
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Acetone	**9.9**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	**0.16 J**	**2.0**	**ug/L**
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	**0.13 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #4

GC/MS Volatiles

Lot-Sample #...: F1H230464-008 Work Order #...: MLXNE1AA Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
Dibromofluoromethane	105	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	100	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW607D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-009 Matrix.....: WATER
Date Sampled...: 08/19/11 08:45 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	12.3	1 Dilution Factor: 1	ug/L	**SW846 6020A** Analysis Time..: 05:09	**08/24-08/26/11**	**MLXN11A2**
Prep Batch #...: 1236079						
Silver	ND	10 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 23:59	08/24-08/27/11	MLXN11AC
Aluminum	**2580 NE**	200 Dilution Factor: 1	ug/L	**SW846 6010C** Analysis Time..: 23:59	**08/24-08/27/11**	**MLXN11AD**
Arsenic	ND	10 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 23:59	08/24-08/27/11	MLXN11AA
Barium	64.1	50 Dilution Factor: 1	ug/L	**SW846 6010C** Analysis Time..: 23:59	**08/24-08/27/11**	**MLXN11AE**
Beryllium	ND	5 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 23:59	08/24-08/27/11	MLXN11AF
Calcium	**159000 N**	10000 Dilution Factor: 10	ug/L	**SW846 6010C** Analysis Time..: 15:12	**08/24-08/27/11**	**MLXN11AG**
Cadmium	ND	5 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 23:59	08/24-08/27/11	MLXN11AH
Cobalt	ND	50 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 23:59	08/24-08/27/11	MLXN11AJ
Chromium	ND	10 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 23:59	08/24-08/27/11	MLXN11AK
Copper	ND	25 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 23:59	08/24-08/27/11	MLXN11AL
Iron	**2440**	100 Dilution Factor: 1	ug/L	**SW846 6010C** Analysis Time..: 23:59	**08/24-08/27/11**	**MLXN11AM**
Magnesium	**101000 N**	10000 Dilution Factor: 10	ug/L	**SW846 6010C** Analysis Time..: 15:12	**08/24-08/27/11**	**MLXN11AN**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW607D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-009 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**561**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN11AP**
		Dilution Factor: 1		Analysis Time..: 23:59		
Sodium	**60200 N**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN11AQ**
		Dilution Factor: 1		Analysis Time..: 12:51		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/27/11	MLXN11AR
		Dilution Factor: 1		Analysis Time..: 23:59		
Lead	**6.0 J**	**10**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN11AT**
		Dilution Factor: 1		Analysis Time..: 23:59		
Antimony	**4.4 J**	**10**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN11AU**
		Dilution Factor: 1		Analysis Time..: 23:59		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/27/11	MLXN11AV
		Dilution Factor: 1		Analysis Time..: 23:59		
Strontium	**412 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN11AW**
		Dilution Factor: 10		Analysis Time..: 15:12		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/27/11	MLXN11A0
		Dilution Factor: 1		Analysis Time..: 23:59		
Zinc	**47.7**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN11A1**
		Dilution Factor: 1		Analysis Time..: 23:59		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXN12AX
		Dilution Factor: 1		Analysis Time..: 20:23		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-010 Matrix.....: WATER
Date Sampled...: 08/19/11 09:15 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	ND	1	ug/L	SW846 6020A	08/24-08/26/11	MLXN61AD
		Dilution Factor: 1		Analysis Time..: 05:16		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AG
		Dilution Factor: 1		Analysis Time..: 00:06		
Aluminum	ND NE	200	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AH
		Dilution Factor: 1		Analysis Time..: 00:06		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AF
		Dilution Factor: 1		Analysis Time..: 00:06		
Barium	**45.7 J**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXN61AJ**
		Dilution Factor: 1		Analysis Time..: 00:06		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AK
		Dilution Factor: 1		Analysis Time..: 00:06		
Calcium	**265000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN61AL**
		Dilution Factor: 10		Analysis Time..: 15:19		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AM
		Dilution Factor: 1		Analysis Time..: 00:06		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AN
		Dilution Factor: 1		Analysis Time..: 00:06		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AP
		Dilution Factor: 1		Analysis Time..: 00:06		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AQ
		Dilution Factor: 1		Analysis Time..: 00:06		
Iron	**521**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXN61AR**
		Dilution Factor: 1		Analysis Time..: 00:06		
Magnesium	**76000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN61AT**
		Dilution Factor: 10		Analysis Time..: 15:19		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-010 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**18.7**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXN61AU**
		Dilution Factor: 1		Analysis Time..: 00:06		
Sodium	**187000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN61AV**
		Dilution Factor: 10		Analysis Time..: 15:19		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AW
		Dilution Factor: 1		Analysis Time..: 00:06		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AX
		Dilution Factor: 1		Analysis Time..: 00:06		
Antimony	ND	50	ug/L	SW846 6010C	08/24-08/30/11	MLXN61A0
		Dilution Factor: 5		Analysis Time..: 12:49		
Selenium	ND	75	ug/L	SW846 6010C	08/24-08/30/11	MLXN61A1
		Dilution Factor: 5		Analysis Time..: 12:49		
Strontium	**15300 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN61A2**
		Dilution Factor: 10		Analysis Time..: 15:19		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AA
		Dilution Factor: 1		Analysis Time..: 00:06		
Zinc	ND	20	ug/L	SW846 6010C	08/24-08/28/11	MLXN61AC
		Dilution Factor: 1		Analysis Time..: 00:06		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXN62A3
		Dilution Factor: 1		Analysis Time..: 20:30		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW16D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-011 Matrix.....: WATER
Date Sampled...: 08/19/11 10:30 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	**27.7**	1 Dilution Factor: 1	**ug/L**	**SW846 6020A** Analysis Time..: 05:36	**08/24-08/26/11**	**MLXN81AD**
Prep Batch #...: 1236079						
Silver	ND	10 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AG
Aluminum	ND NE	200 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AH
Arsenic	ND	10 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AF
Barium	**116**	**50** Dilution Factor: 1	**ug/L**	**SW846 6010C** Analysis Time..: 00:25	**08/24-08/28/11**	**MLXN81AJ**
Beryllium	ND	5 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AK
Calcium	**52800 N**	**10000** Dilution Factor: 10	**ug/L**	**SW846 6010C** Analysis Time..: 15:38	**08/24-08/27/11**	**MLXN81AL**
Cadmium	ND	5 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AM
Cobalt	ND	50 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AN
Chromium	ND	10 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AP
Copper	ND	25 Dilution Factor: 1	ug/L	SW846 6010C Analysis Time..: 00:25	08/24-08/28/11	MLXN81AQ
Iron	**1490**	**100** Dilution Factor: 1	**ug/L**	**SW846 6010C** Analysis Time..: 00:25	**08/24-08/28/11**	**MLXN81AR**
Magnesium	**59400 N**	**10000** Dilution Factor: 10	**ug/L**	**SW846 6010C** Analysis Time..: 15:38	**08/24-08/27/11**	**MLXN81AT**

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW16D0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-011 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**774**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXN81AU**
		Dilution Factor: 1		Analysis Time..: 00:25		
Sodium	**147000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXN81AV**
		Dilution Factor: 10		Analysis Time..: 15:38		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	MLXN81AW
		Dilution Factor: 1		Analysis Time..: 00:25		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXN81AX
		Dilution Factor: 1		Analysis Time..: 00:25		
Antimony	**4.1 J**	**10**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXN81A0**
		Dilution Factor: 1		Analysis Time..: 00:25		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLXN81A1
		Dilution Factor: 1		Analysis Time..: 00:25		
Strontium	**207 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLXN81A2**
		Dilution Factor: 10		Analysis Time..: 12:45		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXN81AA
		Dilution Factor: 1		Analysis Time..: 00:25		
Zinc	**22.8**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXN81AC**
		Dilution Factor: 1		Analysis Time..: 00:25		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXN82A3
		Dilution Factor: 1		Analysis Time..: 21:02		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-012 Matrix.....: WATER
Date Sampled...: 08/19/11 12:00 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	**46.0**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLXPA1AD**
		Dilution Factor: 1		Analysis Time..: 05:42		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AG
		Dilution Factor: 1		Analysis Time..: 00:32		
Aluminum	ND NE	200	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AH
		Dilution Factor: 1		Analysis Time..: 00:32		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AF
		Dilution Factor: 1		Analysis Time..: 00:32		
Barium	**34.3 J**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXPA1AJ**
		Dilution Factor: 1		Analysis Time..: 00:32		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AK
		Dilution Factor: 1		Analysis Time..: 00:32		
Calcium	**66000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXPA1AL**
		Dilution Factor: 10		Analysis Time..: 15:44		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AM
		Dilution Factor: 1		Analysis Time..: 00:32		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AN
		Dilution Factor: 1		Analysis Time..: 00:32		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AP
		Dilution Factor: 1		Analysis Time..: 00:32		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AQ
		Dilution Factor: 1		Analysis Time..: 00:32		
Iron	ND	100	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AR
		Dilution Factor: 1		Analysis Time..: 00:32		
Magnesium	**22800 N**	**1000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXPA1AT**
		Dilution Factor: 1		Analysis Time..: 13:23		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-012 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	79.8	15	ug/L	**SW846 6010C**	**08/24-08/28/11**	**MLXPA1AU**
		Dilution Factor: 1		Analysis Time..: 00:32		
Sodium	**25400 N**	1000	ug/L	**SW846 6010C**	**08/24-08/27/11**	**MLXPA1AV**
		Dilution Factor: 1		Analysis Time..: 13:23		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AW
		Dilution Factor: 1		Analysis Time..: 00:32		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AX
		Dilution Factor: 1		Analysis Time..: 00:32		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1A0
		Dilution Factor: 1		Analysis Time..: 00:32		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1A1
		Dilution Factor: 1		Analysis Time..: 00:32		
Strontium	**207 N**	**50**	ug/L	**SW846 6010C**	**08/24-08/30/11**	**MLXPA1A2**
		Dilution Factor: 10		Analysis Time..: 12:51		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXPA1AA
		Dilution Factor: 1		Analysis Time..: 00:32		
Zinc	**73.0**	**20**	ug/L	**SW846 6010C**	**08/24-08/28/11**	**MLXPA1AC**
		Dilution Factor: 1		Analysis Time..: 00:32		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXPA2A3
		Dilution Factor: 1		Analysis Time..: 21:08		

NOTE(S):

J Estimated result, Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW9004 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-013 Matrix.....: WATER
Date Sampled...: 08/19/11 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	**28.2**	**1**	**ug/L**	**SW846 6020A**	**08/24-08/26/11**	**MLXPC1AD**
		Dilution Factor: 1		Analysis Time..: 05:49		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AG
		Dilution Factor: 1		Analysis Time..: 00:38		
Aluminum	ND NE	200	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AH
		Dilution Factor: 1		Analysis Time..: 00:38		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AF
		Dilution Factor: 1		Analysis Time..: 00:38		
Barium	**119**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXPC1AJ**
		Dilution Factor: 1		Analysis Time..: 00:38		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AK
		Dilution Factor: 1		Analysis Time..: 00:38		
Calcium	**56000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXPC1AL**
		Dilution Factor: 10		Analysis Time..: 15:50		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AM
		Dilution Factor: 1		Analysis Time..: 00:38		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AN
		Dilution Factor: 1		Analysis Time..: 00:38		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AP
		Dilution Factor: 1		Analysis Time..: 00:38		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AQ
		Dilution Factor: 1		Analysis Time..: 00:38		
Iron	**1540**	**100**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXPC1AR**
		Dilution Factor: 1		Analysis Time..: 00:38		
Magnesium	**63100 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXPC1AT**
		Dilution Factor: 10		Analysis Time..: 15:50		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW9004 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-013 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**796**	15	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXPC1AU**
		Dilution Factor: 1		Analysis Time..: 00:38		
Sodium	**155000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXPC1AV**
		Dilution Factor: 10		Analysis Time..: 15:50		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AW
		Dilution Factor: 1		Analysis Time..: 00:38		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AX
		Dilution Factor: 1		Analysis Time..: 00:38		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1A0
		Dilution Factor: 1		Analysis Time..: 00:38		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1A1
		Dilution Factor: 1		Analysis Time..: 00:38		
Strontium	**202 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/30/11**	**MLXPC1A2**
		Dilution Factor: 10		Analysis Time..: 12:57		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AA
		Dilution Factor: 1		Analysis Time..: 00:38		
Zinc	23.3	20	ug/L	SW846 6010C	08/24-08/28/11	MLXPC1AC
		Dilution Factor: 1		Analysis Time..: 00:38		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXPC2A3
		Dilution Factor: 1		Analysis Time..: 21:15		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-014 Matrix.....: WATER
Date Sampled...: 08/19/11 13:40 Date Received..: 08/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1236077						
Uranium	**1.5**	1	ug/L	SW846 6020A	08/24-08/26/11	MLXPD1AD
		Dilution Factor: 1		Analysis Time..: 05:56		
Prep Batch #...: 1236079						
Silver	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AG
		Dilution Factor: 1		Analysis Time..: 00:45		
Aluminum	**80.8 BNE**	200	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AH
		Dilution Factor: 1		Analysis Time..: 00:45		
Arsenic	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AF
		Dilution Factor: 1		Analysis Time..: 00:45		
Barium	**23.1 J**	50	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AJ
		Dilution Factor: 1		Analysis Time..: 00:45		
Beryllium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AK
		Dilution Factor: 1		Analysis Time..: 00:45		
Calcium	**141000 N**	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXPD1AL
		Dilution Factor: 10		Analysis Time..: 15:57		
Cadmium	ND	5	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AM
		Dilution Factor: 1		Analysis Time..: 00:45		
Cobalt	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AN
		Dilution Factor: 1		Analysis Time..: 00:45		
Chromium	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AP
		Dilution Factor: 1		Analysis Time..: 00:45		
Copper	ND	25	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AQ
		Dilution Factor: 1		Analysis Time..: 00:45		
Iron	**75.2 J**	100	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AR
		Dilution Factor: 1		Analysis Time..: 00:45		
Magnesium	**58100 N**	10000	ug/L	SW846 6010C	08/24-08/27/11	MLXPD1AT
		Dilution Factor: 10		Analysis Time..: 15:57		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H230464-014 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**12.5 J**	**15**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXPD1AU**
		Dilution Factor: 1		Analysis Time..: 00:45		
Sodium	**252000 N**	**10000**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXPD1AV**
		Dilution Factor: 10		Analysis Time..: 15:57		
Nickel	ND	40	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AW
		Dilution Factor: 1		Analysis Time..: 00:45		
Lead	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AX
		Dilution Factor: 1		Analysis Time..: 00:45		
Antimony	ND	10	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1A0
		Dilution Factor: 1		Analysis Time..: 00:45		
Selenium	ND	15	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1A1
		Dilution Factor: 1		Analysis Time..: 00:45		
Strontium	**2590 N**	**50**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**MLXPD1A2**
		Dilution Factor: 10		Analysis Time..: 15:57		
Vanadium	ND	50	ug/L	SW846 6010C	08/24-08/28/11	MLXPD1AA
		Dilution Factor: 1		Analysis Time..: 00:45		
Zinc	**7.1 J**	**20**	**ug/L**	**SW846 6010C**	**08/24-08/28/11**	**MLXPD1AC**
		Dilution Factor: 1		Analysis Time..: 00:45		
Prep Batch #...: 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	MLXPD2A3
		Dilution Factor: 1		Analysis Time..: 21:21		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 Work Order #...: ML3581AA Matrix.....: WATER
MB Lot-Sample #: F1H250000-192

Prep Date.....: 08/25/11 Analysis Time..: 22:13
Analysis Date..: 08/25/11 Prep Batch #...: 1237192
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
******* INVALID DATA ON FOLLOWING LINE *******				
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	106	(85 - 120)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 Work Order #...: ML3581AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Dibromofluoromethane	102	(85 - 115)		
1,2-Dichloroethane-d4	102	(70 - 120)		
4-Bromofluorobenzene	99	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 Work Order #...: ML7GA1AA Matrix.....: WATER
MB Lot-Sample #: F1I010000-011

Prep Date.....: 08/31/11 Analysis Time..: 19:26
Analysis Date..: 08/31/11 Prep Batch #...: 1244011
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	98	(85 - 120)
Dibromofluoromethane	99	(85 - 115)
1,2-Dichloroethane-d4	104	(70 - 120)
4-Bromofluorobenzene	97	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H240000-077 **Prep Batch #...:** 1236077						
Uranium	ND	1.0	ug/L	SW846 6020A	08/24-08/26/11	ML0JJ1AA
		Dilution Factor: 1				
		Analysis Time..: 03:36				
MB Lot-Sample #: F1H240000-079 **Prep Batch #...:** 1236079						
Aluminum	ND	200	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AD
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Antimony	ND	10.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AU
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AA
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Barium	ND	50.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AE
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AF
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AH
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Calcium	ND	1000	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AG
		Dilution Factor: 1				
		Analysis Time..: 11:10				
Chromium	ND	10.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AK
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AJ
		Dilution Factor: 1				
		Analysis Time..: 22:16				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H230464 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AL
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Iron	ND	100	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AM
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Lead	ND	10.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AT
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Magnesium	ND	1000	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AN
		Dilution Factor: 1				
		Analysis Time..: 11:10				
Manganese	ND	15.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AP
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Nickel	ND	40.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AR
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Selenium	ND	15.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AV
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Silver	ND	10.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AC
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Sodium	ND	1000	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1AQ
		Dilution Factor: 1				
		Analysis Time..: 11:10				
Strontium	**1.0 J**	**5.0**	**ug/L**	**SW846 6010C**	**08/24-08/27/11**	**ML0JQ1AW**
		Dilution Factor: 1				
		Analysis Time..: 11:10				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1A0
		Dilution Factor: 1				
		Analysis Time..: 22:16				
Zinc	ND	20.0	ug/L	SW846 6010C	08/24-08/27/11	ML0JQ1A1
		Dilution Factor: 1				
		Analysis Time..: 22:16				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H300000-042 **Prep Batch #...:** 1242042						
Thallium	ND	20.0	ug/L	SW846 6010C	08/29-08/31/11	ML43Q1AA
		Dilution Factor: 1				
		Analysis Time..: 18:53				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H230464 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: ML2HP1AA		MB Lot-Sample #:	F1H230000-169	
	ND	0.20	mg/L	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Fluoride		Work Order #: ML2HR1AA		MB Lot-Sample #:	F1H230000-170	
	ND	0.10	mg/L	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Nitrate		Work Order #: ML2HV1AA		MB Lot-Sample #:	F1H230000-171	
	ND	0.020	mg/L	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Nitrite		Work Order #: ML2HX1AA		MB Lot-Sample #:	F1H230000-172	
	ND	0.020	mg/L	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Phosphate as P, Ortho		Work Order #: ML2H11AA		MB Lot-Sample #:	F1H230000-173	
	0.24 B	**0.50**	**mg/L**	**MCAWW 300.0A**	**08/20/11**	**1235173**
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Sulfate		Work Order #: ML2H21AA		MB Lot-Sample #:	F1H230000-174	
	0.052 B	**0.50**	**mg/L**	**MCAWW 300.0A**	**08/20/11**	**1235174**
		Dilution Factor: 1				
		Analysis Time..: 12:06				
Total Alkalinity		Work Order #: ML3DL1AA		MB Lot-Sample #:	F1H260000-032	
	ND	5.0	mg/L	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Alkalinity		Work Order #: ML51P1AA		MB Lot-Sample #:	F1H300000-085	
	ND	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: ML0CP1AA		MB Lot-Sample #:	F1H240000-026	
	ND	10.0	mg/L	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1				
		Analysis Time..: 00:00				

(Continued on next page)

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H230464 Matrix.....: WATER

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 Work Order #...: ML3581AC Matrix.....: WATER
LCS Lot-Sample#: F1H250000-192
Prep Date.....: 08/25/11 Analysis Date..: 08/25/11
Prep Batch #...: 1237192 Analysis Time..: 21:20
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
cis-1,3-Dichloropropene	104	(70 - 130)	SW846 8260B
Dibromochloromethane	102	(60 - 135)	SW846 8260B
Vinyl chloride	116	(50 - 145)	SW846 8260B
Bromomethane	153 a	(30 - 145)	SW846 8260B
Chloroethane	120	(60 - 135)	SW846 8260B
Acetone	105	(40 - 140)	SW846 8260B
1,1-Dichloroethene	100	(70 - 130)	SW846 8260B
Methylene chloride	90	(55 - 140)	SW846 8260B
Carbon disulfide	95	(35 - 160)	SW846 8260B
1,1-Dichloroethane	100	(70 - 135)	SW846 8260B
2-Butanone	105	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	98	(85 - 115)	SW846 8260B
Chloroform	99	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	101	(65 - 130)	SW846 8260B
Carbon tetrachloride	101	(65 - 140)	SW846 8260B
1,2-Dichloroethane	97	(70 - 130)	SW846 8260B
Benzene	99	(80 - 120)	SW846 8260B
Trichloroethene	95	(70 - 125)	SW846 8260B
1,2-Dichloropropane	97	(75 - 125)	SW846 8260B
Bromodichloromethane	100	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	100	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	106	(55 - 140)	SW846 8260B
Toluene	107	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	104	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	100	(75 - 125)	SW846 8260B
2-Hexanone	96	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	110	(60 - 135)	SW846 8260B
Chlorobenzene	100	(80 - 120)	SW846 8260B
Bromoform	106	(70 - 130)	SW846 8260B
Ethylbenzene	106	(75 - 125)	SW846 8260B
Styrene	110	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	106	(65 - 130)	SW846 8260B
Tetrachloroethene	99	(45 - 150)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 Work Order #...: ML3581AC Matrix.....: WATER
LCS Lot-Sample#: F1H250000-192

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichlorobenzene	**102**	**(70 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	110	(85 - 120)
Dibromofluoromethane	105	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 **Work Order #...:** ML7GA1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: F1I010000-011 ML7GA1AD-LCSD
Prep Date.....: 08/31/11 **Analysis Date..:** 09/01/11
Prep Batch #...: 1244011 **Analysis Time..:** 04:21
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1,1-Trichloroethane	**107**	**(65 - 130)**			**SW846 8260B**
	110	**(65 - 130)**	2.8	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	96	(85 - 120)
	102	(85 - 120)
Dibromofluoromethane	98	(85 - 115)
	95	(85 - 115)
1,2-Dichloroethane-d4	96	(70 - 120)
	91	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)
	103	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H240000-077 **Prep Batch #...:** 1236077					
Uranium	107	(80 - 120)	SW846 6020A	08/24-08/26/11	ML0JJ1AC
		Dilution Factor: 1		Analysis Time..: 03:43	
LCS Lot-Sample#: F1H240000-079 **Prep Batch #...:** 1236079					
Arsenic	102	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A2
		Dilution Factor: 1		Analysis Time..: 22:23	
Silver	92	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A3
		Dilution Factor: 1		Analysis Time..: 22:23	
Aluminum	106	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A4
		Dilution Factor: 1		Analysis Time..: 22:23	
Barium	107	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A5
		Dilution Factor: 1		Analysis Time..: 22:23	
Beryllium	115	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A6
		Dilution Factor: 1		Analysis Time..: 22:23	
Calcium	106	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A7
		Dilution Factor: 1		Analysis Time..: 11:16	
Cadmium	106	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A8
		Dilution Factor: 1		Analysis Time..: 22:23	
Cobalt	102	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1A9
		Dilution Factor: 1		Analysis Time..: 22:23	
Chromium	103	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CA
		Dilution Factor: 1		Analysis Time..: 22:23	
Copper	102	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CC
		Dilution Factor: 1		Analysis Time..: 22:23	
Iron	108	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CD
		Dilution Factor: 1		Analysis Time..: 22:23	
Magnesium	100	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CE
		Dilution Factor: 1		Analysis Time..: 11:16	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	106	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CF
		Dilution Factor: 1	Analysis Time..: 22:23		
Sodium	104	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CG
		Dilution Factor: 1	Analysis Time..: 11:16		
Nickel	103	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CH
		Dilution Factor: 1	Analysis Time..: 22:23		
Lead	102	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CJ
		Dilution Factor: 1	Analysis Time..: 22:23		
Antimony	104	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CK
		Dilution Factor: 1	Analysis Time..: 22:23		
Selenium	104	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CL
		Dilution Factor: 1	Analysis Time..: 22:23		
Strontium	99	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CM
		Dilution Factor: 1	Analysis Time..: 11:16		
Vanadium	104	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CP
		Dilution Factor: 1	Analysis Time..: 22:23		
Zinc	112	(80 - 120)	SW846 6010C	08/24-08/27/11	ML0JQ1CQ
		Dilution Factor: 1	Analysis Time..: 22:23		
LCS Lot-Sample#: F1H300000-042 **Prep Batch #...:** 1242042					
Thallium	102	(80 - 120)	SW846 6010C	08/29-08/31/11	ML43Q1AC
		Dilution Factor: 1	Analysis Time..: 18:59		

NOTE(S):

Calculations are performed before rounding to avnid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230464 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: ML2HP1AC	LCS Lot-Sample#: F1H230000-169		
	96	(90 - 110)	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 1	Analysis Time..: 11:51		
Fluoride		Work Order #: ML2HR1AC	LCS Lot-Sample#: F1H230000-170		
	98	(90 - 110)	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 1	Analysis Time..: 11:51		
Nitrate		Work Order #: ML2HV1AC	LCS Lot-Sample#: F1H230000-171		
	100	(90 - 110)	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1	Analysis Time..: 11:51		
Nitrite		Work Order #: ML2HX1AC	LCS Lot-Sample#: F1H230000-172		
	99	(90 - 110)	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 1	Analysis Time..: 11:51		
Phosphate as P, Ortho		Work Order #: ML2H11AC	LCS Lot-Sample#: F1H230000-173		
	98	(90 - 110)	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1	Analysis Time..: 11:51		
Sulfate		Work Order #: ML2H21AC	LCS Lot-Sample#: F1H230000-174		
	96	(90 - 110)	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 1	Analysis Time..: 11:51		
Total Alkalinity		Work Order #: ML3DL1AC	LCS Lot-Sample#: F1H260000-032		
	94	(90 - 110)	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: ML3DL1AD	LCS Lot-Sample#: F1H260000-032		
	94	(90 - 110)	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: ML51P1AC	LCS Lot-Sample#: F1H300000-085		
	94	(90 - 110)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: ML51P1AD	LCS Lot-Sample#: F1H300000-085		
	94	(90 - 110)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230464 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids		Work Order #: ML0CP1AC LCS Lot-Sample#: F1H240000-026			
	98	(90 - 113)	MCAWW 160.1	08/24-08/25/11	1236026
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 Work Order #...: MLXMN1C4-MS Matrix.....: WATER
MS Lot-Sample #: F1H230464-002 MLXMN1C5-MSD
Date Sampled...: 08/19/11 09:15 Date Received..: 08/23/11
Prep Date.....: 08/25/11 Analysis Date..: 08/26/11
Prep Batch #...: 1237192 Analysis Time..: 01:37
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	96	(70 - 130)			SW846 8260B
	99	(70 - 130)	2.1	(0-20)	SW846 8260B
Dibromochloromethane	105	(60 - 135)			SW846 8260B
	102	(60 - 135)	2.0	(0-20)	SW846 8260B
Vinyl chloride	106	(50 - 145)			SW846 8260B
	110	(50 - 145)	4.4	(0-20)	SW846 8260B
Bromomethane	144	(30 - 145)			SW846 8260B
	137	(30 - 145)	5.1	(0-20)	SW846 8260B
Chloroethane	117	(60 - 135)			SW846 8260B
	120	(60 - 135)	2.1	(0-20)	SW846 8260B
Acetone	103	(40 - 140)			SW846 8260B
	102	(40 - 140)	0.97	(0-20)	SW846 8260B
1,1-Dichloroethene	108	(70 - 130)			SW846 8260B
	106	(70 - 130)	2.0	(0-20)	SW846 8260B
Methylene chloride	93	(55 - 140)			SW846 8260B
	92	(55 - 140)	0.97	(0-20)	SW846 8260B
Carbon disulfide	105	(35 - 160)			SW846 8260B
	104	(35 - 160)	0.57	(0-20)	SW846 8260B
1,1-Dichloroethane	103	(70 - 135)			SW846 8260B
	102	(70 - 135)	1.3	(0-20)	SW846 8260B
2-Butanone	100	(30 - 150)			SW846 8260B
	104	(30 - 150)	4.7	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	99	(85 - 115)			SW846 8260B
	100	(85 - 115)	0.90	(0-20)	SW846 8260B
Chloroform	100	(65 - 135)			SW846 8260B
	102	(65 - 135)	1.9	(0-20)	SW846 8260B
1,1,1-Trichloroethane	100	(65 - 130)			SW846 8260B
	103	(65 - 130)	2.8	(0-20)	SW846 8260B
Carbon tetrachloride	98	(65 - 140)			SW846 8260B
	98	(65 - 140)	0.01	(0-20)	SW846 8260B
1,2-Dichloroethane	100	(70 - 130)			SW846 8260B
	101	(70 - 130)	1.2	(0-20)	SW846 8260B
Benzene	102	(80 - 120)			SW846 8260B
	101	(80 - 120)	0.29	(0-20)	SW846 8260B
Trichloroethene	95	(70 - 125)			SW846 8260B
	97	(70 - 125)	1.4	(0-20)	SW846 8260B
1,2-Dichloropropane	101	(75 - 125)			SW846 8260B
	102	(75 - 125)	0.59	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H230464 Work Order #...: MLXMN1C4-MS Matrix.....: WATER
MS Lot-Sample #: F1H230464-002 MLXMN1C5-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	100	(75 - 120)			SW846 8260B
	100	(75 - 120)	0.19	(0-20)	SW846 8260B
1,1,2-Trichloroethane	105	(75 - 125)			SW846 8260B
	103	(75 - 125)	2.3	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	102	(55 - 140)			SW846 8260B
	103	(55 - 140)	1.5	(0-20)	SW846 8260B
Toluene	106	(75 - 120)			SW846 8260B
	106	(75 - 120)	0.09	(0-20)	SW846 8260B
1,3-Dichlorobenzene	100	(75 - 125)			SW846 8260B
	104	(75 - 125)	3.7	(0-20)	SW846 8260B
1,4-Dichlorobenzene	99	(75 - 125)			SW846 8260B
	100	(75 - 125)	1.9	(0-20)	SW846 8260B
2-Hexanone	101	(55 - 130)			SW846 8260B
	93	(55 - 130)	8.2	(0-20)	SW846 8260B
4-Methyl-2-pentanone	112	(60 - 135)			SW846 8260B
	111	(60 - 135)	0.80	(0-20)	SW846 8260B
Chlorobenzene	101	(80 - 120)			SW846 8260B
	102	(80 - 120)	0.78	(0-20)	SW846 8260B
Bromoform	106	(70 - 130)			SW846 8260B
	104	(70 - 130)	1.9	(0-20)	SW846 8260B
Ethylbenzene	106	(75 - 125)			SW846 8260B
	106	(75 - 125)	0.28	(0-20)	SW846 8260B
Styrene	112	(65 - 135)			SW846 8260B
	112	(65 - 135)	0.17	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	104	(65 - 130)			SW846 8260B
	106	(65 - 130)	1.1	(0-20)	SW846 8260B
Tetrachloroethene	98	(45 - 150)			SW846 8260B
	100	(45 - 150)	1.8	(0-20)	SW846 8260B
1,2-Dichlorobenzene	103	(70 - 120)			SW846 8260B
	105	(70 - 120)	1.6	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(85 - 120)
	108	(85 - 120)
Dibromofluoromethane	106	(85 - 115)
	108	(85 - 115)
1,2-Dichloroethane-d4	102	(70 - 120)
	106	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)
	100	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER
Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H230464-002 **Prep Batch #...:** 1236077							
Uranium	109	(80 - 120)			SW846 6020A	08/24-08/26/11	MLXMN1CR
	109	(80 - 120)	0.45	(0-20)	SW846 6020A	08/24-08/26/11	MLXMN1CT
		Dilution Factor: 1					
		Analysis Time..: 04:09					
MS Lot-Sample #: F1H230464-002 **Prep Batch #...:** 1236079							
Aluminum	121 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DD
	124 N	(80 - 120)	2.5	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DE
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Antimony	107	(80 - 120)			SW846 6010C	08/24-08/30/11	MLXMN1EA
	103	(80 - 120)	3.3	(0-20)	SW846 6010C	08/24-08/30/11	MLXMN1EC
		Dilution Factor: 5					
		Analysis Time..: 12:36					
Arsenic	101	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1C8
	103	(80 - 120)	1.6	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1C9
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Barium	103	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DF
	104	(80 - 120)	0.35	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DG
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Beryllium	107	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DH
	108	(80 - 120)	0.89	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DJ
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Cadmium	96	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DM
	98	(80 - 120)	1.7	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DN
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Calcium	176 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DK
	184 N	(80 - 120)	0.19	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DL
		Dilution Factor: 10					
		Analysis Time..: 14:15					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER
Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	95	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DR
	96	(80 - 120)	1.4	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DT
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Cobalt	92	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DP
	93	(80 - 120)	1.6	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DQ
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Copper	98	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DU
	99	(80 - 120)	1.0	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DV
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Iron	100	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DW
	103	(80 - 120)	2.1	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DX
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Lead	92	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1D8
	93	(80 - 120)	1.7	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1D9
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Magnesium	111	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1D0
	115	(80 - 120)	0.37	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1D1
		Dilution Factor: 10					
		Analysis Time..: 14:15					
Manganese	97	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1D2
	99	(80 - 120)	1.4	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1D3
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Nickel	92	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1D6
	94	(80 - 120)	1.7	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1D7
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Selenium	108	(80 - 120)			SW846 6010C	08/24-08/30/11	MLXMN1CF
	104	(80 - 120)	3.4	(0-20)	SW846 6010C	08/24-08/30/11	MLXMN1CG
		Dilution Factor: 5					
		Analysis Time..: 12:36					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER
Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	90	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1DA
	91	(80 - 120)	1.1	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1DC
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Sodium	137 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1D4
	140 N	(80 - 120)	0.16	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1D5
		Dilution Factor: 10					
		Analysis Time..: 14:15					
Strontium	115	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1CH
	105	(80 - 120)	0.62	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1CJ
		Dilution Factor: 10					
		Analysis Time..: 14:15					
Vanadium	98	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1CM
	99	(80 - 120)	1.1	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1CN
		Dilution Factor: 1					
		Analysis Time..: 23:02					
Zinc	106	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXMN1CP
	107	(80 - 120)	1.4	(0-20)	SW846 6010C	08/24-08/27/11	MLXMN1CQ
		Dilution Factor: 1					
		Analysis Time..: 23:02					

MS Lot-Sample #: F1H230464-002 **Prep Batch #...:** 1242042

Thallium	90	(80 - 120)			SW846 6010C	08/29-08/31/11	MLXMN1E3
	92	(80 - 120)	1.2	(0-20)	SW846 6010C	08/29-08/31/11	MLXMN1E4
		Dilution Factor: 1					
		Analysis Time..: 19:38					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER
Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H230464-010 **Prep Batch #...:** 1236077							
Uranium	103	(80 - 120)			SW846 6020A	08/24-08/26/11	MLXN61CH
	101	(80 - 120)	1.3	(0-20)	SW846 6020A	08/24-08/26/11	MLXN61CJ
		Dilution Factor: 1					
		Analysis Time..: 05:23					
MS Lot-Sample #: F1H230464-010 **Prep Batch #...:** 1236079							
Aluminum	108	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61CR
	107	(80 - 120)	1.3	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61CT
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Antimony	104	(80 - 120)			SW846 6010C	08/24-08/30/11	MLXN61A4
	106	(80 - 120)	2.0	(0-20)	SW846 6010C	08/24-08/30/11	MLXN61A5
		Dilution Factor: 5					
		Analysis Time..: 12:55					
Arsenic	104	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61CM
	103	(80 - 120)	0.86	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61CN
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Barium	106	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61CU
	105	(80 - 120)	0.88	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61CV
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Beryllium	111	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61CW
	110	(80 - 120)	0.62	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61CX
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Cadmium	100	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61C2
	99	(80 - 120)	0.81	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61C3
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Calcium	8.7 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXN61C0
	0 N	(80 - 120)	0.0	(0-20)	SW846 6010C	08/24-08/27/11	MLXN61C1
		Dilution Factor: 10					
		Analysis Time..: 15:25					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER
Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	98	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61C6
	97	(80 - 120)	0.94	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61C7
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Cobalt	96	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61C4
	95	(80 - 120)	1.1	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61C5
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Copper	101	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61C8
	100	(80 - 120)	1.2	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61C9
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Iron	102	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61DA
	101	(80 - 120)	0.73	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61DC
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Lead	96	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61DM
	95	(80 - 120)	1.6	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61DN
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Magnesium	67 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXN61DD
	70 N	(80 - 120)	0.34	(0-20)	SW846 6010C	08/24-08/27/11	MLXN61DE
		Dilution Factor: 10					
		Analysis Time..: 15:25					
Manganese	101	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61DF
	100	(80 - 120)	0.85	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61DG
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Nickel	95	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61DK
	94	(80 - 120)	1.2	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61DL
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Selenium	105	(80 - 120)			SW846 6010C	08/24-08/30/11	MLXN61A6
	105	(80 - 120)	0.11	(0-20)	SW846 6010C	08/24-08/30/11	MLXN61A7
		Dilution Factor: 5					
		Analysis Time..: 12:55					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H230464 **Matrix.....:** WATER
Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	92	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61CP
	91	(80 - 120)	0.90	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61CQ
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Sodium	35 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXN61DH
	25 N	(80 - 120)	0.54	(0-20)	SW846 6010C	08/24-08/27/11	MLXN61DJ
		Dilution Factor: 10					
		Analysis Time..: 15:25					
Strontium	35 N	(80 - 120)			SW846 6010C	08/24-08/27/11	MLXN61A8
	35 N	(80 - 120)	0.0	(0-20)	SW846 6010C	08/24-08/27/11	MLXN61A9
		Dilution Factor: 10					
		Analysis Time..: 15:25					
Vanadium	101	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61CD
	100	(80 - 120)	0.83	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61CE
		Dilution Factor: 1					
		Analysis Time..: 00:12					
Zinc	110	(80 - 120)			SW846 6010C	08/24-08/28/11	MLXN61CF
	109	(80 - 120)	1.2	(0-20)	SW846 6010C	08/24-08/28/11	MLXN61CG
		Dilution Factor: 1					
		Analysis Time..: 00:12					
MS Lot-Sample #: F1H230464-010 **Prep Batch #...:** 1242042							
Thallium	94	(80 - 120)			SW846 6010C	08/29-08/31/11	MLXN61DQ
	93	(80 - 120)	0.22	(0-20)	SW846 6010C	08/29-08/31/11	MLXN61DR
		Dilution Factor: 1					
		Analysis Time..: 20:49					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230464 Matrix.....: WATER
Date Sampled...: 08/19/11 09:15 Date Received..: 08/23/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: MLXMN1EM		MS Lot-Sample #: F1H230464-002	
	103	(90 - 110)	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 200	Analysis Time..: 07:18		
Fluoride		Work Order #...: MLXMN1EP		MS Lot-Sample #: F1H230464-002	
	78 N	(90 - 110)	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 1	Analysis Time..: 06:32		
Nitrate		Work Order #...: MLXMN1ER		MS Lot-Sample #: F1H230464-002	
	94	(90 - 110)	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1	Analysis Time..: 06:32		
Nitrite		Work Order #...: MLXMN1EU		MS Lot-Sample #: F1H230464-002	
	54 N	(90 - 110)	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 10	Analysis Time..: 07:03		
Phosphate as P, Ortho		Work Order #...: MLXMN1EW		MS Lot-Sample #: F1H230464-002	
	11 N	(90 - 110)	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1	Analysis Time..: 06:32		
Sulfate		Work Order #...: MLXMN1E0		MS Lot-Sample #: F1H230464-002	
	95	(90 - 110)	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 200	Analysis Time..: 07:18		
Total Alkalinity		Work Order #...: MLW9L1EM		MS Lot-Sample #: F1H230407-007	
	98	(80 - 120)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #...: MLXMN1EH		MS Lot-Sample #: F1H230464-002	
	144 N	(80 - 120)	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230464 **Work Order #...:** MLXMN-SMP MLXMN-DUP **Matrix.....:** WATER

Date Sampled...: 08/19/11 09:15 **Date Received..:** 08/23/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H230464-002		
	455	459	mg/L	0.81	(0-20)	MCAWW 300.0A	08/20/11	1235169
		Dilution Factor: 200				Analysis Time..: 07:18		
Fluoride						SD Lot-Sample #: F1H230464-002		
	0.64	0.62	mg/L	2.2	(0-20)	MCAWW 300.0A	08/20/11	1235170
		Dilution Factor: 1				Analysis Time..: 06:32		
Nitrate						SD Lot-Sample #: F1H230464-002		
	0.018 B	0.022	mg/L	21	(0-20)	MCAWW 300.0A	08/20/11	1235171
		Dilution Factor: 1				Analysis Time..: 06:32		
Nitrite						SD Lot-Sample #: F1H230464-002		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/20/11	1235172
		Dilution Factor: 10				Analysis Time..: 07:03		
Phosphate as P, Ortho						SD Lot-Sample #: F1H230464-002		
	0.087 B,J	ND	mg/L	200	(0-20)	MCAWW 300.0A	08/20/11	1235173
		Dilution Factor: 1				Analysis Time..: 06:32		
Sulfate						SD Lot-Sample #: F1H230464-002		
	413 J	414	mg/L	0.13	(0-20)	MCAWW 300.0A	08/20/11	1235174
		Dilution Factor: 200				Analysis Time..: 07:18		
Total Alkalinity						SD Lot-Sample #: F1H230464-002		
	382	388	mg/L	1.5	(0-20)	MCAWW 310.1	08/26/11	1238032
		Dilution Factor: 1				Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230464 **Work Order #...:** MLT47-SMP MLT47-DUP **Matrix.....:** WATER

Date Sampled...: 08/18/11 08:25 **Date Received..:** 08/19/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H190431-007		
	1340	1380	mg/L	2.4	(0-0.0)	MCAWW 160.1	08/24-08/25/11	1236026
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H230464 **Work Order #...:** MLW9L-SMP MLW9L-DUP **Matrix.....:** WATER

Date Sampled...: 08/22/11 11:00 **Date Received..:** 08/23/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #:	F1H230407-007	
	254	254	mg/L	0.16	(0-20)	MCAWW 310.1	08/30/11	1242085

Dilution Factor: 1 Analysis Time..: 00:00

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW607D001

Radiochemistry

Lab Sample ID: F1H230464-001
Work Order: MLXMK
Matrix: WATER

Date Collected: 08/19/11 0845
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238042		Yld % 45
Uranium 234	5.35		0.74	0.10	0.09	08/26/11	08/30/11
Uranium 235/236	0.24		0.14	0.10	0.05	08/26/11	08/30/11
Uranium 238	4.99		0.70	0.10	0.12	08/26/11	08/30/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001

Radiochemistry

Lab Sample ID: F1H230464-002
Work Order: MLXMN
Matrix: WATER

Date Collected: 08/19/11 0915
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238042		Yld % 71
Uranium 234	0.097		0.069	0.100	0.077	08/26/11	08/30/11
Uranium 235/236	0.015	U	0.036	0.100	0.071	08/26/11	08/30/11
Uranium 238	0.070		0.056	0.100	0.057	08/26/11	08/30/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW16D0001

Radiochemistry

Lab Sample ID: F1H230464-003
Work Order: MLXM1
Matrix: WATER

Date Collected: 08/19/11 1030
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238042		Yld % 51
Uranium 234	8.8		1.0	0.1	0.09	08/26/11	09/01/11
Uranium 235/236	0.44		0.18	0.10	0.08	08/26/11	09/01/11
Uranium 238	9.7		1.1	0.1	0.07	08/26/11	09/01/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001

Radiochemistry

Lab Sample ID: F1H230464-004
Work Order: MLXM3
Matrix: WATER

Date Collected: 08/19/11 1200
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238042		Yld % 73
Uranium 234	14.9		1.4	0.1	0.06	08/26/11	08/30/11
Uranium 235/236	0.87		0.21	0.10	0.05	08/26/11	08/30/11
Uranium 238	14.4		1.4	0.1	0.04	08/26/11	08/30/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW9004

Radiochemistry

Lab Sample ID: F1H230464-005
Work Order: MLXM6
Matrix: WATER

Date Collected: 08/19/11 0000
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238042		Yld % 58
Uranium 234	8.38		0.95	0.10	0.08	08/26/11	08/30/11
Uranium 235/236	0.42		0.16	0.10	0.08	08/26/11	08/30/11
Uranium 238	8.88		0.99	0.10	0.06	08/26/11	08/30/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001

Radiochemistry

Lab Sample ID: F1H230464-006
Work Order: MLXNA
Matrix: WATER

Date Collected: 08/19/11 1340
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238042		Yld % 62
Uranium 234	0.89		0.21	0.10	0.07	08/26/11	08/30/11
Uranium 235/236	0.041		0.047	0.100	0.037	08/26/11	08/30/11
Uranium 238	0.39		0.14	0.10	0.06	08/26/11	08/30/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW607D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230464-009
Work Order: MLXN1
Matrix: WATER

Date Collected: 08/19/11 0845
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238042		Yld % 61
Uranium 234	3.88		0.53	0.10	0.08	08/26/11	08/30/11
Uranium 235/236	0.119		0.085	0.100	0.074	08/26/11	08/30/11
Uranium 238	4.04		0.55	0.10	0.08	08/26/11	08/30/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW703DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230464-010
Work Order: MLXN6
Matrix: WATER

Date Collected: 08/19/11 0915
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238069		Yld % 65
Uranium 234	0.023	U	0.037	0.100	0.061	08/26/11	08/31/11
Uranium 235/236	0.0	U	0.013	0.100	0.035	08/26/11	08/31/11
Uranium 238	0.028	U	0.036	0.100	0.047	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW16D0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230464-011
Work Order: MLXN8
Matrix: WATER

Date Collected: 08/19/11 1030
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238069		Yld % 51
Uranium 234	8.9		1.0	0.1	0.06	08/26/11	08/31/11
Uranium 235/236	0.45		0.18	0.10	0.05	08/26/11	08/31/11
Uranium 238	10.2		1.1	0.1	0.04	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW40001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230464-012
Work Order: MLXPA
Matrix: WATER

Date Collected: 08/19/11 1200
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238069		Yld % 63
Uranium 234	16.1		1.6	0.1	0.07	08/26/11	08/31/11
Uranium 235/236	0.80		0.22	0.10	0.06	08/26/11	08/31/11
Uranium 238	16.7		1.6	0.1	0.05	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A03MW9004 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230464-013
Work Order: MLXPC
Matrix: WATER

Date Collected: 08/19/11 0000
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238069		Yld % 52
Uranium 234	9.2		1.0	0.1	0.06	08/26/11	08/31/11
Uranium 235/236	0.58		0.20	0.10	0.04	08/26/11	08/31/11
Uranium 238	10.1		1.1	0.1	0.08	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04AMW701DD0001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H230464-014
Work Order: MLXPD
Matrix: WATER

Date Collected: 08/19/11 1340
Date Received: 08/23/11 0905

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238069		Yld % 72
Uranium 234	0.77		0.18	0.10	0.05	08/26/11	08/31/11
Uranium 235/236	0.036		0.041	0.100	0.032	08/26/11	08/31/11
Uranium 238	0.46		0.14	0.10	0.04	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H230464
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**Batch # 1238042**		**Yld % 74**	**F1H260000-042B**
Uranium 234	0.007	U	0.027	0.100	0.060	08/26/11	08/30/11
Uranium 235/236	-0.0027	U	0.0055	0.100	0.050	08/26/11	08/30/11
Uranium 238	0.009	U	0.026	0.100	0.056	08/26/11	08/30/11
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**Batch # 1238069**		**Yld % 100**	**F1H260000-069B**
Uranium 234	0.021	U	0.029	0.100	0.045	08/26/11	08/31/11
Uranium 235/236	0.004	U	0.019	0.100	0.047	08/26/11	08/31/11
Uranium 238	0.004	U	0.015	0.100	0.038	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H230464
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H260000-042C**
Uranium 234	3.26	3.17	0.41	0.05	94	97	(76 - 136)
Uranium 238	3.39	3.20	0.41	0.04	94	95	(76 - 134)
	Batch #:	1238042		Analysis Date:	08/30/11		
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F1H260000-069C**
Uranium 234	3.26	3.06	0.40	0.05	92	94	(76 - 136)
Uranium 238	3.39	3.36	0.42	0.04	92	99	(76 - 134)
	Batch #:	1238069		Analysis Date:	08/31/11		

NOTE (S)

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

MATRIX SPIKE/MATRIX SPIKE DUPLICATE REPORT

Radiochemistry

Client Lot ID: F1H230464
Matrix: WATER

Date Sampled: 08/19/11 0915
Date Received: 08/23/11 0905

Parameter		Spike Amount	SPIKE Result	Total Uncert. (2 σ+/-)	Spike Yld	SAMPLE Result		Total Uncert. (2σ +/-)	QC Sample ID % Yld	%Rec	QC Control Limits
Iso URANIUM (LONG CT) DOE A				**pCi/L**		**A-01-R MOD**				**F1H230464-002**	
Uranium 234		3.26	3.12	0.43	73	0.097		0.069	71	93	(65 - 146)
	Spk2	3.26	3.59	0.50	62	0.097		0.069	71	107	(65 - 146)
									Precision:	14	%RPD
Uranium 238		3.39	3.14	0.43	73	0.070		0.056	71	90	(68 - 143)
	Spk2	3.39	3.34	0.47	62	0.070		0.056	71	96	(68 - 143)
									Precision:	6	%RPD
		Batch #:	1238042		Analysis date:		08/30/11				
Iso URANIUM (LONG CT) DOE A				**pCi/L**		**A-01-R MOD**				**F1H230464-010**	
Uranium 234		3.26	2.71	0.40	69	0.023	U	0.037	65	82	(65 - 146)
	Spk2	3.26	3.11	0.45	65	0.023	U	0.037	65	95	(65 - 146)
									Precision:	14	%RPD
Uranium 238		3.39	2.84	0.41	69	0.028	U	0.036	65	83	(68 - 143)
	Spk2	3.39	3.18	0.46	65	0.028	U	0.036	65	93	(68 - 143)
									Precision:	11	%RPD
		Batch #:	1238069		Analysis date:		08/31/11				

NOTE(S)

Data are incomplete without the case narrative.

Calculations are performed before rounding to avoid round-off error in calculated results

U Result is less than the sample detection limit.

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
#SMPS in LOT: 14 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A03MW607D001			2011-08-19 / 845	MLXMK	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS,V

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A03MW703DD0001			2011-08-19 / 915	MLXMN	WATER

SAMPLE COMMENTS:

ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS,V

Project Manager: LMF
Quote #: 89251
SDG:
Project: 140415
Guterl Steel
PO#: 697886
Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

	XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
D	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
D	XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
D	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
S	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS,V

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-20

Project: 140415
Guterl Steel
Analytical Due Date: 2011-08-31

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-09-02

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 14
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium listead of 200.8

S	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
S	XX	QK	SW846 8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
S	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
S	XX	C8	MCAW W 300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	C9	MCAW W 300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	CX	MCAW W 300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	CY	MCAW W 300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	DO	MCAW W 300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	GO	MCAW W 300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
S	XX	VC	MCAW W 310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	C8	MCAW W 300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	C9	MCAW W 300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	CX	MCAW W 300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	CY	MCAW W 300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	DO	MCAW W 300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	GO	MCAW W 300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
X	XX	VC	MCAW W 310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A03MW16D0001			2011-08-19 / 1030	MLXM1	WATER

SAMPLE COMMENTS:

	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	A02MW40001			2011-08-19 / 1200	MLXM3	WATER

SAMPLE COMMENTS:

CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS,V

Project Manager: LMF
Quote #: 89251
SDG:
Project: 140415
Guterl Steel
PO#: 697886
Report to: Kevin Cronin
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	A03MW9004			2011-08-19 / 0	MLXM6	WATER

SAMPLE COMMENTS:

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	A04AMW701DD0001			2011-08-19 / 1340	MLXNA	WATER

SAMPLE COMMENTS:

MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,2-98,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	A04BMW707DD0001			2011-08-19 / 1405	MLXND	WATER

SAMPLE COMMENTS:

XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: 2-98

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-20

Project: 140415
Guterl Steel
Analytical Due Date: 2011-08-31

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-09-02

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 14
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	TRIP BLANK #4			2011-08-19 / 0	MLXNE	WATER

SAMPLE COMMENTS:

XX	QK	SW846 8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	A03MW607D0001 DISSOLVED			2011-08-19 / 845	MLXN1	WATER

SAMPLE COMMENTS:

NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,METS

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-20

Project: 140415
Guterl Steel
Analytical Due Date: 2011-08-31

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-09-02

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 14
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium listead of 200.8

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
10	A03MW703DD0001 DISSOLVED			2011-08-19 / 915	MLXN6	WATER

SAMPLE COMMENTS:

BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	
D MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

D	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
D	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
S	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,METS

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-08-20

Project: 140415
Guterl Steel
Analytical Due Date: 2011-08-31

PO#: 697886
Report to: Kevin Cronin
Report Due Date: 2011-09-02

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 14
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

S	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
S	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
11	A03MW16D0001 DISSOLVED			2011-08-19 / 1030	MLXN8	WATER

SAMPLE COMMENTS:

	ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706 Shaw Environmental & Infrastructure Inc

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin

#SMPS In LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

12 A02MW40001 DISSOLVED 2011-08-19 / 1200 MLXPA WATER

SAMPLE COMMENTS:

MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
13	A03MW9004 DISSOLVED			2011-08-19 / 0	MLXPC	WATER

SAMPLE COMMENTS:

ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 14

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
14	A04AMW701DD0001 DISSOLVED			2011-08-19 / 1340	MLXPD	WATER

SAMPLE COMMENTS:

TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H230464

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R16,METS

Project Manager: LMF
Project: 140415
PO#: 697886
Client: 522706

Quote #: 89251 SDG:
Guterl Steel
Report to: Kevin Cronin
Shaw Environmental & Infrastructure Inc

Date Received: 2011-08-20
Analytical Due Date: 2011-08-31
Report Due Date: 2011-09-02
Report Type: D Expanded Deliverable
#SMPS In LOT: 14 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

estAmerica St. Louis
715 Rider Trail North
rth City, MO 63045
one 314.298.8566 fax 314.298.8757

CUL 208

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/19/2011	COC No: 012
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	**Analysis Turnaround Time**			Job No. 140416.09020100
ncinnati, Ohio 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below ____			SDG No.
3) 782-4807 FAX	☒ 2 weeks			
oject Name: Former Guterl Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
) #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (a-spec)	Isotopic Uranium (a-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
3MW607D0001	8/19/2011	0845	Grab	GW	7	X		X	X	X	X	X	X						
3MW703DD0001	8/19/2011	0915	Grab	GW	10	X		X	X	X	X	X	X	X					
3MW703DD0001MS	8/19/2011	0915	Grab	GW	10	X		X	X	X	X	X	X	X					
3MW703DD0001MSD	8/19/2011	0915	Grab	GW	10	X		X	X	X	X	X	X	X					
3MW16D0001	8/19/2011	1030	Grab	GW	7	X		X	X	X	X	X	X						
2MW40001	8/19/2011	1200	Grab	GW	10	X		X	X	X	X	X	X	X					
3MW9004	8/19/2011	--	Grab	GW	7	X		X	X	X	X	X	X						
4AMW701DD0001	8/19/2011	1340	Grab	GW	10	X		X	X	X	X	X	X	X					
4BMW707DD0001	8/19/2011	1405	Grab	GW	1						X	X	X	X					
p Blank #4	8/19/2011	--	TB	--	1									X					

servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

sible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☒ *Disposal By Lab* ☐ *Archive For* _____ *Months*

ecial Instructions/QC Requirements & Comments:

linquished by: Kevin Cronin	Company: Shaw E & I. Inc.	Date/Time: 8/19/11 1610	Received by:	Company: TA Buffalo	Date/Time: 8/19/11 16:07
inquished by:	Company: TA Buffalo	Date/Time: 8/19/11 17:00	Received by:	Company: TA STL	Date/Time: 8/20/11 0830
inquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

107 of 108

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): FIH230464 TestAmerica St. Louis

CUR Form #: 2 0 8

CONDITION UPON RECEIPT FORM

Client: SHAW

Quote No: 89251

COC/RFA No: 012

Initiated By: NVO | MB Date: 8/20/11 Time: 0830

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: Y (N)

Shipping # (s):*				Sample Temperature (s):**			
1.	4485 0258 4752	6.		1.	2	6.	
2.	4598 9397 6570 MPS - received 8-23-11@0905			2.	ambient	7.	
3.		8.		3.	↓	8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- if not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N MB 8-23-11	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	Y (N) MB 8-23-11	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

ONLY REC'D 1 COOLER WHICH CONTAINED 1X500P (ANIONS) FOR EACH SAMPLE ID. ALSO ALL VOA EXCEPT FOR SAMPLE ID A04BMW707DD0001 -- PLEASE LOG W/O SAMPLE. LHF 8/25/11
Received rest of sample on 8-23-11@0905 except VOA A04BW707DD0001 AM
Received following w/ pH ~ 7 - added HNO3 from lot K11059
A03MW707 00001 (2XLP) unfiltered
A03MW703 DD0001 (1XLP) filtered
Per LF MS/MSD on COC = MS/MSD, not SOP
LOT FIH 1004:
Sample #3 COC & Sample do not match
COC = A03MW1[illegible]0001 Sample = A03MW1[illegible]
MB 8-25-11

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/25/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guterl Steel

Lot #: F1H240450

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

September 7, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1H240450

This report contains the analytical results for the eight samples received under chain of custody by TestAmerica in St. Louis on August 24, 2011. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1243089
Acetonitrile and Tetrahydrofuran were removed from the initial calibration lowest point due to poor response. Addtionally, Acetone, Methyl acetate, n-Butanol and 1,4-Dioxane were removed from the lowest 2 points.

Isobutanol was removed from the initial calibration highest point due to elevated response. Additionally, the surrogate compounds (Dibromofluoromethane, 1,2-Dichloroethane-d4, Toluene-d8 and 4-Bromofluorobenzene) were not spiked at the initial calibration highest point because the recoveries do not warrant the high concentration.

The initial calibration still meets the minimum number of points and the reporting limits required. The compounds were removed within TestAmerica's selection of points policy.

The mininium RRF for 1,1,2,2-Tetrachloroethane is below the QC limit.

The CCV recovery was outside the upper QC limit (greater than 20% D) for Bromomethane, Trichlorofluoromethane and Chloroethane indicating a potential high bias for those analytes in the samples associated with this CCV. Bromomethane and Trichlorofluoromethane were not detected above the reporting limit and so this excursion does not affect the results. Chloroethane was detected above the reporting limit in samples F1H240450-001 and 003. Sample F1H240450-003 will be re-analyzed.

The LCS recovery for Bromomethane is outside the upper QC limit, indicating a potential positive bias for that analyte. This analyte was not observed above the reporting limit in the associated samples; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1H240450 (1): A02MW9005
F1H240450 (3): A02MW020001
F1H240450 (5): TRIP BLANK#6

Batch: 1244139
The CCV %D for 1,4-Dioxane, 2-Hexanone, Cyclohexanone and n-Butylbenzene is outside the established QC limits. The analytes are not part of the -re-analysis request and thus this excursion does not affect the data.

There was insufficient sample volume to perform an MS/MSD analysis. An LCS/LCSD was performed to demonstrate accuracy and replicate precision.

The sample and method blank surrogate recovery is outside established QC limits. The sample target analyte (Chloroethane) is not associated with this surrogate excursion.

Affected Samples:
F1H240450 (3): A02MW020001

ICP-MS (SW846-6020)

Batch: 1237036
The samples were analyzed at a dilution due to high concentrations of target and interfering analytes causing internal standard and QC failures when run at a lesser dilution. The reporting limit has been adjusted for the dilution.

Affected Samples:
F1H240450 (4): A04BMW707DD0001

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1237037
The MS and MSD recovery for calcium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

The concentration of strontium in the CCB is greater than 3 times the MDL. The samples associated with this CCB exhibit concentrations greater than ten times the concentrations observed in the CCB.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H240450 (1): A02MW9005
F1H240450 (2): A02MW010001
F1H240450 (3): A02MW020001
F1H240450 (6): A02MW9005 DISSOLVED
F1H240450 (7): A02MW010001 DISSOLVED
F1H240450 (8): A02MW020001 DISSOLVED

Chloride (MCAWW 300.0A)

Batch: 1236153
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H240450 (1): A02MW9005
F1H240450 (2): A02MW010001
F1H240450 (3): A02MW020001

Sulfate (MCAWW 300.0A)

Batch: 1236158
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H240450 (1): A02MW9005
F1H240450 (2): A02MW010001
F1H240450 (3): A02MW020001

Fluoride (MCAWW 300.0A)

Batch: 1236154
The following samples were analyzed at dilution, due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run.

Affected Samples:
F1H240450 (1): A02MW9005
F1H240450 (2): A02MW010001

Nitrite (MCAWW 300.0A)

Batch: 1236156
The following samples were reported ND at dilution for Nitrite, due to high concentrations of Chloride, which masked the Nitrite retention time in the undiluted analyses. The reporting limit has been adjusted only for those targets reported from the dilution run.

The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrate are attributed to matrix interference.

The closing CCV recovery was outside the upper QC limit (110.85%), indicating a potential high bias for Nitrite in the samples associated with this CCV (F1H240450-001 & 003). However, Nitrite was not detected above the reporting limit in the associated samples.

Affected Samples:
F1H240450 (1): A02MW9005
F1H240450 (2): A02MW010001
F1H240450 (3): A02MW020001

Orthophosphate as P (MCAWW300.0A)

Batch: 1236157
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries. Poor matrix spike recoveries for Nitrate are attributed to matrix interference.

Affected Samples:
F1H240450 (1): A02MW9005
F1H240450 (2): A02MW010001
F1H240450 (3): A02MW020001

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1H240450

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Phosphate as P, Ortho	MCAWW 300.0A	MCAWW 300.0A
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1H240450

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
ML0TA	001	A02MW9005	08/23/11	
ML0TF	002	A02MW010001	08/23/11	08:50
ML0TH	003	A02MW020001	08/23/11	09:30
ML0TJ	004	A04BMW707DD0001	08/23/11	
ML0TV	005	TRIP BLANK#6	08/23/11	
ML0T1	006	A02MW9005 DISSOLVED	08/23/11	
ML0T4	007	A02MW010001 DISSOLVED	08/23/11	08:50
ML0T8	008	A02MW020001 DISSOLVED	08/23/11	09:30

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005

GC/MS Volatiles

Lot-Sample #...: F1H240450-001 Work Order #...: ML0TA1AC Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11
Prep Date.....: 08/31/11 Analysis Date..: 08/31/11
Prep Batch #...: 1243089 Analysis Time..: 16:02
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**12**	**2.0**	**ug/L**
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	**0.21 J**	**1.0**	**ug/L**
1,4-Dichlorobenzene	**0.21 J**	**1.0**	**ug/L**
1,1-Dichloroethane	**5.7**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**1.5**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**4.5**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	**8.4**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005

GC/MS Volatiles

Lot-Sample #...: F1H240450-001 Work Order #...: ML0TA1AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	99	(85 - 120)
Dibromofluoromethane	99	(85 - 115)
1,2-Dichloroethane-d4	96	(70 - 120)
4-Bromofluorobenzene	98	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005

TOTAL Metals

Lot-Sample #...: F1H240450-001 Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1237036						
Uranium	**40.1**	**1.0**	**ug/L**	**SW846 6020A**	**08/25-08/31/11**	**ML0TA1A5**
		Dilution Factor: 1		Analysis Time..: 05:41		
Prep Batch #...: 1237037						
Silver	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AF
		Dilution Factor: 1		Analysis Time..: 14:53		
Aluminum	**82.7 J**	**200**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TA1AG**
		Dilution Factor: 1		Analysis Time..: 14:10		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AE
		Dilution Factor: 1		Analysis Time..: 14:53		
Barium	**55.5**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TA1AH**
		Dilution Factor: 1		Analysis Time..: 14:53		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AJ
		Dilution Factor: 1		Analysis Time..: 14:53		
Calcium	**93700**	**10000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TA1AK**
		Dilution Factor: 10		Analysis Time..: 15:26		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AL
		Dilution Factor: 1		Analysis Time..: 14:53		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AM
		Dilution Factor: 1		Analysis Time..: 14:53		
Chromium	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AN
		Dilution Factor: 1		Analysis Time..: 14:53		
Copper	ND	25.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AP
		Dilution Factor: 1		Analysis Time..: 14:53		
Iron	ND	100	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AQ
		Dilution Factor: 1		Analysis Time..: 14:53		
Magnesium	**20000**	**1000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TA1AR**
		Dilution Factor: 1		Analysis Time..: 14:53		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005

TOTAL Metals

Lot-Sample #...: F1H240450-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	152	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AT
		Dilution Factor: 1		Analysis Time..: 14:53		
Sodium	20600	1000	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AU
		Dilution Factor: 1		Analysis Time..: 14:10		
Nickel	ND	40.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AV
		Dilution Factor: 1		Analysis Time..: 14:53		
Lead	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AW
		Dilution Factor: 1		Analysis Time..: 14:53		
Antimony	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1AX
		Dilution Factor: 1		Analysis Time..: 14:53		
Selenium	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1A0
		Dilution Factor: 1		Analysis Time..: 14:53		
Strontium	374	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1A1
		Dilution Factor: 10		Analysis Time..: 15:26		
Thallium	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1A2
		Dilution Factor: 1		Analysis Time..: 14:53		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1A3
		Dilution Factor: 1		Analysis Time..: 14:53		
Zinc	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TA1A4
		Dilution Factor: 1		Analysis Time..: 14:53		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005

General Chemistry

Lot-Sample #...: F1H240450-001 Work Order #...: ML0TA Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	24.8	2.0	mg/L	MCAWW 300.0A	08/24/11	1236153
		Dilution Factor: 10		Analysis Time..: 07:27		
Fluoride	1.2	0.10	mg/L	MCAWW 300.0A	08/24/11	1236154
		Dilution Factor: 1		Analysis Time..: 06:54		
Nitrate	0.19	0.020	mg/L	MCAWW 300.0A	08/24/11	1236155
		Dilution Factor: 1		Analysis Time..: 06:54		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/24/11	1236156
		Dilution Factor: 10		Analysis Time..: 07:27		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1236157
		Dilution Factor: 1		Analysis Time..: 06:54		
Sulfate	35.6	5.0	mg/L	MCAWW 300.0A	08/24/11	1236158
		Dilution Factor: 10		Analysis Time..: 07:27		
Total Alkalinity	229	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	344	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW010001

TOTAL Metals

Lot-Sample #...: F1H240450-002 Matrix.....: WATER
Date Sampled...: 08/23/11 08:50 Date Received..: 08/24/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1237036						
Uranium	**4.0**	**1.0**	**ug/L**	**SW846 6020A**	**08/25-08/31/11**	**ML0TF1AE**
		Dilution Factor: 1		Analysis Time..: 06:08		
Prep Batch #...: 1237037						
Silver	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1AQ
		Dilution Factor: 1		Analysis Time..: 15:19		
Aluminum	**113 J**	**200**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1AR**
		Dilution Factor: 1		Analysis Time..: 14:35		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1AP
		Dilution Factor: 1		Analysis Time..: 15:19		
Barium	**64.4**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1AT**
		Dilution Factor: 1		Analysis Time..: 15:19		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1AU
		Dilution Factor: 1		Analysis Time..: 15:19		
Calcium	**216000**	**10000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1AV**
		Dilution Factor: 10		Analysis Time..: 15:51		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1AW
		Dilution Factor: 1		Analysis Time..: 15:19		
Cobalt	**5.3 J**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1AX**
		Dilution Factor: 1		Analysis Time..: 15:19		
Chromium	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1A0
		Dilution Factor: 1		Analysis Time..: 15:19		
Copper	ND	25.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1A1
		Dilution Factor: 1		Analysis Time..: 15:19		
Iron	**1450**	**100**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1A2**
		Dilution Factor: 1		Analysis Time..: 15:19		
Magnesium	**35800**	**1000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1A3**
		Dilution Factor: 1		Analysis Time..: 15:19		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW010001

TOTAL Metals

Lot-Sample #...: F1H240450-002 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**348**	**15.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1A4**
		Dilution Factor: 1		Analysis Time..: 15:19		
Sodium	**445000**	**10000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1A5**
		Dilution Factor: 10		Analysis Time..: 15:51		
Nickel	**118**	**40.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1A6**
		Dilution Factor: 1		Analysis Time..: 15:19		
Lead	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1A7
		Dilution Factor: 1		Analysis Time..: 15:19		
Antimony	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1A8
		Dilution Factor: 1		Analysis Time..: 15:19		
Selenium	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1A9
		Dilution Factor: 1		Analysis Time..: 15:19		
Strontium	**750**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1CA**
		Dilution Factor: 10		Analysis Time..: 15:51		
Thallium	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1CC
		Dilution Factor: 1		Analysis Time..: 15:19		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TF1CD
		Dilution Factor: 1		Analysis Time..: 15:19		
Zinc	**410**	**20.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TF1CE**
		Dilution Factor: 1		Analysis Time..: 15:19		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW010001

General Chemistry

Lot-Sample #...: F1H240450-002 Work Order #...: ML0TF Matrix.....: WATER
Date Sampled...: 08/23/11 08:50 Date Received..: 08/24/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	495	40.0	mg/L	MCAWW 300.0A	08/24/11	1236153
		Dilution Factor: 200		Analysis Time..: 03:21		
Fluoride	0.77	0.50	mg/L	MCAWW 300.0A	08/24/11	1236154
		Dilution Factor: 5		Analysis Time..: 02:48		
Nitrate	0.038	0.020	mg/L	MCAWW 300.0A	08/24/11	1236155
		Dilution Factor: 1		Analysis Time..: 02:32		
Nitrite	ND	4.0	mg/L	MCAWW 300.0A	08/24/11	1236156
		Dilution Factor: 200		Analysis Time..: 03:21		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1236157
		Dilution Factor: 1		Analysis Time..: 02:32		
Sulfate	192	10.0	mg/L	MCAWW 300.0A	08/24/11	1236158
		Dilution Factor: 20		Analysis Time..: 03:04		
Total Alkalinity	346	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	1540	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1		Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001

GC/MS Volatiles

Lot-Sample #...: F1H240450-003 Work Order #...: ML0TH1AN Matrix.....: WATER
Date Sampled...: 08/23/11 09:30 Date Received..: 08/24/11
Prep Date.....: 08/31/11 Analysis Date..: 08/31/11
Prep Batch #...: 1243089 Analysis Time..: 16:28
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2-Butanone	ND	5.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	**0.21 J**	**1.0**	**ug/L**
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**6.1**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**1.5**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**4.8**	**2.0**	**ug/L**
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	**9.2**	**2.0**	**ug/L**
Xylenes (total)	ND	5.0	ug/L
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001

GC/MS Volatiles

Lot-Sample #...: F1H240450-003 **Work Order #...:** ML0TH1AN **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
Dibromofluoromethane	104	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001

GC/MS Volatiles

Lot-Sample #...: F1H240450-003 Work Order #...: ML0TH2AN Matrix.....: WATER
Date Sampled...: 08/23/11 09:30 Date Received..: 08/24/11
Prep Date.....: 09/01/11 Analysis Date..: 09/01/11
Prep Batch #...: 1244139 Analysis Time..: 13:17
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloroethane	24	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	124 *	(85 - 120)
Dibromofluoromethane	108	(85 - 115)
1,2-Dichloroethane-d4	123 *	(70 - 120)
4-Bromofluorobenzene	126 *	(75 - 120)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001

TOTAL Metals

Lot-Sample #...: F1H240450-003 Matrix.....: WATER
Date Sampled...: 08/23/11 09:30 Date Received..: 08/24/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1237036						
Uranium	**41.3**	**1.0**	**ug/L**	**SW846 6020A**	**08/25-08/31/11**	**ML0TH1AG**
		Dilution Factor: 1		Analysis Time..: 06:21		
Prep Batch #...: 1237037						
Silver	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AR
		Dilution Factor: 1		Analysis Time..: 15:32		
Aluminum	**93.6 J**	**200**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TH1AT**
		Dilution Factor: 1		Analysis Time..: 14:48		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AQ
		Dilution Factor: 1		Analysis Time..: 15:32		
Barium	**56.5**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TH1AU**
		Dilution Factor: 1		Analysis Time..: 15:32		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AV
		Dilution Factor: 1		Analysis Time..: 15:32		
Calcium	**91600**	**10000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TH1AW**
		Dilution Factor: 10		Analysis Time..: 16:03		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AX
		Dilution Factor: 1		Analysis Time..: 15:32		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A0
		Dilution Factor: 1		Analysis Time..: 15:32		
Chromium	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A1
		Dilution Factor: 1		Analysis Time..: 15:32		
Copper	ND	25.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A2
		Dilution Factor: 1		Analysis Time..: 15:32		
Iron	ND	100	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A3
		Dilution Factor: 1		Analysis Time..: 15:32		
Magnesium	**20200**	**1000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0TH1A4**
		Dilution Factor: 1		Analysis Time..: 15:32		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001

TOTAL Metals

Lot-Sample #...: F1H240450-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	155	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A5
		Dilution Factor: 1		Analysis Time..: 15:32		
Sodium	20800	1000	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A6
		Dilution Factor: 1		Analysis Time..: 14:48		
Nickel	ND	40.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A7
		Dilution Factor: 1		Analysis Time..: 15:32		
Lead	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A8
		Dilution Factor: 1		Analysis Time..: 15:32		
Antimony	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1A9
		Dilution Factor: 1		Analysis Time..: 15:32		
Selenium	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AA
		Dilution Factor: 1		Analysis Time..: 15:32		
Strontium	356	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AC
		Dilution Factor: 10		Analysis Time..: 16:03		
Thallium	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AD
		Dilution Factor: 1		Analysis Time..: 15:32		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AE
		Dilution Factor: 1		Analysis Time..: 15:32		
Zinc	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0TH1AF
		Dilution Factor: 1		Analysis Time..: 15:32		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001

General Chemistry

Lot-Sample #...: F1H240450-003 Work Order #...: ML0TH Matrix.....: WATER
Date Sampled...: 08/23/11 09:30 Date Received..: 08/24/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	24.4	2.0	mg/L	MCAWW 300.0A	08/24/11	1236153
		Dilution Factor: 10		Analysis Time..: 04:10		
Fluoride	1.2	0.50	mg/L	MCAWW 300.0A	08/24/11	1236154
		Dilution Factor: 5		Analysis Time..: 03:54		
Nitrate	0.010 B	0.020	mg/L	MCAWW 300.0A	08/24/11	1236155
		Dilution Factor: 1		Analysis Time..: 03:37		
Nitrite	ND	0.20	mg/L	MCAWW 300.0A	08/24/11	1236156
		Dilution Factor: 10		Analysis Time..: 04:10		
Phosphate as P, Ortho	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1236157
		Dilution Factor: 1		Analysis Time..: 03:37		
Sulfate	36.6	2.5	mg/L	MCAWW 300.0A	08/24/11	1236158
		Dilution Factor: 5		Analysis Time..: 03:54		
Total Alkalinity	229	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	342	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001

TOTAL Metals

Lot-Sample #...: F1H240450-004 Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1237036						
Uranium	31.9	5.0	ug/L	SW846 6020A	08/25-08/31/11	ML0TJ1AC
		Dilution Factor: 5		Analysis Time..: 17:20		

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK#6

GC/MS Volatiles

Lot-Sample #...: F1H240450-005 Work Order #...: ML0TV1AA Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11
Prep Date.....: 08/31/11 Analysis Date..: 08/31/11
Prep Batch #...: 1243089 Analysis Time..: 15:09
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	2.0	ug/L
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK#6

GC/MS Volatiles

Lot-Sample #...: F1H240450-005 **Work Order #...:** ML0TV1AA **Matrix.....:** WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	104	(85 - 120)
Dibromofluoromethane	101	(85 - 115)
1,2-Dichloroethane-d4	97	(70 - 120)
4-Bromofluorobenzene	100	(75 - 120)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H240450-006 Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1237036						
Uranium	**39.5**	**1.0**	**ug/L**	**SW846 6020A**	**08/25-08/31/11**	**ML0T11A2**
		Dilution Factor: 1		Analysis Time..: 06:48		
Prep Batch #...: 1237037						
Silver	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AC
		Dilution Factor: 1		Analysis Time..: 15:51		
Aluminum	**93.3 J**	**200**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T11AD**
		Dilution Factor: 1		Analysis Time..: 14:54		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AA
		Dilution Factor: 1		Analysis Time..: 15:51		
Barium	**55.3**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T11AE**
		Dilution Factor: 1		Analysis Time..: 15:51		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AF
		Dilution Factor: 1		Analysis Time..: 15:51		
Calcium	**89500**	**10000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T11AG**
		Dilution Factor: 10		Analysis Time..: 16:10		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AH
		Dilution Factor: 1		Analysis Time..: 15:51		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AJ
		Dilution Factor: 1		Analysis Time..: 15:51		
Chromium	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AK
		Dilution Factor: 1		Analysis Time..: 15:51		
Copper	ND	25.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AL
		Dilution Factor: 1		Analysis Time..: 15:51		
Iron	ND	100	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AM
		Dilution Factor: 1		Analysis Time..: 15:51		
Magnesium	**20000**	**1000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T11AN**
		Dilution Factor: 1		Analysis Time..: 15:51		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H240450-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	152	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AP
		Dilution Factor: 1		Analysis Time..: 15:51		
Sodium	21000	1000	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AQ
		Dilution Factor: 1		Analysis Time..: 14:54		
Nickel	ND	40.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AR
		Dilution Factor: 1		Analysis Time..: 15:51		
Lead	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AT
		Dilution Factor: 1		Analysis Time..: 15:51		
Antimony	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AU
		Dilution Factor: 1		Analysis Time..: 15:51		
Selenium	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AV
		Dilution Factor: 1		Analysis Time..: 15:51		
Strontium	344	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AW
		Dilution Factor: 10		Analysis Time..: 16:10		
Thallium	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11AX
		Dilution Factor: 1		Analysis Time..: 15:51		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11A0
		Dilution Factor: 1		Analysis Time..: 15:51		
Zinc	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T11A1
		Dilution Factor: 1		Analysis Time..: 15:51		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW010001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H240450-007 Matrix.....: WATER
Date Sampled...: 08/23/11 08:50 Date Received..: 08/24/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1237036						
Uranium	3.5	1.0	ug/L	SW846 6020A	08/25-08/31/11	ML0T41AD
		Dilution Factor: 1		Analysis Time..: 06:55		
Prep Batch #...: 1237037						
Silver	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AG
		Dilution Factor: 1		Analysis Time..: 15:58		
Aluminum	194 J	200	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AH
		Dilution Factor: 1		Analysis Time..: 15:13		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AF
		Dilution Factor: 1		Analysis Time..: 15:58		
Barium	60.9	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AJ
		Dilution Factor: 1		Analysis Time..: 15:58		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AK
		Dilution Factor: 1		Analysis Time..: 15:58		
Calcium	206000	10000	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AL
		Dilution Factor: 10		Analysis Time..: 16:29		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AM
		Dilution Factor: 1		Analysis Time..: 15:58		
Cobalt	4.6 J	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AN
		Dilution Factor: 1		Analysis Time..: 15:58		
Chromium	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AP
		Dilution Factor: 1		Analysis Time..: 15:58		
Copper	ND	25.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AQ
		Dilution Factor: 1		Analysis Time..: 15:58		
Iron	126	100	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AR
		Dilution Factor: 1		Analysis Time..: 15:58		
Magnesium	35500	1000	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AT
		Dilution Factor: 1		Analysis Time..: 15:58		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW010001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H240450-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	317	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AU
		Dilution Factor: 1		Analysis Time..: 15:58		
Sodium	424000	10000	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AV
		Dilution Factor: 10		Analysis Time..: 16:29		
Nickel	107	40.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AW
		Dilution Factor: 1		Analysis Time..: 15:58		
Lead	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AX
		Dilution Factor: 1		Analysis Time..: 15:58		
Antimony	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41A0
		Dilution Factor: 1		Analysis Time..: 15:58		
Selenium	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41A1
		Dilution Factor: 1		Analysis Time..: 15:58		
Strontium	708	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41A2
		Dilution Factor: 10		Analysis Time..: 16:29		
Thallium	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41A3
		Dilution Factor: 1		Analysis Time..: 15:58		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AA
		Dilution Factor: 1		Analysis Time..: 15:58		
Zinc	348	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T41AC
		Dilution Factor: 1		Analysis Time..: 15:58		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H240450-008 Matrix.....: WATER
Date Sampled...: 08/23/11 09:30 Date Received..: 08/24/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1237036						
Uranium	**39.7**	**1.0**	**ug/L**	**SW846 6020A**	**08/25-08/31/11**	**ML0T81AH**
		Dilution Factor: 1		Analysis Time..: 07:01		
Prep Batch #...: 1237037						
Silver	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AL
		Dilution Factor: 1		Analysis Time..: 16:04		
Aluminum	**139 J**	**200**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T81AM**
		Dilution Factor: 1		Analysis Time..: 15:19		
Arsenic	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AK
		Dilution Factor: 1		Analysis Time..: 16:04		
Barium	**55.1**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T81AN**
		Dilution Factor: 1		Analysis Time..: 16:04		
Beryllium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AP
		Dilution Factor: 1		Analysis Time..: 16:04		
Calcium	**87400**	**10000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T81AQ**
		Dilution Factor: 10		Analysis Time..: 16:35		
Cadmium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AR
		Dilution Factor: 1		Analysis Time..: 16:04		
Cobalt	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AT
		Dilution Factor: 1		Analysis Time..: 16:04		
Chromium	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AU
		Dilution Factor: 1		Analysis Time..: 16:04		
Copper	ND	25.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AV
		Dilution Factor: 1		Analysis Time..: 16:04		
Iron	ND	100	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AW
		Dilution Factor: 1		Analysis Time..: 16:04		
Magnesium	**19800**	**1000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T81AX**
		Dilution Factor: 1		Analysis Time..: 16:04		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1H240450-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	151	**15.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T81A0**
		Dilution Factor: 1		Analysis Time..: 16:04		
Sodium	**20900**	**1000**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T81A1**
		Dilution Factor: 1		Analysis Time..: 15:19		
Nickel	ND	40.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81A2
		Dilution Factor: 1		Analysis Time..: 16:04		
Lead	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81A3
		Dilution Factor: 1		Analysis Time..: 16:04		
Antimony	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AA
		Dilution Factor: 1		Analysis Time..: 16:04		
Selenium	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AC
		Dilution Factor: 1		Analysis Time..: 16:04		
Strontium	**330**	**50.0**	**ug/L**	**SW846 6010C**	**08/25-08/31/11**	**ML0T81AD**
		Dilution Factor: 10		Analysis Time..: 16:35		
Thallium	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AE
		Dilution Factor: 1		Analysis Time..: 16:04		
Vanadium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AF
		Dilution Factor: 1		Analysis Time..: 16:04		
Zinc	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML0T81AG
		Dilution Factor: 1		Analysis Time..: 16:04		

NOTE(S):

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 Work Order #...: ML58K1AA Matrix.....: WATER
MB Lot-Sample #: F1H310000-089

Prep Date.....: 08/31/11 Analysis Time..: 08:19
Analysis Date..: 08/31/11 Prep Batch #...: 1243089
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	2.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(85 - 120)
Dibromofluoromethane	104	(85 - 115)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 Work Order #...: ML58K1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethane-d4	98	(70 - 120)		
4-Bromofluorobenzene	97	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 Work Order #...: ML7EQ1AA Matrix.....: WATER
MB Lot-Sample #: F1I010000-139

Prep Date.....: 09/01/11 Analysis Time..: 09:51
Analysis Date..: 09/01/11 Prep Batch #...: 1244139
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Chloroethane	ND	2.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	132 *	(85 - 120)
Dibromofluoromethane	101	(85 - 115)
1,2-Dichloroethane-d4	109	(70 - 120)
4-Bromofluorobenzene	116	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

* Surrogate recovery is outside stated control limits.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H240450 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1H250000-036 **Prep Batch #...:** 1237036						
Uranium	ND	1.0	ug/L	SW846 6020A	08/25-08/31/11	ML1V91AA
		Dilution Factor: 1				
		Analysis Time..: 05:28				
MB Lot-Sample #: F1H250000-037 **Prep Batch #...:** 1237037						
Aluminum	ND	200	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AD
		Dilution Factor: 1				
		Analysis Time..: 13:57				
Antimony	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AU
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Arsenic	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AA
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Barium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AE
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Beryllium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AF
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Cadmium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AH
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Calcium	ND	1000	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AG
		Dilution Factor: 1				
		Analysis Time..: 13:57				
Chromium	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AK
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Cobalt	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AJ
		Dilution Factor: 1				
		Analysis Time..: 14:41				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H240450 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AL
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Iron	ND	100	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AM
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Lead	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AT
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Magnesium	ND	1000	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AN
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Manganese	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AP
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Nickel	ND	40.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AR
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Selenium	ND	15.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AV
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Silver	ND	10.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AC
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Sodium	ND	1000	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AQ
		Dilution Factor: 1				
		Analysis Time..: 13:57				
Strontium	ND	5.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AW
		Dilution Factor: 1				
		Analysis Time..: 13:57				
Thallium	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1AX
		Dilution Factor: 1				
		Analysis Time..: 14:41				
Vanadium	ND	50.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1A0
		Dilution Factor: 1				
		Analysis Time..: 14:41				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1H240450 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20.0	ug/L	SW846 6010C	08/25-08/31/11	ML1WC1A1
		Dilution Factor: 1				
		Analysis Time..: 14:41				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F1H240450 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: ML2331AA		MB Lot-Sample #:	F1H240000-153	
	ND	0.20	mg/L	MCAWW 300.0A	08/24/11	1236153
		Dilution Factor: 1				
		Analysis Time..: 02:15				
Fluoride		Work Order #: ML2361AA		MB Lot-Sample #:	F1H240000-154	
	ND	0.10	mg/L	MCAWW 300.0A	08/24/11	1236154
		Dilution Factor: 1				
		Analysis Time..: 02:15				
Nitrate		Work Order #: ML2371AA		MB Lot-Sample #:	F1H240000-155	
	ND	0.020	mg/L	MCAWW 300.0A	08/24/11	1236155
		Dilution Factor: 1				
		Analysis Time..: 02:15				
Nitrite		Work Order #: ML2381AA		MB Lot-Sample #:	F1H240000-156	
	ND	0.020	mg/L	MCAWW 300.0A	08/24/11	1236156
		Dilution Factor: 1				
		Analysis Time..: 02:15				
Phosphate as P, Ortho		Work Order #: ML24H1AA		MB Lot-Sample #:	F1H240000-157	
	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1236157
		Dilution Factor: 1				
		Analysis Time..: 02:15				
Sulfate		Work Order #: ML24L1AA		MB Lot-Sample #:	F1H240000-158	
	ND	0.50	mg/L	MCAWW 300.0A	08/24/11	1236158
		Dilution Factor: 1				
		Analysis Time..: 02:15				
Total Alkalinity		Work Order #: ML51P1AA		MB Lot-Sample #:	F1H300000-085	
	ND	5.0	mg/L	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: ML4AF1AA		MB Lot-Sample #:	F1H260000-124	
	ND	10.0	mg/L	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 Work Order #...: ML58K1AC Matrix.....: WATER
LCS Lot-Sample#: F1H310000-089
Prep Date.....: 08/31/11 Analysis Date..: 08/31/11
Prep Batch #...: 1243089 Analysis Time..: 07:26
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
cis-1,3-Dichloropropene	108	(70 - 130)	SW846 8260B
Dibromochloromethane	101	(60 - 135)	SW846 8260B
Vinyl chloride	110	(50 - 145)	SW846 8260B
Bromomethane	165 a	(30 - 145)	SW846 8260B
Chloroethane	117	(60 - 135)	SW846 8260B
Acetone	86	(40 - 140)	SW846 8260B
1,1-Dichloroethene	96	(70 - 130)	SW846 8260B
Methylene chloride	87	(55 - 140)	SW846 8260B
Carbon disulfide	93	(35 - 160)	SW846 8260B
1,1-Dichloroethane	101	(70 - 135)	SW846 8260B
2-Butanone	95	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	97	(85 - 115)	SW846 8260B
Chloroform	98	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	102	(65 - 130)	SW846 8260B
Carbon tetrachloride	99	(65 - 140)	SW846 8260B
1,2-Dichloroethane	100	(70 - 130)	SW846 8260B
Benzene	102	(80 - 120)	SW846 8260B
Trichloroethene	99	(70 - 125)	SW846 8260B
1,2-Dichloropropane	102	(75 - 125)	SW846 8260B
Bromodichloromethane	102	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	102	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropene	106	(55 - 140)	SW846 8260B
Toluene	106	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	101	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	98	(75 - 125)	SW846 8260B
2-Hexanone	87	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	98	(60 - 135)	SW846 8260B
Chlorobenzene	101	(80 - 120)	SW846 8260B
Bromoform	99	(70 - 130)	SW846 8260B
Ethylbenzene	108	(75 - 125)	SW846 8260B
Styrene	112	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	94	(65 - 130)	SW846 8260B
Tetrachloroethene	98	(45 - 150)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 **Work Order #...:** ML58K1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1H310000-089

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichlorobenzene	**101**	**(70 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
Dibromofluoromethane	102	(85 - 115)
1,2-Dichloroethane-d4	99	(70 - 120)
4-Bromofluorobenzene	95	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 **Work Order #...:** ML7EQ1AC-LCS **Matrix.....:** WATER
LCS Lot-Sample#: F1I010000-139 ML7EQ1AD-LCSD
Prep Date.....: 09/01/11 **Analysis Date..:** 09/01/11
Prep Batch #...: 1244139 **Analysis Time..:** 08:53
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Chloroethane	**98**	**(60 - 135)**			**SW846 8260B**
	116	**(60 - 135)**	**17**	**(0-20)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	103	(85 - 120)
	110	(85 - 120)
Dibromofluoromethane	99	(85 - 115)
	94	(85 - 115)
1,2-Dichloroethane-d4	96	(70 - 120)
	108	(70 - 120)
4-Bromofluorobenzene	102	(75 - 120)
	116	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H240450 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1H250000-036 **Prep Batch #...:** 1237036					
Uranium	106	(80 - 120)	SW846 6020A	08/25-08/31/11	ML1V91AC
		Dilution Factor: 1		Analysis Time..: 05:35	
LCS Lot-Sample#: F1H250000-037 **Prep Batch #...:** 1237037					
Arsenic	106	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A2
		Dilution Factor: 1		Analysis Time..: 14:47	
Silver	90	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A3
		Dilution Factor: 1		Analysis Time..: 14:47	
Aluminum	108	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A4
		Dilution Factor: 1		Analysis Time..: 14:04	
Barium	107	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A5
		Dilution Factor: 1		Analysis Time..: 14:47	
Beryllium	115	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A6
		Dilution Factor: 1		Analysis Time..: 14:47	
Calcium	106	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A7
		Dilution Factor: 1		Analysis Time..: 14:04	
Cadmium	109	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A8
		Dilution Factor: 1		Analysis Time..: 14:47	
Cobalt	105	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1A9
		Dilution Factor: 1		Analysis Time..: 14:47	
Chromium	105	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CA
		Dilution Factor: 1		Analysis Time..: 14:47	
Copper	103	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CC
		Dilution Factor: 1		Analysis Time..: 14:47	
Iron	109	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CD
		Dilution Factor: 1		Analysis Time..: 14:47	
Magnesium	107	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CE
		Dilution Factor: 1		Analysis Time..: 14:47	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H240450 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	108	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CF
		Dilution Factor: 1	Analysis Time..: 14:47		
Sodium	106	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CG
		Dilution Factor: 1	Analysis Time..: 14:04		
Nickel	105	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CH
		Dilution Factor: 1	Analysis Time..: 14:47		
Lead	105	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CJ
		Dilution Factor: 1	Analysis Time..: 14:47		
Antimony	107	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CK
		Dilution Factor: 1	Analysis Time..: 14:47		
Selenium	106	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CL
		Dilution Factor: 1	Analysis Time..: 14:47		
Strontium	102	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CM
		Dilution Factor: 1	Analysis Time..: 14:04		
Thallium	103	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CN
		Dilution Factor: 1	Analysis Time..: 14:47		
Vanadium	105	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CP
		Dilution Factor: 1	Analysis Time..: 14:47		
Zinc	113	(80 - 120)	SW846 6010C	08/25-08/31/11	ML1WC1CQ
		Dilution Factor: 1	Analysis Time..: 14:47		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H240450 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: ML2331AC LCS Lot-Sample#: F1H240000-153			
	94	(90 - 110)	MCAWW 300.0A	08/24/11	1236153
		Dilution Factor: 1	Analysis Time..: 01:59		
Fluoride		Work Order #: ML2361AC LCS Lot-Sample#: F1H240000-154			
	96	(90 - 110)	MCAWW 300.0A	08/24/11	1236154
		Dilution Factor: 1	Analysis Time..: 01:59		
Nitrate		Work Order #: ML2371AC LCS Lot-Sample#: F1H240000-155			
	97	(90 - 110)	MCAWW 300.0A	08/24/11	1236155
		Dilution Factor: 1	Analysis Time..: 01:59		
Nitrite		Work Order #: ML2381AC LCS Lot-Sample#: F1H240000-156			
	101	(90 - 110)	MCAWW 300.0A	08/24/11	1236156
		Dilution Factor: 1	Analysis Time..: 01:59		
Phosphate as P, Ortho		Work Order #: ML24H1AC LCS Lot-Sample#: F1H240000-157			
	95	(90 - 110)	MCAWW 300.0A	08/24/11	1236157
		Dilution Factor: 1	Analysis Time..: 01:59		
Sulfate		Work Order #: ML24L1AC LCS Lot-Sample#: F1H240000-158			
	97	(90 - 110)	MCAWW 300.0A	08/24/11	1236158
		Dilution Factor: 1	Analysis Time..: 01:59		
Total Alkalinity		Work Order #: ML51P1AC LCS Lot-Sample#: F1H300000-085			
	94	(90 - 110)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Alkalinity		Work Order #: ML51P1AD LCS Lot-Sample#: F1H300000-085			
	94	(90 - 110)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		
Total Dissolved Solids		Work Order #: ML4AF1AC LCS Lot-Sample#: F1H260000-124			
	96	(90 - 113)	MCAWW 160.1	08/26-08/29/11	1238124
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 Work Order #...: ML0TA1D0-MS Matrix.....: WATER
MS Lot-Sample #: F1H240450-001 ML0TA1D1-MSD
Date Sampled...: 08/23/11 Date Received..: 08/24/11
Prep Date.....: 08/31/11 Analysis Date..: 08/31/11
Prep Batch #...: 1243089 Analysis Time..: 13:23
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Vinyl chloride	110	(50 - 145)			SW846 8260B
	107	(50 - 145)	1.9	(0-20)	SW846 8260B
Bromomethane	118	(30 - 145)			SW846 8260B
	106	(30 - 145)	10	(0-20)	SW846 8260B
Chloroethane	116	(60 - 135)			SW846 8260B
	120	(60 - 135)	1.4	(0-20)	SW846 8260B
Bromoform	102	(70 - 130)			SW846 8260B
	106	(70 - 130)	4.1	(0-20)	SW846 8260B
Ethylbenzene	106	(75 - 125)			SW846 8260B
	108	(75 - 125)	2.3	(0-20)	SW846 8260B
Styrene	109	(65 - 135)			SW846 8260B
	114	(65 - 135)	4.9	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	103	(65 - 130)			SW846 8260B
	104	(65 - 130)	1.5	(0-20)	SW846 8260B
Tetrachloroethene	99	(45 - 150)			SW846 8260B
	101	(45 - 150)	1.5	(0-20)	SW846 8260B
1,2-Dichlorobenzene	102	(70 - 120)			SW846 8260B
	104	(70 - 120)	2.0	(0-20)	SW846 8260B
Acetone	88	(40 - 140)			SW846 8260B
	88	(40 - 140)	0.79	(0-20)	SW846 8260B
1,1-Dichloroethene	108	(70 - 130)			SW846 8260B
	99	(70 - 130)	7.9	(0-20)	SW846 8260B
Methylene chloride	91	(55 - 140)			SW846 8260B
	92	(55 - 140)	0.57	(0-20)	SW846 8260B
Carbon disulfide	103	(35 - 160)			SW846 8260B
	102	(35 - 160)	0.39	(0-20)	SW846 8260B
1,1-Dichloroethane	101	(70 - 135)			SW846 8260B
	106	(70 - 135)	2.6	(0-20)	SW846 8260B
2-Butanone	93	(30 - 150)			SW846 8260B
	96	(30 - 150)	4.0	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	101	(85 - 115)			SW846 8260B
	104	(85 - 115)	2.2	(0-20)	SW846 8260B
Chloroform	101	(65 - 135)			SW846 8260B
	101	(65 - 135)	0.19	(0-20)	SW846 8260B
1,1,1-Trichloroethane	102	(65 - 130)			SW846 8260B
	103	(65 - 130)	0.78	(0-20)	SW846 8260B
Carbon tetrachloride	96	(65 - 140)			SW846 8260B
	98	(65 - 140)	1.5	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1H240450 Work Order #...: ML0TA1D0-MS Matrix.....: WATER
MS Lot-Sample #: F1H240450-001 ML0TA1D1-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,2-Dichloroethane	101	(70 - 130)			SW846 8260B
	100	(70 - 130)	0.09	(0-20)	SW846 8260B
Benzene	103	(80 - 120)			SW846 8260B
	105	(80 - 120)	2.3	(0-20)	SW846 8260B
Trichloroethene	99	(70 - 125)			SW846 8260B
	101	(70 - 125)	1.6	(0-20)	SW846 8260B
1,2-Dichloropropane	102	(75 - 125)			SW846 8260B
	103	(75 - 125)	0.87	(0-20)	SW846 8260B
Bromodichloromethane	101	(75 - 120)			SW846 8260B
	103	(75 - 120)	1.8	(0-20)	SW846 8260B
1,1,2-Trichloroethane	102	(75 - 125)			SW846 8260B
	103	(75 - 125)	0.88	(0-20)	SW846 8260B
trans-1,3-Dichloropropene	100	(55 - 140)			SW846 8260B
	105	(55 - 140)	5.4	(0-20)	SW846 8260B
Toluene	105	(75 - 120)			SW846 8260B
	108	(75 - 120)	2.6	(0-20)	SW846 8260B
1,3-Dichlorobenzene	103	(75 - 125)			SW846 8260B
	104	(75 - 125)	0.37	(0-20)	SW846 8260B
1,4-Dichlorobenzene	97	(75 - 125)			SW846 8260B
	100	(75 - 125)	2.8	(0-20)	SW846 8260B
2-Hexanone	86	(55 - 130)			SW846 8260B
	96	(55 - 130)	11	(0-20)	SW846 8260B
4-Methyl-2-pentanone	98	(60 - 135)			SW846 8260B
	104	(60 - 135)	5.7	(0-20)	SW846 8260B
Chlorobenzene	102	(80 - 120)			SW846 8260B
	104	(80 - 120)	1.6	(0-20)	SW846 8260B
cis-1,3-Dichloropropene	94	(70 - 130)			SW846 8260B
	100	(70 - 130)	6.4	(0-20)	SW846 8260B
Dibromochloromethane	95	(60 - 135)			SW846 8260B
	99	(60 - 135)	4.0	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	100	(85 - 120)
	105	(85 - 120)
Dibromofluoromethane	99	(85 - 115)
	102	(85 - 115)
1,2-Dichloroethane-d4	96	(70 - 120)
	97	(70 - 120)
4-Bromofluorobenzene	94	(75 - 120)
	99	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H240450 Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1H240450-001 **Prep Batch #...:** 1237036							
Uranium	109	(80 - 120)			SW846 6020A	08/25-08/31/11	ML0TA1CF
	107	(80 - 120)	2.0	(0-20)	SW846 6020A	08/25-08/31/11	ML0TA1CG
		Dilution Factor: 1					
		Analysis Time..: 05:55					
MS Lot-Sample #: F1H240450-001 **Prep Batch #...:** 1237037							
Aluminum	108	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1CM
	108	(80 - 120)	0.01	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1CN
		Dilution Factor: 1					
		Analysis Time..: 14:23					
Antimony	106	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DK
	107	(80 - 120)	1.0	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DL
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Arsenic	106	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1CH
	107	(80 - 120)	0.62	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1CJ
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Barium	105	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1CP
	105	(80 - 120)	0.40	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1CQ
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Beryllium	114	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1CR
	114	(80 - 120)	0.47	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1CT
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Cadmium	106	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1CW
	106	(80 - 120)	0.72	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1CX
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Calcium	27 N	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1CU
	38 N	(80 - 120)	1.2	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1CV
		Dilution Factor: 10					
		Analysis Time..: 15:38					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H240450 **Matrix.....:** WATER
Date Sampled...: 08/23/11 **Date Received..:** 08/24/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	103	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1C2
	103	(80 - 120)	0.61	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1C3
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Cobalt	102	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1C0
	102	(80 - 120)	0.60	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1C1
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Copper	101	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1C4
	101	(80 - 120)	0.38	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1C5
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Iron	107	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1C6
	107	(80 - 120)	0.57	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1C7
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Lead	102	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DH
	102	(80 - 120)	0.35	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DJ
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Magnesium	103	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1C8
	105	(80 - 120)	0.57	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1C9
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Manganese	105	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DA
	106	(80 - 120)	0.59	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DC
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Nickel	101	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DF
	102	(80 - 120)	0.68	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DG
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Selenium	81	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DM
	81	(80 - 120)	0.17	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DN
		Dilution Factor: 1					
		Analysis Time..: 15:06					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1H240450 Matrix.....: WATER
Date Sampled...: 08/23/11 Date Received..: 08/24/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	90	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1CK
	90	(80 - 120)	0.52	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1CL
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Sodium	104	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DD
	104	(80 - 120)	0.12	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DE
		Dilution Factor: 1					
		Analysis Time..: 14:23					
Strontium	111	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DP
	113	(80 - 120)	1.1	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DQ
		Dilution Factor: 10					
		Analysis Time..: 15:38					
Thallium	100	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DR
	101	(80 - 120)	0.98	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DT
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Vanadium	103	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DU
	104	(80 - 120)	0.51	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DV
		Dilution Factor: 1					
		Analysis Time..: 15:06					
Zinc	111	(80 - 120)			SW846 6010C	08/25-08/31/11	ML0TA1DW
	111	(80 - 120)	0.56	(0-20)	SW846 6010C	08/25-08/31/11	ML0TA1DX
		Dilution Factor: 1					
		Analysis Time..: 15:06					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H240450 **Matrix.....:** WATER
Date Sampled...: 08/23/11 09:30 **Date Received..:** 08/24/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: ML0TH1CF		MS Lot-Sample #: F1H240450-003	
	105	(90 - 110)	MCAWW 300.0A	08/24/11	1236153
		Dilution Factor: 10	Analysis Time..: 04:10		
Fluoride		Work Order #...: ML0TH1CH		MS Lot-Sample #: F1H240450-003	
	108	(90 - 110)	MCAWW 300.0A	08/24/11	1236154
		Dilution Factor: 5	Analysis Time..: 03:54		
Nitrate		Work Order #...: ML0TH1CK		MS Lot-Sample #: F1H240450-003	
	113 N	(90 - 110)	MCAWW 300.0A	08/24/11	1236155
		Dilution Factor: 1	Analysis Time..: 03:37		
Nitrite		Work Order #...: ML0TH1CM		MS Lot-Sample #: F1H240450-003	
	72 N	(90 - 110)	MCAWW 300.0A	08/24/11	1236156
		Dilution Factor: 10	Analysis Time..: 04:10		
Phosphate as P, Ortho		Work Order #...: ML0TH1CP		MS Lot-Sample #: F1H240450-003	
	75 N	(90 - 110)	MCAWW 300.0A	08/24/11	1236157
		Dilution Factor: 1	Analysis Time..: 03:37		
Sulfate		Work Order #...: ML0TH1CR		MS Lot-Sample #: F1H240450-003	
	101	(90 - 110)	MCAWW 300.0A	08/24/11	1236158
		Dilution Factor: 5	Analysis Time..: 03:54		
Total Alkalinity		Work Order #...: MLW9L1EM		MS Lot-Sample #: F1H230407-007	
	98	(80 - 120)	MCAWW 310.1	08/30/11	1242085
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H240450 **Work Order #...:** ML0TH-SMP ML0TH-DUP **Matrix.....:** WATER

Date Sampled...: 08/23/11 09:30 **Date Received..:** 08/24/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F1H240450-003		
	24.4	22.7	mg/L	7.2	(0-20)	MCAWW 300.0A	08/24/11	1236153
		Dilution Factor: 10				Analysis Time..: 04:10		
Fluoride						SD Lot-Sample #: F1H240450-003		
	1.2	1.3	mg/L	6.3	(0-20)	MCAWW 300.0A	08/24/11	1236154
		Dilution Factor: 5				Analysis Time..: 03:54		
Nitrate						SD Lot-Sample #: F1H240450-003		
	0.010 B	0.016 B	mg/L	43	(0-20)	MCAWW 300.0A	08/24/11	1236155
		Dilution Factor: 1				Analysis Time..: 03:37		
Nitrite						SD Lot-Sample #: F1H240450-003		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/24/11	1236156
		Dilution Factor: 10				Analysis Time..: 04:10		
Phosphate as P, Ortho						SD Lot-Sample #: F1H240450-003		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	08/24/11	1236157
		Dilution Factor: 1				Analysis Time..: 03:37		
Sulfate						SD Lot-Sample #: F1H240450-003		
	36.6	36.7	mg/L	0.082	(0-20)	MCAWW 300.0A	08/24/11	1236158
		Dilution Factor: 5				Analysis Time..: 03:54		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1H240450 **Work Order #...:** MLW9L-SMP MLW9L-DUP **Matrix.....:** WATER

Date Sampled...: 08/22/11 11:00 **Date Received..:** 08/23/11

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F1H230407-007		
	400	400	mg/L	0.0	(0-15)	MCAWW 160.1	08/26-08/29/11	1238124
			Dilution Factor: 1			Analysis Time..: 00:00		
Total Alkalinity						SD Lot-Sample #: F1H230407-007		
	254	254	mg/L	0.16	(0-20)	MCAWW 310.1	08/30/11	1242085
			Dilution Factor: 1			Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005

Radiochemistry

Lab Sample ID: F1H240450-001
Work Order: ML0TA
Matrix: WATER

Date Collected: 08/23/11 0000
Date Received: 08/24/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1238069	Yld % 67
Uranium 234	10.9		1.1	0.1	0.08	08/26/11	08/31/11
Uranium 235/236	0.58		0.18	0.10	0.07	08/26/11	08/31/11
Uranium 238	12.0		1.2	0.1	0.06	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW010001

Radiochemistry

Lab Sample ID: F1H240450-002
Work Order: ML0TF
Matrix: WATER

Date Collected: 08/23/11 0850
Date Received: 08/24/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238069		Yld % 43
Uranium 234	1.86		0.38	0.10	0.1	08/26/11	08/31/11
Uranium 235/236	0.020	U	0.041	0.100	0.055	08/26/11	08/31/11
Uranium 238	1.22		0.30	0.10	0.13	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001

Radiochemistry

Lab Sample ID: F1H240450-003
Work Order: ML0TH
Matrix: WATER

Date Collected: 08/23/11 0930
Date Received: 08/24/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1238069	Yld % 63
Uranium 234	12.0		1.2	0.1	0.09	08/26/11	08/31/11
Uranium 235/236	0.62		0.19	0.10	0.08	08/26/11	08/31/11
Uranium 238	12.9		1.3	0.1	0.06	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW9005 DISSOLVED

Radiochemistry

Lab Sample ID: F1H240450-006
Work Order: ML0T1
Matrix: WATER

Date Collected: 08/23/11 0000
Date Received: 08/24/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 1238069		Yld % 66
Uranium 234	10.3		1.1	0.1	0.06	08/26/11	08/31/11
Uranium 235/236	0.49		0.16	0.10	0.06	08/26/11	08/31/11
Uranium 238	10.8		1.1	0.1	0.03	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW010001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H240450-007
Work Order: ML0T4
Matrix: WATER

Date Collected: 08/23/11 0850
Date Received: 08/24/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 1238069		Yld % 50
Uranium 234	1.32		0.29	0.10	0.1	08/26/11	08/31/11
Uranium 235/236	-0.008	U	0.012	0.100	0.087	08/26/11	08/31/11
Uranium 238	1.24		0.28	0.10	0.09	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A02MW020001 DISSOLVED

Radiochemistry

Lab Sample ID: F1H240450-008
Work Order: ML0T8
Matrix: WATER

Date Collected: 08/23/11 0930
Date Received: 08/24/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 1238069	Yld % 77
Uranium 234	9.68		0.99	0.10	0.05	08/26/11	08/31/11
Uranium 235/236	0.36		0.13	0.10	0.05	08/26/11	08/31/11
Uranium 238	10.4		1.1	0.1	0.04	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1H240450
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1238069		Yld % 100	F1H260000-069B
Uranium 234	0.021	U	0.029	0.100	0.045	08/26/11	08/31/11
Uranium 235/236	0.004	U	0.019	0.100	0.047	08/26/11	08/31/11
Uranium 238	0.004	U	0.015	0.100	0.038	08/26/11	08/31/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1H240450
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/L		A-01-R MOD			F1H260000-069C
Uranium 234	3.26	3.06	0.40	0.05	92	94	(76 - 136)
Uranium 238	3.39	3.36	0.42	0.04	92	99	(76 - 134)
	Batch #:	1238069		Analysis Date:	08/31/11		

NOTE(S)
MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

MATRIX SPIKE/MATRIX SPIKE DUPLICATE REPORT

Radiochemistry

Client Lot ID: F1H230464
Matrix: WATER

Date Sampled: 08/19/11 0915
Date Received: 08/23/11 0905

Parameter		Spike Amount	SPIKE Result	Total Uncert. (2 σ+/-)	Spike Yld	SAMPLE Result		Total Uncert. (2σ +/-)	QC Sample ID % Yld	%Rec	QC Control Limits
Iso URANIUM (LONG CT) DOE A				pCi/L		A-01-R MOD			F1H230464-010		
Uranium 234		3.26	2.71	0.40	69	0.023	U	0.037	65	82	(65 - 146)
	Spk2	3.26	3.11	0.45	65	0.023	U	0.037	65	95	(65 - 146)
									Precision:	14	%RPD
Uranium 238		3.39	2.84	0.41	69	0.028	U	0.036	65	83	(68 - 143)
	Spk2	3.39	3.18	0.46	65	0.028	U	0.036	65	93	(68 - 143)
									Precision:	11	%RPD

Batch #: 1238069 Analysis date: 08/31/11

NOTE(S)

Data are incomplete without the case narrative.

Calculations are performed before rounding to avoid round-off error in calculated results

U Result is less than the sample detection limit.

F1H240450 CLIENT ANALYSIS SUMMARY

Storage Loc: R21,2-106,METS,

Project Manager: LMF Quote #: 89251 SDG:

Project: 140415 Gutorl Steel

PO#: 697888 Report to: Karl VanKeuren

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 8

Date Received: 2011-08-24

Analytical Due Date: 2011-09-01

Report Due Date: 2011-09-06

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
1	A02MW9005			2011-08-23 / 0	ML0TA	WATER

SAMPLE COMMENTS:

FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	AK	MCAW	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	C8	MCAW	300.0A	WATER, 300.0A, Fluoride 2of0	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	C9	MCAW	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CX	MCAW	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	CY	MCAW	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	DO	MCAW	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	GO	MCAW	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			
XX	VC	MCAW	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

F1H240450 CLIENT ANALYSIS SUMMARY

Storage Loc: R21,2-106,METS,

Project Manager: LMF Quote #: 89261 SDG:

Date Received: 2011-08-24

Project: 140415 Guterl Steel

Analytical Due Date: 2011-09-01

PO#: 697886 Report to: Karl VanKeuren

Report Due Date: 2011-09-06

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: B Standard Report

#SMPS in LOT: 8 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

D	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H240450 CLIENT ANALYSIS SUMMARY

Storage Loc: R21,2-106,METS,

Project Manager: LMF Quote #: 89251 SDG:

Date Received: 2011-08-24

Project: 140415 Gutsrl Steel

Analytical Due Date: 2011-09-01

PO#: 697886 Report to: Karl VanKeuren

Report Due Date: 2011-09-06

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: B Standard Report

#SMPS In LOT: 8 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

S	AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A02MW010001			2011-08-23 / 850	ML0TF	WATER

SAMPLE COMMENTS:

PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

F1H240450 CLIENT ANALYSIS SUMMARY

Storage Loc: R21,2-106,METS,

Project Manager: LMF Quote #: 89251 SDG:

Project: 140415 Guterl Steel

PO#: 697886 Report to: Karl VanKouren

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 8

Date Received: 2011-08-24

Analytical Due Date: 2011-09-01

Report Due Date: 2011-09-06

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium listend of 200.8

XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A02MW020001			2011-08-23 / 930	ML0TH	WATER

SAMPLE COMMENTS:

SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

F1H240450 CLIENT ANALYSIS SUMMARY

Storage Loc: R21,2-106,METS,

Project Manager: LMF Quote #: 89251 SDG:

Project: 140415 Gutert Steel

PO#: 697886 Report to: Karl VanKeuren

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 8

Date Received: 2011-08-24

Analytical Due Date: 2011-09-01

Report Due Date: 2011-09-06

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium listed of 200.8

XX	AK	MCAW W	160.1	WATER, 160.1, TDS	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride 2of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N 3of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride 1of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate 6of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	DO	MCAW W	300.0A	WATER, 300.0A,Orthophosphate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N 4of6	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
XX	VC	MCAW W	310.1	WATER, 310.1, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: B	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
4	A04BMW707DD0001			2011-08-23 / 0	ML0TJ	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
5	TRIP BLANK#6			2011-08-23 / 0	ML0TV	WATER

SAMPLE COMMENTS:

XX	QK	SW846	8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
6	A02MW9005 DISSOLVED			2011-08-23 / 0	ML0T1	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F1H240450 CLIENT ANALYSIS SUMMARY

Storage Loc: R21,METS

Project Manager: LMF Quote #: 89251 SDG:

Project: 140415 Gutori Steel

PO#: 697886 Report to: Karl VanKeuren

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 8

Date Received: 2011-08-24

Analytical Due Date: 2011-09-01

Report Due Date: 2011-09-06

Report Type: B Standard Report

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE # 7 | CLIENT SAMPLE ID: A02MW010001 DISSOLVED | Site ID | Client Matrix | DATE/TIME SAMPLED: 2011-08-23 / 850 | WORKORDER: ML0T4 | WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE # 8 | CLIENT SAMPLE ID: A02MW020001 DISSOLVED | Site ID | Client Matrix | DATE/TIME SAMPLED: 2011-08-23 / 930 | WORKORDER: ML0T8 | WATER

SAMPLE COMMENTS:

F1H240450 CLIENT ANALYSIS SUMMARY

Storage Loc: R21,METS

Project Manager: LMF Quote #: 89251 SDG:

Date Received: 2011-08-24

Project: 140415 Guterl Steel

Analytical Due Date: 2011-09-01

PO#: 697886 Report to: Karl VanKeuren

Report Due Date: 2011-09-06

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: B Standard Report

#SMPS In LOT: 8 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium latend of 200.8

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Phone 314.298.8566 fax 314.298.8757

CUR 205

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/23/2011	COC No: 014
Shaw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
5050 Section Avenue	**Analysis Turnaround Time**			Job No. 140416.09020100
Cincinnati, Ohio 45212	Calendar (C) or Work Days (W)			
(513) 782-4700 Phone	TAT if different from Below _____			SDG No.
(513) 782-4807 FAX	☐ 2 weeks			
Project Name: Former Guterl Specialty Steel Corporation FUSRA	☐ 1 week			
Site: Lockport, NY	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec) [1]	Total Uranium [2]	TAL Metals except Mercury [3]	Anions [3]	Alkalinity [4]	Total Dissolved Solids [5]	Volatile Organic Compounds (VOCs) [6]	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
A02MW9005	8/23/2011	--	Grab	GW	10	X		X	X	X	X	X	X	X					1x500 HNP 2x250 3xVOA
A02MW010001	8/23/2011	0850	Grab	GW	7	X		X	X	X	X	X	X						1x500 HNP 2x250
A02MW020001	8/23/2011	0930	Grab	GW	10	X		X	X	X	X	X	X	X					1x500 HNP 2x250 3xVOA
A04BMW707DD0001	8/23/2011	--	Grab	GW	1				X										1xLP
Trip Blank #6	8/23/2011	--	TB	--	1									X					1xVOA HO

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Shaw E & I, Inc.	8/23/11 1665		BFLO	08-23-11 16:15
	BFLO	0823-11 16:45		BFLO	823-11 16:25
	BFLO	8-23-11 21:55		TA STL	8/24/11 0920

TestAmerica St. Louis

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica St. Louis

Lot #(s): F1H240450

CUR Form #: 2 0 5

CONDITION UPON RECEIPT FORM

Client: SHAW

Quote No: 89251

COC/RFA No: 014

Initiated By: NVD Date: 8/24/11 Time: 0920

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*						Sample Temperature (s):**					
1.	4485	0258	4958	6.		1.	3		6.		
2.	↓	↓	4969	7.		2.	ABSENT		7.		
3.				8.		3.			8.		
4.				9.		4.			9.		
5.				10.		5.			10.		

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y (N) N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y (N) N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

SAMPLE ID 404BMW'707DD0001 WAS REC'D WITH IMPROPER PH WHICH WAS CORRECTED BY ADDING NITRIC LOT #K11059 WHICH WAS OK'D BY P.M (LF)

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 8/24/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004 rev13, REVISED 05/27/11 \\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin-0004 CUR.doc

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guterl Steel

Lot #: F1I010435

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

September 20, 2011

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F1I010435

This report contains the analytical results for the five samples received under chain of custody by TestAmerica in St. Louis on September 1, 2011. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Volatile Organics by GC/MS (SW-846 8260)

Batch: 1255150
The CCV %Ds for Ethyl acetate and Nonanal are outside the established QC limits. These analytes are not part of the analysis request and thus this excursion does not affect the data.

The LCS recovery for Bromoform is outside the upper QC limit, indicating a potential positive bias for these analytes. These analytes were not observed above the reporting limit or are not targets for the associated samples; therefore the sample data was not adversely affected by this excursion.

Affected Samples:
F1I010435 (1): AQUEOUS IDW
F1I010435 (5): TRIP BLANK #7

Volatile Organics by GC/MS (SW-846 8260)-TCLP

Batch: 1251207
The CCV recovery was outside the upper QC limit (greater than 20% D) for Vinyl chloride indicating a potential high bias for this analyte in the samples associated with this CCV. This analyte was not detected above the reporting limit in the associated samples.

Affected Samples:
F1I010435 (2): NON-AQUEOUS IDW

Mercury in Solid Waste (Manual Cold-Vapor) (SW846 7471)-TCLP

Batch: 1256029
The MS (MSD) recovery for mercury is outside the established QC limits. The RPD is within method acceptance criteria indicating matrix interference. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:
F1I010435 (2): NON-AQUEOUS IDW

ICP-MS (SW846-6020)

Batch: 1249123
The sample was analyzed at a dilution due to the presence of matrix interferences. The digestates were cloudy. The reporting limit has been adjusted for the dilution.

Affected Samples:
F1I010435 (3): A04BMW707DD0001
F1I010435 (4): A04BMW707DD0001 DISSOLVED

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)

Batch: 1249124
The MSD recovery for sodium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

The serial dilution for calcium, sodium and strontium are outside the established QC limits, indicating matrix interference.

Affected Samples:
F1I010435 (1): AQUEOUS IDW
F1I010435 (3): A04BMW707DD0001
F1I010435 (4): A04BMW707DD0001 DISSOLVED

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)-TCLP

Batch: 1249119
The CCV recovery was outside the upper QC limit (greater than 110%) for silver indicating a potential high bias for those analytes in the samples associated with this CCV. These analytes were not detected above the reporting limit in the associated samples or were not target analytes for the associated samples.

Affected Samples:
F1I010435 (2): NON-AQUEOUS IDW

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

METHODS SUMMARY

F1I010435

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 1311/3010
Isotopic Thorium by Alpha Spectroscopy	EML A-01-R MOD	
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A	SW846 7470A
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A	SW846 7471A
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD
Semivolatile Organic Compounds by GC/MS	SW846 8270C	SW846 1311/3510
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	
Volatile Organics by GC/MS	SW846 8260B	SW846 1311/5030
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F1I010435

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
ML648	001	AQUEOUS IDW	08/31/11	09:30
ML649	002	NON-AQUEOUS IDW	08/31/11	10:20
ML65D	003	A04BMW707DD0001	08/31/11	11:50
ML65F	004	A04BMW707DD0001 DISSOLVED	08/31/11	11:50
ML65G	005	TRIP BLANK #7	08/31/11	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: AQUEOUS IDW

GC/MS Volatiles

Lot-Sample #...: F1I010435-001 Work Order #...: ML6481AC Matrix.....: WATER
Date Sampled...: 08/31/11 09:30 Date Received..: 09/01/11
Prep Date.....: 09/11/11 Analysis Date..: 09/11/11
Prep Batch #...: 1255150 Analysis Time..: 19:11
Dilution Factor: 1
Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
trans-1,3-Dichloro-propylene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Acetone	**5.2 B**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	**0.10 J**	**2.0**	**ug/L**
Chloroform	**0.20 J**	**1.0**	**ug/L**
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	**2.8**	**1.0**	**ug/L**
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	**0.11 J**	**1.0**	**ug/L**
1,2-Dichloroethene (total)	**1.5 J**	**2.0**	**ug/L**
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	**0.26 J**	**1.0**	**ug/L**
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: AQUEOUS IDW

GC/MS Volatiles

Lot-Sample #...: F1I010435-001 Work Order #...: ML6481AC Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	99	(85 - 120)
Dibromofluoromethane	98	(85 - 115)
1,2-Dichloroethane-d4	103	(70 - 120)
4-Bromofluorobenzene	100	(75 - 120)

NOTE(S):

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: AQUEOUS IDW

TOTAL Metals

Lot-Sample #...: F1I010435-001 Matrix.....: WATER
Date Sampled...: 08/31/11 09:30 Date Received..: 09/01/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1249123						
Uranium	0.28 J	1	ug/L	SW846 6020A	09/06-09/13/11	ML6481A5
		Dilution Factor: 1		Analysis Time..: 23:40		
Prep Batch #...: 1249124						
Silver	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML6481AF
		Dilution Factor: 1		Analysis Time..: 19:55		
Aluminum	437	200	ug/L	SW846 6010C	09/12-09/13/11	ML6481AG
		Dilution Factor: 1		Analysis Time..: 19:55		
Arsenic	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML6481AE
		Dilution Factor: 1		Analysis Time..: 19:55		
Barium	168	50	ug/L	SW846 6010C	09/12-09/13/11	ML6481AH
		Dilution Factor: 1		Analysis Time..: 19:55		
Beryllium	ND	5	ug/L	SW846 6010C	09/12-09/14/11	ML6481AJ
		Dilution Factor: 1		Analysis Time..: 09:26		
Calcium	154000 E	10000	ug/L	SW846 6010C	09/12-09/13/11	ML6481AK
		Dilution Factor: 10		Analysis Time..: 19:55		
Cadmium	ND	5	ug/L	SW846 6010C	09/12-09/13/11	ML6481AL
		Dilution Factor: 1		Analysis Time..: 19:55		
Cobalt	ND	50	ug/L	SW846 6010C	09/12-09/13/11	ML6481AM
		Dilution Factor: 1		Analysis Time..: 19:55		
Chromium	ND	10	ug/L	SW846 6010C	09/12-09/14/11	ML6481AN
		Dilution Factor: 1		Analysis Time..: 09:26		
Copper	ND	25	ug/L	SW846 6010C	09/12-09/13/11	ML6481AP
		Dilution Factor: 1		Analysis Time..: 19:55		
Iron	4040	100	ug/L	SW846 6010C	09/12-09/13/11	ML6481AQ
		Dilution Factor: 1		Analysis Time..: 19:55		
Magnesium	53600	10000	ug/L	SW846 6010C	09/12-09/13/11	ML6481AR
		Dilution Factor: 10		Analysis Time..: 19:55		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: AQUEOUS IDW

TOTAL Metals

Lot-Sample #...: F1I010435-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**124**	**15**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML6481AT**
		Dilution Factor: 1		Analysis Time..: 19:55		
Sodium	**160000 NE**	**10000**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML6481AU**
		Dilution Factor: 10		Analysis Time..: 19:55		
Nickel	ND	40	ug/L	SW846 6010C	09/12-09/13/11	ML6481AV
		Dilution Factor: 1		Analysis Time..: 19:55		
Lead	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML6481AW
		Dilution Factor: 1		Analysis Time..: 19:55		
Antimony	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML6481AX
		Dilution Factor: 1		Analysis Time..: 19:55		
Selenium	ND	15	ug/L	SW846 6010C	09/12-09/13/11	ML6481A0
		Dilution Factor: 1		Analysis Time..: 19:55		
Strontium	**1960 E**	**50**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML6481A1**
		Dilution Factor: 10		Analysis Time..: 19:55		
Thallium	ND	20	ug/L	SW846 6010C	09/12-09/13/11	ML6481A2
		Dilution Factor: 1		Analysis Time..: 19:55		
Vanadium	ND	50	ug/L	SW846 6010C	09/12-09/13/11	ML6481A3
		Dilution Factor: 1		Analysis Time..: 19:55		
Zinc	**30.2**	**20**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML6481A4**
		Dilution Factor: 1		Analysis Time..: 19:55		
Prep Batch #...: 1251138						
Mercury	ND	0.3	ug/L	SW846 7470A	09/13/11	ML6481AD
		Dilution Factor: 1		Analysis Time..: 13:03		

NOTE(S):

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: NON-AQUEOUS IDW

TCLP GC/MS Volatiles

Lot-Sample #...: F1I010435-002	**Work Order #...:** ML6491AP	**Matrix.....:** SOLID	
Date Sampled...: 08/31/11 10:20	**Date Received..:** 09/01/11		
Leach Date.....: 09/06/11	**Prep Date.....:** 09/08/11	**Analysis Date..:** 09/08/11	
Leach Batch #..: P124907	**Prep Batch #...:** 1251207	**Analysis Time..:** 23:22	
Dilution Factor: 1			
% Moisture.....: 62	**Method.....:** SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	50	ug/L
2-Butanone	ND	50	ug/L
Carbon tetrachloride	ND	50	ug/L
Chlorobenzene	**5.3 J,B**	**50**	**ug/L**
Chloroform	ND	50	ug/L
1,4-Dichlorobenzene	ND	50	ug/L
1,2-Dichloroethane	ND	50	ug/L
1,1-Dichloroethene	ND	50	ug/L
Tetrachloroethene	ND	50	ug/L
Trichloroethene	ND	50	ug/L
Vinyl chloride	ND	100	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(85 - 115)
Toluene-d8	101	(85 - 120)
4-Bromofluorobenzene	95	(75 - 120)
1,2-Dichloroethane-d4	105	(70 - 120)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Estimated result. Result is less than RL.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Shaw Environmental & Infrastructure Inc

Client Sample ID: NON-AQUEOUS IDW

TCLP GC/MS Semivolatiles

Lot-Sample #...: F1I010435-002	**Work Order #...:** ML6491AQ	**Matrix.....:** SOLID	
Date Sampled...: 08/31/11 10:20	**Date Received..:** 09/01/11		
Leach Date.....: 09/02/11	**Prep Date.....:** 09/07/11	**Analysis Date..:** 09/11/11	
Leach Batch #..: P124506	**Prep Batch #...:** 1250060	**Analysis Time..:** 23:00	
Dilution Factor: 1			
% Moisture.....: 62	**Method.....:** SW846 8270C		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,4-Dichlorobenzene	ND	50	ug/L
2,4-Dinitrotoluene	ND	50	ug/L
Hexachlorobenzene	ND	50	ug/L
Hexachlorobutadiene	ND	50	ug/L
Hexachloroethane	ND	50	ug/L
2-Methylphenol	ND	50	ug/L
3-Methylphenol & 4-Methylphenol	ND	50	ug/L
Nitrobenzene	ND	50	ug/L
Pentachlorophenol	ND	250	ug/L
Pyridine	ND	100	ug/L
2,4,5-Trichlorophenol	ND	50	ug/L
2,4,6-Trichlorophenol	ND	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	68	(20 - 110)
Phenol-d5	62	(10 - 115)
Nitrobenzene-d5	80	(40 - 110)
2-Fluorobiphenyl	76	(50 - 110)
Terphenyl-d14	74	(50 - 135)
2,4,6-Tribromophenol	90	(40 - 125)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Shaw Environmental & Infrastructure Inc

Client Sample ID: NON-AQUEOUS IDW

TOTAL Metals

Lot-Sample #...: F1I010435-002 Matrix.....: SOLID
Date Sampled...: 08/31/11 10:20 Date Received..: 09/01/11
% Moisture.....: 62

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1256029						
Mercury	ND N	0.11	mg/kg	SW846 7471A	09/13/11	ML6491AR
		Dilution Factor: 1		Analysis Time..: 10:36		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: NON-AQUEOUS IDW

TCLP Metals

Lot-Sample #...: F1I010435-002 **Matrix.....:** SOLID
Date Sampled...: 08/31/11 10:20 **Date Received..:** 09/01/11
Leach Date.....: 09/02/11 **Leach Batch #..:** P124506

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1249119						
Silver	ND	40	ug/L	SW846 6010B	09/06-09/09/11	ML6491AH
		Dilution Factor: 1		Analysis Time..: 18:13		
Arsenic	ND	500	ug/L	SW846 6010B	09/06-09/09/11	ML6491AJ
		Dilution Factor: 1		Analysis Time..: 18:13		
Barium	**377**	**125**	**ug/L**	**SW846 6010B**	**09/06-09/12/11**	**ML6491AK**
		Dilution Factor: 1		Analysis Time..: 14:36		
Chromium	**8.8 J**	**25**	**ug/L**	**SW846 6010B**	**09/06-09/09/11**	**ML6491AL**
		Dilution Factor: 1		Analysis Time..: 18:13		
Lead	ND	250	ug/L	SW846 6010B	09/06-09/09/11	ML6491AM
		Dilution Factor: 1		Analysis Time..: 18:13		
Selenium	**7.7 J**	**800**	**ug/L**	**SW846 6010B**	**09/06-09/09/11**	**ML6491AN**
		Dilution Factor: 1		Analysis Time..: 18:13		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: NON-AQUEOUS IDW

General Chemistry

Lot-Sample #...: F1I010435-002 Work Order #...: ML649 Matrix.....: SOLID
Date Sampled...: 08/31/11 10:20 Date Received..: 09/01/11
% Moisture.....: 62

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	62.3	0.10	%	MCAWW 160.3 MOD	09/06-09/07/11	1249010
	Dilution Factor: 1			Analysis Time..: 00:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001

TOTAL Metals

Lot-Sample #...: F1I010435-003 Matrix.....: WATER
Date Sampled...: 08/31/11 11:50 Date Received..: 09/01/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1249123						
Uranium	34.5	10	ug/L	SW846 6020A	09/06-09/14/11	ML65D1A2
		Dilution Factor: 10		Analysis Time..: 00:08		
Prep Batch #...: 1249124						
Silver	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AC
		Dilution Factor: 1		Analysis Time..: 20:34		
Aluminum	2320	200	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AD
		Dilution Factor: 1		Analysis Time..: 20:34		
Arsenic	2.6 J	10	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AA
		Dilution Factor: 1		Analysis Time..: 20:34		
Barium	183	50	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AE
		Dilution Factor: 1		Analysis Time..: 20:34		
Beryllium	0.99 J	5	ug/L	SW846 6010C	09/12-09/14/11	ML65D1AF
		Dilution Factor: 1		Analysis Time..: 09:52		
Calcium	1200000 E	50000	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AG
		Dilution Factor: 50		Analysis Time..: 19:23		
Cadmium	ND	5	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AH
		Dilution Factor: 1		Analysis Time..: 20:34		
Cobalt	9.2 J	50	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AJ
		Dilution Factor: 1		Analysis Time..: 20:34		
Chromium	4.2 J	10	ug/L	SW846 6010C	09/12-09/14/11	ML65D1AK
		Dilution Factor: 1		Analysis Time..: 09:52		
Copper	14.4 J	25	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AL
		Dilution Factor: 1		Analysis Time..: 20:34		
Iron	3710	100	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AM
		Dilution Factor: 1		Analysis Time..: 20:34		
Magnesium	544000	50000	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AN
		Dilution Factor: 50		Analysis Time..: 19:23		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001

TOTAL Metals

Lot-Sample #...: F1I010435-003 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	862	15	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AP
		Dilution Factor: 1		Analysis Time..: 20:34		
Sodium	3700000 NE	50000	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AQ
		Dilution Factor: 50		Analysis Time..: 19:23		
Nickel	ND	40	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AR
		Dilution Factor: 1		Analysis Time..: 20:34		
Lead	2.0 J	10	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AT
		Dilution Factor: 1		Analysis Time..: 20:34		
Antimony	12.5	10	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AU
		Dilution Factor: 1		Analysis Time..: 20:34		
Selenium	11.2 J	15	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AV
		Dilution Factor: 1		Analysis Time..: 20:34		
Strontium	19000 E	250	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AW
		Dilution Factor: 50		Analysis Time..: 19:23		
Thallium	ND	20	ug/L	SW846 6010C	09/12-09/13/11	ML65D1AX
		Dilution Factor: 1		Analysis Time..: 20:34		
Vanadium	4.5 J	50	ug/L	SW846 6010C	09/12-09/13/11	ML65D1A0
		Dilution Factor: 1		Analysis Time..: 20:34		
Zinc	47.3	20	ug/L	SW846 6010C	09/12-09/13/11	ML65D1A1
		Dilution Factor: 1		Analysis Time..: 20:34		

NOTE(S):

J Estimated result. Result is less than RL.

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1I010435-004 Matrix.....: WATER
Date Sampled...: 08/31/11 11:50 Date Received..: 09/01/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1249123						
Uranium	33.9	10	ug/L	SW846 6020A	09/06-09/14/11	ML65F1A2
		Dilution Factor: 10		Analysis Time..: 00:15		
Prep Batch #...: 1249124						
Silver	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AC
		Dilution Factor: 1		Analysis Time..: 20:47		
Aluminum	840	200	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AD
		Dilution Factor: 1		Analysis Time..: 20:47		
Arsenic	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AA
		Dilution Factor: 1		Analysis Time..: 20:47		
Barium	172	50	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AE
		Dilution Factor: 1		Analysis Time..: 20:47		
Beryllium	ND	5	ug/L	SW846 6010C	09/12-09/14/11	ML65F1AF
		Dilution Factor: 1		Analysis Time..: 10:05		
Calcium	1260000 E	50000	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AG
		Dilution Factor: 50		Analysis Time..: 19:36		
Cadmium	ND	5	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AH
		Dilution Factor: 1		Analysis Time..: 20:47		
Cobalt	7.3 J	50	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AJ
		Dilution Factor: 1		Analysis Time..: 20:47		
Chromium	ND	10	ug/L	SW846 6010C	09/12-09/14/11	ML65F1AK
		Dilution Factor: 1		Analysis Time..: 10:05		
Copper	ND	25	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AL
		Dilution Factor: 1		Analysis Time..: 20:47		
Iron	1400	100	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AM
		Dilution Factor: 1		Analysis Time..: 20:47		
Magnesium	586000	50000	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AN
		Dilution Factor: 50		Analysis Time..: 19:36		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0001 DISSOLVED

TOTAL Metals

Lot-Sample #...: F1I010435-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	**489**	**15**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML65F1AP**
		Dilution Factor: 1		Analysis Time..: 20:47		
Sodium	**4180000 NE**	**50000**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML65F1AQ**
		Dilution Factor: 50		Analysis Time..: 19:36		
Nickel	ND	40	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AR
		Dilution Factor: 1		Analysis Time..: 20:47		
Lead	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AT
		Dilution Factor: 1		Analysis Time..: 20:47		
Antimony	**8.0 J**	**10**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML65F1AU**
		Dilution Factor: 1		Analysis Time..: 20:47		
Selenium	ND	15	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AV
		Dilution Factor: 1		Analysis Time..: 20:47		
Strontium	**21700 E**	**250**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML65F1AW**
		Dilution Factor: 50		Analysis Time..: 19:36		
Thallium	ND	20	ug/L	SW846 6010C	09/12-09/13/11	ML65F1AX
		Dilution Factor: 1		Analysis Time..: 20:47		
Vanadium	ND	50	ug/L	SW846 6010C	09/12-09/13/11	ML65F1A0
		Dilution Factor: 1		Analysis Time..: 20:47		
Zinc	**19.6 J**	**20**	**ug/L**	**SW846 6010C**	**09/12-09/13/11**	**ML65F1A1**
		Dilution Factor: 1		Analysis Time..: 20:47		

NOTE(S):

E Matrix interference.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #7

GC/MS Volatiles

Lot-Sample #...: F1I010435-005 **Work Order #...:** ML65G1AA **Matrix.....:** WATER
Date Sampled...: 08/31/11 **Date Received..:** 09/01/11
Prep Date.....: 09/11/11 **Analysis Date..:** 09/11/11
Prep Batch #...: 1255150 **Analysis Time..:** 18:46
Dilution Factor: 1

Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	**3.2 B**	**2.0**	**ug/L**
Benzene	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
2-Butanone	ND	5.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,2-Dichloroethene (total)	ND	2.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	1.0	ug/L
trans-1,3-Dichloropropylene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Styrene	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	2.0	ug/L
Xylenes (total)	ND	5.0	ug/L

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: TRIP BLANK #7

GC/MS Volatiles

Lot-Sample #...: F1I010435-005 Work Order #...: ML65G1AA Matrix.....: WATER

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	99	(85 - 120)
Dibromofluoromethane	94	(85 - 115)
1,2-Dichloroethane-d4	94	(70 - 120)
4-Bromofluorobenzene	100	(75 - 120)

NOTE(S):

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 **Work Order #...:** MMDNX1AA **Matrix.....:** WATER
MB Lot-Sample #: F1I120000-150

Prep Date.....: 09/11/11 **Analysis Time..:** 18:18
Analysis Date..: 09/11/11 **Prep Batch #...:** 1255150
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	**1.9 J**	**2.0**	**ug/L**	**SW846 8260B**
Benzene	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,2-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,3-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,4-Dichlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloro-propylene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	5.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	99	(85 - 120)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 Work Order #...: MMDNX1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Dibromofluoromethane	94	(85 - 115)		
1,2-Dichloroethane-d4	98	(70 - 120)		
4-Bromofluorobenzene	100	(75 - 120)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

TCLP GC/MS Volatiles

Client Lot #...: F1I010435 **Work Order #...:** ML8Q21AA **Matrix.....:** SOLID
MB Lot-Sample #: F1I060000-082
Leach Date.....: 09/06/11 **Prep Date.....:** 09/08/11 **Analysis Date..:** 09/08/11
Leach Batch #..: P124907 **Prep Batch #...:** 1251207 **Analysis Time..:** 22:58
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	50	ug/L	SW846 8260B
2-Butanone	ND	50	ug/L	SW846 8260B
Carbon tetrachloride	ND	50	ug/L	SW846 8260B
Chlorobenzene	**6.0 J**	**50**	**ug/L**	**SW846 8260B**
Chloroform	ND	50	ug/L	SW846 8260B
1,4-Dichlorobenzene	**3.6 J**	**50**	**ug/L**	**SW846 8260B**
1,2-Dichloroethane	ND	50	ug/L	SW846 8260B
1,1-Dichloroethene	ND	50	ug/L	SW846 8260B
Tetrachloroethene	ND	50	ug/L	SW846 8260B
Trichloroethene	ND	50	ug/L	SW846 8260B
Vinyl chloride	ND	100	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	97	(85 - 115)
Toluene-d8	101	(85 - 120)
4-Bromofluorobenzene	97	(75 - 120)
1,2-Dichloroethane-d4	100	(70 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

TCLP GC/MS Semivolatiles

Client Lot #...: F1I010435 Work Order #...: ML7VQ1AH Matrix.....: SOLID
MB Lot-Sample #: F1I020000-029
Leach Date.....: 09/02/11 Prep Date.....: 09/07/11 Analysis Date..: 09/11/11
Leach Batch #..: P124506 Prep Batch #...: 1250060 Analysis Time..: 15:20
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,4,5-Trichloro-phenol	ND	50	ug/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	50	ug/L	SW846 8270C
3-Methylphenol & 4-Methylphenol	ND	50	ug/L	SW846 8270C
1,4-Dichlorobenzene	ND	50	ug/L	SW846 8270C
2,4-Dinitrotoluene	ND	50	ug/L	SW846 8270C
Hexachlorobenzene	ND	50	ug/L	SW846 8270C
Hexachlorobutadiene	ND	50	ug/L	SW846 8270C
Hexachloroethane	ND	50	ug/L	SW846 8270C
2-Methylphenol	ND	50	ug/L	SW846 8270C
Nitrobenzene	ND	50	ug/L	SW846 8270C
Pentachlorophenol	ND	250	ug/L	SW846 8270C
Pyridine	ND	100	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	58	(20 - 110)
Phenol-d5	56	(10 - 115)
Nitrobenzene-d5	65	(40 - 110)
2-Fluorobiphenyl	64	(50 - 110)
Terphenyl-d14	78	(50 - 135)
2,4,6-Tribromophenol	73	(40 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1I060000-123 **Prep Batch #...:** 1249123						
Uranium	ND	1	ug/L	SW846 6020A	09/06-09/13/11	ML8V01AA
		Dilution Factor: 1				
		Analysis Time..: 23:26				
MB Lot-Sample #: F1I060000-124 **Prep Batch #...:** 1249124						
Aluminum	ND	200	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AD
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Antimony	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AU
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Arsenic	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AA
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Barium	ND	50	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AE
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Beryllium	ND	5	ug/L	SW846 6010C	09/12-09/14/11	ML8V21AF
		Dilution Factor: 1				
		Analysis Time..: 09:13				
Cadmium	ND	5	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AH
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Calcium	ND	1000	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AG
		Dilution Factor: 1				
		Analysis Time..: 18:46				
Chromium	ND	10	ug/L	SW846 6010C	09/12-09/14/11	ML8V21AK
		Dilution Factor: 1				
		Analysis Time..: 09:13				
Cobalt	ND	50	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AJ
		Dilution Factor: 1				
		Analysis Time..: 18:57				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	ND	25	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AL
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Iron	ND	100	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AM
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Lead	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AT
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Magnesium	ND	1000	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AN
		Dilution Factor: 1				
		Analysis Time..: 18:46				
Manganese	ND	15	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AP
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Nickel	ND	40	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AR
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Selenium	ND	15	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AV
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Silver	ND	10	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AC
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Sodium	ND	1000	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AQ
		Dilution Factor: 1				
		Analysis Time..: 18:46				
Strontium	ND	5	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AW
		Dilution Factor: 1				
		Analysis Time..: 18:46				
Thallium	ND	20	ug/L	SW846 6010C	09/12-09/13/11	ML8V21AX
		Dilution Factor: 1				
		Analysis Time..: 18:57				
Vanadium	ND	50	ug/L	SW846 6010C	09/12-09/13/11	ML8V21A0
		Dilution Factor: 1				
		Analysis Time..: 18:57				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	ND	20	ug/L	SW846 6010C	09/12-09/13/11	ML8V21A1
		Dilution Factor: 1				
		Analysis Time..: 18:57				

MB Lot-Sample #: F1I080000-138 **Prep Batch #...:** 1251138

Mercury	ND	0.3	ug/L	SW846 7470A	09/13/11	ML9961AA
		Dilution Factor: 1				
		Analysis Time..: 13:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1I130000-029 **Prep Batch #...:** 1256029						
Mercury	ND	0.040	mg/kg	SW846 7471A	09/13/11	MMDP51AA
		Dilution Factor: 1				
		Analysis Time..: 10:33				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: F1I010435 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1I020000-029 **Prep Batch #...:** 1249119						
Leach Date.....: 09/02/11 **Leach Batch #..:** P124506						
Arsenic	ND	500	ug/L	SW846 6010B	09/06-09/09/11	ML7VQ1AC
		Dilution Factor: 1				
		Analysis Time..: 18:00				
Barium	ND	125	ug/L	SW846 6010B	09/06-09/12/11	ML7VQ1AD
		Dilution Factor: 1				
		Analysis Time..: 14:23				
Chromium	ND	25	ug/L	SW846 6010B	09/06-09/09/11	ML7VQ1AE
		Dilution Factor: 1				
		Analysis Time..: 18:00				
Lead	ND	250	ug/L	SW846 6010B	09/06-09/09/11	ML7VQ1AF
		Dilution Factor: 1				
		Analysis Time..: 18:00				
Selenium	ND	800	ug/L	SW846 6010B	09/06-09/09/11	ML7VQ1AG
		Dilution Factor: 1				
		Analysis Time..: 18:00				
Silver	ND	40	ug/L	SW846 6010B	09/06-09/09/11	ML7VQ1AA
		Dilution Factor: 1				
		Analysis Time..: 18:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 Work Order #...: MMDNX1AC Matrix.....: WATER
LCS Lot-Sample#: F1I120000-150
Prep Date.....: 09/11/11 Analysis Date..: 09/11/11
Prep Batch #...: 1255150 Analysis Time..: 17:29
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
cis-1,3-Dichloropropene	109	(70 - 130)	SW846 8260B
Dibromochloromethane	109	(60 - 135)	SW846 8260B
Vinyl chloride	104	(50 - 145)	SW846 8260B
Bromomethane	96	(30 - 145)	SW846 8260B
Chloroethane	102	(60 - 135)	SW846 8260B
Acetone	108	(40 - 140)	SW846 8260B
1,1-Dichloroethene	109	(70 - 130)	SW846 8260B
Methylene chloride	104	(55 - 140)	SW846 8260B
Carbon disulfide	100	(35 - 160)	SW846 8260B
1,1-Dichloroethane	112	(70 - 135)	SW846 8260B
2-Butanone	98	(30 - 150)	SW846 8260B
1,2-Dichloroethene (total)	103	(85 - 115)	SW846 8260B
Chloroform	106	(65 - 135)	SW846 8260B
1,1,1-Trichloroethane	108	(65 - 130)	SW846 8260B
Carbon tetrachloride	111	(65 - 140)	SW846 8260B
1,2-Dichloroethane	100	(70 - 130)	SW846 8260B
Benzene	106	(80 - 120)	SW846 8260B
Trichloroethene	106	(70 - 125)	SW846 8260B
1,2-Dichloropropane	108	(75 - 125)	SW846 8260B
Bromodichloromethane	110	(75 - 120)	SW846 8260B
1,1,2-Trichloroethane	104	(75 - 125)	SW846 8260B
trans-1,3-Dichloropropyle	116	(55 - 140)	SW846 8260B
Toluene	114	(75 - 120)	SW846 8260B
1,3-Dichlorobenzene	123	(75 - 125)	SW846 8260B
1,4-Dichlorobenzene	116	(75 - 125)	SW846 8260B
2-Hexanone	100	(55 - 130)	SW846 8260B
4-Methyl-2-pentanone	109	(60 - 135)	SW846 8260B
Chlorobenzene	115	(80 - 120)	SW846 8260B
Bromoform	139 a	(70 - 130)	SW846 8260B
Ethylbenzene	118	(75 - 125)	SW846 8260B
Styrene	113	(65 - 135)	SW846 8260B
1,1,2,2-Tetrachloroethane	128	(65 - 130)	SW846 8260B
Tetrachloroethene	113	(45 - 150)	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 **Work Order #...:** MMDNX1AC **Matrix.....:** WATER
LCS Lot-Sample#: F1I120000-150

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,2-Dichlorobenzene	**119**	**(70 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	100	(85 - 120)
Dibromofluoromethane	95	(85 - 115)
1,2-Dichloroethane-d4	95	(70 - 120)
4-Bromofluorobenzene	110	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 **Work Order #...:** MMCWV1AA **Matrix.....:** SOLID
LCS Lot-Sample#: F1I080000-207
Prep Date.....: 09/08/11 **Analysis Date..:** 09/08/11
Prep Batch #...: 1251207 **Analysis Time..:** 22:09
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Vinyl chloride	**98**	**(50 - 145)**	**SW846 8260B**
1,1-Dichloroethene	**85**	**(70 - 130)**	**SW846 8260B**
2-Butanone	**84**	**(30 - 150)**	**SW846 8260B**
Chloroform	**96**	**(65 - 135)**	**SW846 8260B**
Carbon tetrachloride	**94**	**(65 - 140)**	**SW846 8260B**
1,2-Dichloroethane	**99**	**(70 - 130)**	**SW846 8260B**
Benzene	**103**	**(80 - 120)**	**SW846 8260B**
Trichloroethene	**94**	**(70 - 125)**	**SW846 8260B**
Tetrachloroethene	**94**	**(45 - 150)**	**SW846 8260B**
Chlorobenzene	**96**	**(80 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(85 - 115)
Toluene-d8	98	(85 - 120)
4-Bromofluorobenzene	95	(75 - 120)
1,2-Dichloroethane-d4	101	(70 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: F1I010435 Work Order #...: ML9D21AA Matrix.....: SOLID
LCS Lot-Sample#: F1I070000-060
Prep Date.....: 09/07/11 Analysis Date..: 09/11/11
Prep Batch #...: 1250060 Analysis Time..: 15:53
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Pyridine	**35**	**(20 - 52)**	**SW846 8270C**
1,4-Dichlorobenzene	**74**	**(30 - 100)**	**SW846 8270C**
2-Methylphenol	**75**	**(40 - 110)**	**SW846 8270C**
3-Methylphenol & 4-Methylphenol	**77**	**(30 - 110)**	**SW846 8270C**
Hexachloroethane	**75**	**(30 - 95)**	**SW846 8270C**
Nitrobenzene	**76**	**(45 - 110)**	**SW846 8270C**
Hexachlorobutadiene	**76**	**(25 - 105)**	**SW846 8270C**
2,4,5-Trichlorophenol	**74**	**(50 - 110)**	**SW846 8270C**
2,4,6-Trichlorophenol	**75**	**(50 - 115)**	**SW846 8270C**
2,4-Dinitrotoluene	**74**	**(50 - 120)**	**SW846 8270C**
Hexachlorobenzene	**78**	**(50 - 110)**	**SW846 8270C**
Pentachlorophenol	**63**	**(40 - 115)**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	70	(20 - 110)
Phenol-d5	67	(10 - 115)
Nitrobenzene-d5	79	(40 - 110)
2-Fluorobiphenyl	77	(50 - 110)
Terphenyl-d14	96	(50 - 135)
2,4,6-Tribromophenol	89	(40 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1I060000-123 **Prep Batch #...:** 1249123					
Uranium	102	(80 - 120)	SW846 6020A	09/06-09/13/11	ML8V01AC
		Dilution Factor: 1		Analysis Time..: 23:33	
LCS Lot-Sample#: F1I060000-124 **Prep Batch #...:** 1249124					
Arsenic	100	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21A2
		Dilution Factor: 1		Analysis Time..: 19:04	
Silver	97	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21A3
		Dilution Factor: 1		Analysis Time..: 19:04	
Aluminum	92	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21A4
		Dilution Factor: 1		Analysis Time..: 19:04	
Barium	105	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21A5
		Dilution Factor: 1		Analysis Time..: 19:04	
Beryllium	114	(80 - 120)	SW846 6010C	09/12-09/14/11	ML8V21A6
		Dilution Factor: 1		Analysis Time..: 09:20	
Calcium	106	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21A7
		Dilution Factor: 1		Analysis Time..: 18:52	
Cadmium	102	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21A8
		Dilution Factor: 1		Analysis Time..: 19:04	
Cobalt	101	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21A9
		Dilution Factor: 1		Analysis Time..: 19:04	
Chromium	105	(80 - 120)	SW846 6010C	09/12-09/14/11	ML8V21CA
		Dilution Factor: 1		Analysis Time..: 09:20	
Copper	99	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CC
		Dilution Factor: 1		Analysis Time..: 19:04	
Iron	102	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CD
		Dilution Factor: 1		Analysis Time..: 19:04	
Magnesium	102	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CE
		Dilution Factor: 1		Analysis Time..: 18:52	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Manganese	103	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CF
		Dilution Factor: 1	Analysis Time..: 19:04		
Sodium	103	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CG
		Dilution Factor: 1	Analysis Time..: 18:52		
Nickel	99	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CH
		Dilution Factor: 1	Analysis Time..: 19:04		
Lead	99	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CJ
		Dilution Factor: 1	Analysis Time..: 19:04		
Antimony	102	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CK
		Dilution Factor: 1	Analysis Time..: 19:04		
Selenium	100	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CL
		Dilution Factor: 1	Analysis Time..: 19:04		
Strontium	104	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CM
		Dilution Factor: 1	Analysis Time..: 18:52		
Thallium	98	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CN
		Dilution Factor: 1	Analysis Time..: 19:04		
Vanadium	102	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CP
		Dilution Factor: 1	Analysis Time..: 19:04		
Zinc	108	(80 - 120)	SW846 6010C	09/12-09/13/11	ML8V21CQ
		Dilution Factor: 1	Analysis Time..: 19:04		
LCS Lot-Sample#: F1I080000-138		**Prep Batch #...:** 1251138			
Mercury	101	(80 - 120)	SW846 7470A	09/13/11	ML9961AC
		Dilution Factor: 1	Analysis Time..: 13:02		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1I130000-029 **Prep Batch #...:** 1256029					
Mercury	112	(80 - 120)	SW846 7471A	09/13/11	MMDP51AC
		Dilution Factor: 1		Analysis Time..: 10:35	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: F1I010435 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1I060000-119 **Prep Batch #...:** 1249119					
Silver	96	(80 - 120)	SW846 6010B	09/06-09/09/11	ML8VR1AA
		Dilution Factor: 1	Analysis Time..: 18:06		
Arsenic	95	(80 - 120)	SW846 6010B	09/06-09/09/11	ML8VR1AC
		Dilution Factor: 1	Analysis Time..: 18:06		
Barium	102	(80 - 120)	SW846 6010B	09/06-09/12/11	ML8VR1AD
		Dilution Factor: 1	Analysis Time..: 14:29		
Chromium	96	(80 - 120)	SW846 6010B	09/06-09/09/11	ML8VR1AE
		Dilution Factor: 1	Analysis Time..: 18:06		
Lead	96	(80 - 120)	SW846 6010B	09/06-09/09/11	ML8VR1AF
		Dilution Factor: 1	Analysis Time..: 18:06		
Selenium	98	(80 - 120)	SW846 6010B	09/06-09/09/11	ML8VR1AG
		Dilution Factor: 1	Analysis Time..: 18:06		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 Work Order #...: ML6481DW-MS Matrix.....: WATER
MS Lot-Sample #: F1I010435-001 ML6481DX-MSD
Date Sampled...: 08/31/11 09:30 Date Received..: 09/01/11
Prep Date.....: 09/11/11 Analysis Date..: 09/11/11
Prep Batch #...: 1255150 Analysis Time..: 19:35
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
cis-1,3-Dichloropropene	110	(70 - 130)			SW846 8260B
	109	(70 - 130)	1.6	(0-20)	SW846 8260B
Dibromochloromethane	110	(60 - 135)			SW846 8260B
	109	(60 - 135)	1.1	(0-20)	SW846 8260B
Vinyl chloride	96	(50 - 145)			SW846 8260B
	93	(50 - 145)	2.3	(0-20)	SW846 8260B
Bromomethane	92	(30 - 145)			SW846 8260B
	87	(30 - 145)	4.9	(0-20)	SW846 8260B
Chloroethane	98	(60 - 135)			SW846 8260B
	93	(60 - 135)	5.5	(0-20)	SW846 8260B
Acetone	65	(40 - 140)			SW846 8260B
	57	(40 - 140)	7.4	(0-20)	SW846 8260B
1,1-Dichloroethene	99	(70 - 130)			SW846 8260B
	98	(70 - 130)	1.0	(0-20)	SW846 8260B
Methylene chloride	107	(55 - 140)			SW846 8260B
	109	(55 - 140)	2.1	(0-20)	SW846 8260B
Carbon disulfide	98	(35 - 160)			SW846 8260B
	95	(35 - 160)	2.9	(0-20)	SW846 8260B
1,1-Dichloroethane	112	(70 - 135)			SW846 8260B
	111	(70 - 135)	0.78	(0-20)	SW846 8260B
2-Butanone	106	(30 - 150)			SW846 8260B
	109	(30 - 150)	2.9	(0-20)	SW846 8260B
1,2-Dichloroethene (total)	107	(85 - 115)			SW846 8260B
	106	(85 - 115)	0.70	(0-20)	SW846 8260B
Chloroform	106	(65 - 135)			SW846 8260B
	109	(65 - 135)	2.6	(0-20)	SW846 8260B
1,1,1-Trichloroethane	106	(65 - 130)			SW846 8260B
	105	(65 - 130)	1.0	(0-20)	SW846 8260B
Carbon tetrachloride	104	(65 - 140)			SW846 8260B
	103	(65 - 140)	1.4	(0-20)	SW846 8260B
1,2-Dichloroethane	107	(70 - 130)			SW846 8260B
	111	(70 - 130)	3.4	(0-20)	SW846 8260B
Benzene	108	(80 - 120)			SW846 8260B
	109	(80 - 120)	0.46	(0-20)	SW846 8260B
Trichloroethene	103	(70 - 125)			SW846 8260B
	103	(70 - 125)	0.68	(0-20)	SW846 8260B
1,2-Dichloropropane	109	(75 - 125)			SW846 8260B
	107	(75 - 125)	1.2	(0-20)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 Work Order #...: ML6481DW-MS Matrix.....: WATER
MS Lot-Sample #: F1I010435-001 ML6481DX-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Bromodichloromethane	108	(75 - 120)			SW846 8260B
	109	(75 - 120)	0.83	(0-20)	SW846 8260B
1,1,2-Trichloroethane	108	(75 - 125)			SW846 8260B
	106	(75 - 125)	1.2	(0-20)	SW846 8260B
trans-1,3-Dichloropropyle	114	(55 - 140)			SW846 8260B
	114	(55 - 140)	0.35	(0-20)	SW846 8260B
Toluene	109	(75 - 120)			SW846 8260B
	107	(75 - 120)	1.9	(0-20)	SW846 8260B
1,3-Dichlorobenzene	108	(75 - 125)			SW846 8260B
	107	(75 - 125)	1.0	(0-20)	SW846 8260B
1,4-Dichlorobenzene	105	(75 - 125)			SW846 8260B
	106	(75 - 125)	1.1	(0-20)	SW846 8260B
2-Hexanone	97	(55 - 130)			SW846 8260B
	103	(55 - 130)	6.0	(0-20)	SW846 8260B
4-Methyl-2-pentanone	112	(60 - 135)			SW846 8260B
	116	(60 - 135)	3.9	(0-20)	SW846 8260B
Chlorobenzene	109	(80 - 120)			SW846 8260B
	108	(80 - 120)	0.46	(0-20)	SW846 8260B
Bromoform	120	(70 - 130)			SW846 8260B
	125	(70 - 130)	3.6	(0-20)	SW846 8260B
Ethylbenzene	108	(75 - 125)			SW846 8260B
	108	(75 - 125)	0.09	(0-20)	SW846 8260B
Styrene	109	(65 - 135)			SW846 8260B
	111	(65 - 135)	1.1	(0-20)	SW846 8260B
1,1,2,2-Tetrachloroethane	115	(65 - 130)			SW846 8260B
	117	(65 - 130)	1.4	(0-20)	SW846 8260B
Tetrachloroethene	104	(45 - 150)			SW846 8260B
	104	(45 - 150)	0.48	(0-20)	SW846 8260B
1,2-Dichlorobenzene	108	(70 - 120)			SW846 8260B
	108	(70 - 120)	0.27	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	98	(85 - 120)
	97	(85 - 120)
Dibromofluoromethane	101	(85 - 115)
	102	(85 - 115)
1,2-Dichloroethane-d4	98	(70 - 120)
	102	(70 - 120)
4-Bromofluorobenzene	103	(75 - 120)
	102	(75 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F1I010435 Work Order #...: ML6491CC-MS Matrix.....: SOLID
MS Lot-Sample #: F1I010435-002 ML6491CD-MSD
Date Sampled...: 08/31/11 10:20 Date Received..: 09/01/11
Prep Date.....: 09/08/11 Analysis Date..: 09/08/11
Prep Batch #...: 1251207 Analysis Time..: 23:47
Dilution Factor: 1 % Moisture.....: 62

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Vinyl chloride	106	(50 - 145)			SW846 8260B
	108	(50 - 145)	1.8	(0-20)	SW846 8260B
1,1-Dichloroethene	90	(70 - 130)			SW846 8260B
	90	(70 - 130)	0.22	(0-20)	SW846 8260B
2-Butanone	85	(30 - 150)			SW846 8260B
	93	(30 - 150)	8.7	(0-20)	SW846 8260B
Chloroform	98	(65 - 135)			SW846 8260B
	96	(65 - 135)	2.8	(0-20)	SW846 8260B
Carbon tetrachloride	98	(65 - 140)			SW846 8260B
	98	(65 - 140)	0.30	(0-20)	SW846 8260B
1,2-Dichloroethane	97	(70 - 130)			SW846 8260B
	94	(70 - 130)	3.5	(0-20)	SW846 8260B
Benzene	104	(80 - 120)			SW846 8260B
	102	(80 - 120)	2.0	(0-20)	SW846 8260B
Trichloroethene	92	(70 - 125)			SW846 8260B
	92	(70 - 125)	0.10	(0-20)	SW846 8260B
Tetrachloroethene	92	(45 - 150)			SW846 8260B
	90	(45 - 150)	2.2	(0-20)	SW846 8260B
Chlorobenzene	95	(80 - 120)			SW846 8260B
	94	(80 - 120)	0.60	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	101	(85 - 115)
	100	(85 - 115)
Toluene-d8	99	(85 - 120)
	97	(85 - 120)
4-Bromofluorobenzene	100	(75 - 120)
	99	(75 - 120)
1,2-Dichloroethane-d4	104	(70 - 120)
	101	(70 - 120)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...:	F1I010435	Work Order #...:	ML6491A9-MS	Matrix.....:	SOLID
MS Lot-Sample #:	F1I010435-002		ML6491CA-MSD		
Date Sampled...:	08/31/11 10:20	Date Received..:	09/01/11		
Prep Date.....:	09/07/11	Analysis Date..:	09/11/11		
Prep Batch #...:	1250060	Analysis Time..:	23:33		
Dilution Factor:	1	% Moisture.....:	62		

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Pyridine	41	(20 - 52)			SW846 8270C
	37	(20 - 52)	9.2	(0-20)	SW846 8270C
1,4-Dichlorobenzene	73	(30 - 100)			SW846 8270C
	67	(30 - 100)	8.9	(0-20)	SW846 8270C
2-Methylphenol	70	(40 - 110)			SW846 8270C
	68	(40 - 110)	3.9	(0-20)	SW846 8270C
3-Methylphenol & 4-Methylphenol	73	(30 - 110)			SW846 8270C
	71	(30 - 110)	3.6	(0-20)	SW846 8270C
Hexachloroethane	64	(30 - 95)			SW846 8270C
	59	(30 - 95)	8.8	(0-20)	SW846 8270C
Nitrobenzene	76	(45 - 110)			SW846 8270C
	71	(45 - 110)	6.9	(0-20)	SW846 8270C
Hexachlorobutadiene	75	(25 - 105)			SW846 8270C
	69	(25 - 105)	8.9	(0-20)	SW846 8270C
2,4,5-Trichlorophenol	79	(50 - 110)			SW846 8270C
	75	(50 - 110)	5.4	(0-20)	SW846 8270C
2,4,6-Trichlorophenol	76	(50 - 115)			SW846 8270C
	72	(50 - 115)	6.6	(0-20)	SW846 8270C
2,4-Dinitrotoluene	73	(50 - 120)			SW846 8270C
	70	(50 - 120)	4.5	(0-20)	SW846 8270C
Hexachlorobenzene	75	(50 - 110)			SW846 8270C
	71	(50 - 110)	5.5	(0-20)	SW846 8270C
Pentachlorophenol	70	(40 - 115)			SW846 8270C
	63	(40 - 115)	10	(0-20)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	67	(20 - 110)
	63	(20 - 110)
Phenol-d5	63	(10 - 115)
	61	(10 - 115)
Nitrobenzene-d5	79	(40 - 110)
	72	(40 - 110)

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: F1I010435 **Work Order #...:** ML6491A9-MS **Matrix.....:** SOLID
MS Lot-Sample #: F1I010435-002 ML6491CA-MSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorobiphenyl	74	(50 - 110)
	69	(50 - 110)
Terphenyl-d14	74	(50 - 135)
	74	(50 - 135)
2,4,6-Tribromophenol	88	(40 - 125)
	82	(40 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER
Date Sampled...: 08/31/11 09:30 **Date Received..:** 09/01/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1I010435-001 **Prep Batch #...:** 1249123							
Uranium	106	(80 - 120)			SW846 6020A	09/06-09/13/11	ML6481A8
	107	(80 - 120)	1.1	(0-20)	SW846 6020A	09/06-09/14/11	ML6481A9
		Dilution Factor: 1					
		Analysis Time..: 23:54					
MS Lot-Sample #: F1I010435-001 **Prep Batch #...:** 1249124							
Aluminum	109	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CF
	104	(80 - 120)	5.2	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CG
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Antimony	108	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481DD
	103	(80 - 120)	4.4	(0-20)	SW846 6010C	09/12-09/13/11	ML6481DE
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Arsenic	106	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CA
	100	(80 - 120)	5.4	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CC
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Barium	109	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CH
	103	(80 - 120)	4.5	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CJ
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Beryllium	112	(80 - 120)			SW846 6010C	09/12-09/14/11	ML6481CK
	112	(80 - 120)	0.90	(0-20)	SW846 6010C	09/12-09/14/11	ML6481CL
		Dilution Factor: 1					
		Analysis Time..: 09:39					
Cadmium	105	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CP
	99	(80 - 120)	5.5	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CQ
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Calcium	89	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CM
	83	(80 - 120)	0.33	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CN
		Dilution Factor: 10					
		Analysis Time..: 20:08					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER
Date Sampled...: 08/31/11 09:30 **Date Received..:** 09/01/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	103	(80 - 120)			SW846 6010C	09/12-09/14/11	ML6481CU
	105	(80 - 120)	1.7	(0-20)	SW846 6010C	09/12-09/14/11	ML6481CV
		Dilution Factor: 1					
		Analysis Time..: 09:39					
Cobalt	103	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CR
	98	(80 - 120)	5.1	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CT
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Copper	108	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CW
	103	(80 - 120)	5.1	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CX
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Iron	105	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481C0
	98	(80 - 120)	4.7	(0-20)	SW846 6010C	09/12-09/13/11	ML6481C1
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Lead	102	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481DA
	97	(80 - 120)	4.7	(0-20)	SW846 6010C	09/12-09/13/11	ML6481DC
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Magnesium	90	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481C2
	89	(80 - 120)	0.08	(0-20)	SW846 6010C	09/12-09/13/11	ML6481C3
		Dilution Factor: 10					
		Analysis Time..: 20:08					
Manganese	107	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481C4
	101	(80 - 120)	5.0	(0-20)	SW846 6010C	09/12-09/13/11	ML6481C5
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Nickel	103	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481C8
	98	(80 - 120)	5.3	(0-20)	SW846 6010C	09/12-09/13/11	ML6481C9
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Selenium	105	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481DF
	100	(80 - 120)	4.6	(0-20)	SW846 6010C	09/12-09/13/11	ML6481DG
		Dilution Factor: 1					
		Analysis Time..: 20:21					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** WATER
Date Sampled...: 08/31/11 09:30 **Date Received..:** 09/01/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Silver	103	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481CD
	99	(80 - 120)	4.6	(0-20)	SW846 6010C	09/12-09/13/11	ML6481CE
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Sodium	94	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481C6
	77 N	(80 - 120)	1.0	(0-20)	SW846 6010C	09/12-09/13/11	ML6481C7
		Dilution Factor: 10					
		Analysis Time..: 20:08					
Strontium	99	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481DH
	97	(80 - 120)	0.83	(0-20)	SW846 6010C	09/12-09/13/11	ML6481DJ
		Dilution Factor: 10					
		Analysis Time..: 20:08					
Thallium	101	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481DK
	95	(80 - 120)	5.5	(0-20)	SW846 6010C	09/12-09/13/11	ML6481DL
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Vanadium	106	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481DM
	101	(80 - 120)	4.9	(0-20)	SW846 6010C	09/12-09/13/11	ML6481DN
		Dilution Factor: 1					
		Analysis Time..: 20:21					
Zinc	113	(80 - 120)			SW846 6010C	09/12-09/13/11	ML6481DP
	107	(80 - 120)	5.4	(0-20)	SW846 6010C	09/12-09/13/11	ML6481DQ
		Dilution Factor: 1					
		Analysis Time..: 20:21					

MS Lot-Sample #: F1I010435-001 **Prep Batch #...:** 1251138

Mercury	102	(80 - 120)			SW846 7470A	09/13/11	ML6481DU
	100	(80 - 120)	1.8	(0-20)	SW846 7470A	09/13/11	ML6481DV
		Dilution Factor: 1					
		Analysis Time..: 13:07					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F1I010435 **Matrix.....:** SOLID
Date Sampled...: 08/31/11 10:20 **Date Received..:** 09/01/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1I010435-002 **Prep Batch #...:** 1256029						**% Moisture.....:** 62	
Mercury	128 N	(80 - 120)			SW846 7471A	09/13/11	ML6491CE
	132 N	(80 - 120)	2.9	(0-20)	SW846 7471A	09/13/11	ML6491CF
		Dilution Factor: 1					
		Analysis Time..: 10:43					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: F1I010435 **Matrix.....:** SOLID
Date Sampled...: 08/31/11 10:20 **Date Received..:** 09/01/11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1I010435-002 **Prep Batch #...:** 1249119							
Leach Date.....: 09/02/11 **Leach Batch #..:** P124506							
Arsenic	96	(80 - 120)			SW846 6010B	09/06-09/09/11	ML6491AV
	107	(80 - 120)	11	(0-20)	SW846 6010B	09/06-09/09/11	ML6491AW
		Dilution Factor: 1					
		Analysis Time..: 18:26					
Barium	93	(80 - 120)			SW846 6010B	09/06-09/12/11	ML6491AX
	95	(80 - 120)	1.8	(0-20)	SW846 6010B	09/06-09/12/11	ML6491A0
		Dilution Factor: 1					
		Analysis Time..: 14:48					
Chromium	99	(80 - 120)			SW846 6010B	09/06-09/09/11	ML6491A1
	109	(80 - 120)	10	(0-20)	SW846 6010B	09/06-09/09/11	ML6491A2
		Dilution Factor: 1					
		Analysis Time..: 18:26					
Lead	98	(80 - 120)			SW846 6010B	09/06-09/09/11	ML6491A3
	108	(80 - 120)	9.6	(0-20)	SW846 6010B	09/06-09/09/11	ML6491A4
		Dilution Factor: 1					
		Analysis Time..: 18:26					
Selenium	98	(80 - 120)			SW846 6010B	09/06-09/09/11	ML6491A5
	110	(80 - 120)	11	(0-20)	SW846 6010B	09/06-09/09/11	ML6491A6
		Dilution Factor: 1					
		Analysis Time..: 18:26					
Silver	92	(80 - 120)			SW846 6010B	09/06-09/09/11	ML6491AT
	101	(80 - 120)	9.2	(0-20)	SW846 6010B	09/06-09/09/11	ML6491AU
		Dilution Factor: 1					
		Analysis Time..: 18:26					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1I010435 **Work Order #...:** MLT1Q-SMP MLT1Q-DUP **Matrix.....:** SOLID

Date Sampled...: 08/10/11 11:48 **Date Received..:** 08/19/11

% Moisture.....: 41

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture						SD Lot-Sample #: F1H190417-002		
	40.9	40.9	%	0.049	(0-30)	MCAWW 160.3 MOD	09/06-09/07/11	1249010

Dilution Factor: 1 Analysis Time..: 00:00

Shaw Environmental & Infrastructure Inc

Client Sample ID: AQUEOUS IDW

Radiochemistry

Lab Sample ID: F1I010435-001
Work Order: ML648
Matrix: WATER

Date Collected: 08/31/11 0930
Date Received: 09/01/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1251056**	**Yld % 87**
Thorium 228	0.022	U	0.028	0.100	0.036	09/08/11	09/09/11
Thorium 230	**0.077**		**0.050**	0.100	**0.036**	**09/08/11**	**09/09/11**
Thorium 232	0.028	U	0.032	0.100	0.039	09/08/11	09/09/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1251057**	**Yld % 78**
Uranium 234	**0.102**		**0.062**	0.100	**0.054**	**09/08/11**	**09/09/11**
Uranium 235/236	0.011	U	0.021	0.100	0.029	09/08/11	09/09/11
Uranium 238	**0.082**		**0.054**	0.100	**0.038**	**09/08/11**	**09/09/11**

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: AQUEOUS IDW DUP

Radiochemistry

Lab Sample ID: F1I010435-001X
Work Order: ML648
Matrix: WATER

Date Collected: 08/31/11 0930
Date Received: 09/01/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1251056**	**Yld % 69**
Thorium 228	0.037	U	0.040	0.100	0.045	09/08/11	09/09/11
Thorium 230	**0.098**		**0.064**	0.100	0.045	09/08/11	09/09/11
Thorium 232	0.017	U	0.029	0.100	0.045	09/08/11	09/09/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 1251057**	**Yld % 74**
Uranium 234	**0.093**		0.063	0.100	0.052	09/08/11	09/09/11
Uranium 235/236	0.003	U	0.027	0.100	0.072	09/08/11	09/09/11
Uranium 238	**0.088**		0.063	0.100	0.062	09/08/11	09/09/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: NON-AQUEOUS IDW

Radiochemistry

Lab Sample ID: F1I010435-002
Work Order: ML649
Matrix: SOLID

Date Collected: 08/31/11 1020
Date Received: 09/01/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1249211		Yld % 84
Uranium 234	0.337		0.079	0.100	0.021	09/06/11	09/14/11
Uranium 235/236	0.009	U	0.014	0.100	0.023	09/06/11	09/14/11
Uranium 238	0.322		0.077	0.100	0.011	09/06/11	09/14/11
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g	Batch # 1249210		Yld % 51
Thorium 228	0.35		0.11	0.10	0.05	09/06/11	09/14/11
Thorium 230	0.40		0.11	0.10	0.03	09/06/11	09/14/11
Thorium 232	0.259		0.088	0.100	0.032	09/06/11	09/14/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: NON-AOUEOUS IDW DUP

Radiochemistry

Lab Sample ID: F1I010435-002X
Work Order: ML649
Matrix: SOLID

Date Collected: 08/31/11 1020
Date Received: 09/01/11 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 1249210	Yld % 55
Thorium 228	0.318		0.096	0.100	0.048	09/06/11	09/14/11
Thorium 230	0.38		0.10	0.10	0.03	09/06/11	09/14/11
Thorium 232	0.244		0.081	0.100	0.029	09/06/11	09/14/11
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/g		Batch # 1249211	Yld % 84
Uranium 234	0.303		0.073	0.100	0.017	09/06/11	09/14/11
Uranium 235/236	0.014		0.016	0.100	0.013	09/06/11	09/14/11
Uranium 238	0.417		0.087	0.100	0.010	09/06/11	09/14/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1I010435
Matrix: SOLID

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/g**	**Batch # 1249211**		**Yld % 95**		**F1I060000-211B**
Uranium 234	-0.0009	U	0.0086	0.100	0.026	09/06/11	09/14/11	
Uranium 235/236	-0.0023	U	0.0033	0.100	0.025	09/06/11	09/14/11	
Uranium 238	0.008	U	0.011	0.100	0.010	09/06/11	09/14/11	
Iso THORIUM (LONG CT) DOE A-01-R MOD			**pCi/g**	**Batch # 1249210**		**Yld % 90**		**F1I060000-210B**
Thorium 228	0.024	U	0.021	0.100	0.025	09/06/11	09/14/11	
Thorium 230	0.021	U	0.020	0.100	0.023	09/06/11	09/14/11	
Thorium 232	-0.001	U	0.0020	0.100	0.018	09/06/11	09/14/11	

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F1I010435
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID / Analysis Date
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1251056		Yld % 91	F1I080000-056B
Thorium 228	0.012	U	0.023	0.100	0.041	09/08/11	09/09/11
Thorium 230	0.085		0.053	0.100	0.036	09/08/11	09/09/11
Thorium 232	-0.0020	U	0.0039	0.100	0.036	09/08/11	09/09/11
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 1251057		Yld % 83	F1I080000-057B
Uranium 234	0.058	U	0.050	0.100	0.059	09/08/11	09/09/11
Uranium 235/236	-0.0053	U	0.0076	0.100	0.057	09/08/11	09/09/11
Uranium 238	0.017	U	0.024	0.100	0.023	09/08/11	09/09/11

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1I010435
Matrix: SOLID

Parameter	Spike Amount	Result	Total Uncert. (2 σ +/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso THORIUM (LONG CT) DOE A-01-R MOD		**pCi/g**		**A-01-R MOD**			**F1I060000-210C**
Thorium 230	24.5	24.2	2.4	0.07	90	99	(77 - 122)
	Batch #:	1249210		Analysis Date:	09/14/11		
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/g**		**A-01-R MOD**			**F1I060000-211C**
Uranium 234	1.63	1.75	0.22	0.02	93	107	(74 - 139)
Uranium 238	1.70	1.72	0.22	0.02	93	102	(75 - 140)
	Batch #:	1249211		Analysis Date:	09/14/11		

NOTE (S) F1I010435

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F1I010435
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID / QC Control Limits
Iso THORIUM (LONG CT) DOE A-01-R MOD		pCi/L		A-01-R MOD			F1I080000-056C
Thorium 230	2.37	2.23	0.32	0.04	89	94	(77 - 118)
	Batch #:	1251056		Analysis Date:	09/09/11		
Iso URANIUM (LONG CT) DOE A-01-R MOD		pCi/L		A-01-R MOD			F1I080000-057C
Uranium 234	3.26	3.31	0.42	0.04	98	101	(76 - 136)
Uranium 238	3.39	3.53	0.44	0.04	98	104	(76 - 134)
	Batch #:	1251057		Analysis Date:	09/09/11		

NOTE(S):

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1I010435
Matrix: SOLID

Date Sampled: 08/31/11
Date Received: 09/01/11

Parameter	SAMPLE Result		Total Uncert. (2σ +/-)	% Yld	DUPLICATE Result	Total Uncert. (2 σ +/-)	% Yld	QC Sample ID Precision	
Iso THORIUM (LONG CT) DOE A-01-R MOD			pCi/g		A-01-R MOD			F1I010435-002	
Thorium 228	0.35		0.11	51	0.318	0.096	55	11	%RPD
Thorium 230	0.40		0.11	51	0.38	0.10	55	5	%RPD
Thorium 232	0.259		0.088	51	0.244	0.081	55	6	%RPD
	Batch #:		1249210	(Sample)	1249210	(Duplicate)			
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/g		A-01-R MOD			F1I010435-002	
Uranium 234	0.337		0.079	84	0.303	0.073	84	11	%RPD
Uranium 235/236	0.009	U	0.014	84	0.014	0.016	84	48	%RPD
Uranium 238	0.322		0.077	84	0.417	0.087	84	25	%RPD
	Batch #:		1249211	(Sample)	1249211	(Duplicate)			

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results
U Result is less than the sample detection limit.

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F1I010435
Matrix: WATER

Date Sampled: 08/31/11
Date Received: 09/01/11

Parameter	SAMPLE Result		Total Uncert. (2σ +/-)	% Yld	DUPLICATE Result		Total Uncert. (2 σ +/-)	% Yld	QC Sample ID Precision	
Iso THORIUM (LONG CT) DOE A-01-R MOD			**pCi/L**		**A-01-R MOD**				**F1I010435-001**	
Thorium 228	0.022	U	0.028	87	0.037	U	0.040	69	54	%RPD
Thorium 230	0.077		0.050	87	0.098		0.064	69	24	%RPD
Thorium 232	0.028	U	0.032	87	0.017	U	0.029	69	48	%RPD
	Batch #:		1251056 (Sample)		1251056 (Duplicate)					
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**		**A-01-R MOD**				**F1I010435-001**	
Uranium 234	0.102		0.062	78	0.093		0.063	74	9	%RPD
Uranium 235/236	0.011	U	0.021	78	0.003	U	0.027	74	110	%RPD
Uranium 238	0.082		0.054	78	0.088		0.063	74	7	%RPD
	Batch #:		1251057 (Sample)		1251057 (Duplicate)					

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results
U Result is less than the sample detection limit.

F1I010435

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R44,METS,V1

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-09-01

Project: 140415
Guterl Steel
Analytical Due Date: 2011-09-14

PO#: 697886
Report to: Karl VanKeuren
Report Due Date: 2011-09-15

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 5
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER /
1	AQUEOUS IDW			2011-08-31 / 930	ML648 WATER

SAMPLE COMMENTS:

FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
HG	O8	SW846 7470A	WATER, 7470 Mercury	19	METALS, TOTAL (Method exclusive) - Waters	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
XX	QK	SW846 8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N		
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06			
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06			
XX	2O	EML A-01-R MOD	WATER, A-01-R MOD, Iso TH (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06			

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER A
2	NON-AQUEOUS IDW			2011-08-31 / 1020	ML649 SOLID

SAMPLE COMMENTS:

HG	O9	SW846 7471A	SOLID, 7471 Mercury	70	METALS, TOTAL (Method Exclusive) - Solids	D4	DOD QSM V4.X	PROT: A	WRK LOC	06			
PB	QO	SW846 6010B	SOLID, TCLP 6010	34	TCLP(1311) -> METALS, TOTAL	D4	DOD QSM V4.X	PROT: T	WRK LOC	06			
CR	QO	SW846 6010B	SOLID, TCLP 6010	34	TCLP(1311) -> METALS, TOTAL	D4	DOD QSM V4.X	PROT: T	WRK LOC	06			

F1I010435

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: RAD.2-152

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2011-09-01

Project: 140415
Guterl Steel
Analytical Due Date: 2011-09-14

PO#: 697886
Report to: Karl VanKeuren
Report Due Date: 2011-09-15

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 5
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

BA	QO	SW846	6010B	SOLID, TCLP 6010	34	TCLP(1311) -> METALS, TOTAL	D4	DOD QSM V4.X	PROT: T	WRK LOC	06		
AS	QO	SW846	6010B	SOLID, TCLP 6010	34	TCLP(1311) -> METALS, TOTAL	D4	DOD QSM V4.X	PROT: T	WRK LOC	06		
AG	QO	SW846	6010B	SOLID, TCLP 6010	34	TCLP(1311) -> METALS, TOTAL	D4	DOD QSM V4.X	PROT: T	WRK LOC	06		
SE	QO	SW846	6010B	SOLID, TCLP 6010	34	TCLP(1311) -> METALS, TOTAL	D4	DOD QSM V4.X	PROT: T	WRK LOC	06		
XX	QL	SW846	8270C	SOLID, TCLP 8270	62	TCLP(1311) -> LIQ/LIQ, SEP FUNNEL - Acid->Base	D4	DOD QSM V4.X	PROT: T	WRK LOC	06	TIC: N	
XX	QK	SW846	8260B	SOLID, TCLP 8260	58	TCLP(1311-ZHE/filter) -> PURGE-AND-TRAP (Low Level)	D4	DOD QSM V4.X	PROT: T	WRK LOC	06	TIC: N	
XX	ZV		RAD SCREEN	SOLID, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	ZZ	NONE	NONE	SOLID, 1311 TCLP ZHE Extraction	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: T	WRK LOC	06		
XX	ZZ	NONE	NONE	SOLID, TCLP 1311 Non ZHE Extraction	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: T	WRK LOC	06		
XX	2M	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: B	WRK LOC	06		
XX	2O	EML	A-01-R MOD	SOLID, A-01-R MOD, Iso TH (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A04BMW707DD0001			2011-08-31 / 1150	ML65D	WATER

SAMPLE COMMENTS:

AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F1I010435

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guterl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc | #SMPS in LOT: 5

Date Received: 2011-09-01

Analytical Due Date: 2011-09-14

Report Due Date: 2011-09-15

Report Type: D Expanded Deliverable

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	A04BMW707DD0001 DISSOLVED			2011-08-31 / 1150	ML65F	WATER

SAMPLE COMMENTS:

SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	TRIP BLANK #7			2011-08-31 / 0	ML65G	WATER

SAMPLE COMMENTS:

XX	QK	SW846 8260B	WATER, 8260B, VOC	25	PURGE AND TRAP - 25 mL purge (Waters)	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	TIC: N

estAmerica St. Louis
'15 Rider Trail North
th City, MO 63045
ne 314.298.8566 fax 314.298.8757

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Karl Van Keuren, PG, PMP	Site Contact: Kevin Cronin	Date: 08/31/2011	COC No: 015
aw Environmental & Infrastructure, Inc.	Tel/Fax: (513) 782-4745 / (513) 782-4807	Lab Contact: Lynn Fussner	Carrier:	1 of 1 COCs
50 Section Avenue	**Analysis Turnaround Time**			Job No. 140416.09020100
ncinnati, OH 45212	Calendar (C) or Work Days (W)			
3) 782-4700 Phone	TAT if different from Below _____			SDG No.
3) 782-4807 FAX	☐ 2 weeks			
ject Name: Former Guterl Specialty Steel Corporation FUSRA	☐ 1 week			
e: Lockport, NY	☐ 2 days			
) #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Isotopic Thorium (α-spec)	Isotopic Uranium (α-spec)	Total Uranium	TAL Metals except Mercury	Anions	Alkalinity	Total Dissolved Solids	Volatile Organic Compounds (VOCs)	TCLP Volatiles	TCLP Semi-volatiles	TCLP Metals except Mercury	Mercury	Sample Specific Notes:
ueous IDW	8/31/2011	0930	Grab	GW	11		X	X	X	X				X				X	
-Aqueous IDW	8/31/2011	1020	Grab	Soil	4		X	X							X	X	X	X	
BMW707DD0001	8/31/2011	1150	Grab	GW	3	X			X	X									
Blank #7	8/31/2011	--	TB	--	1									X					

servation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1, 2, and 4

sible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

cial Instructions/QC Requirements & Comments:

	Company	Date/Time		Company	Date/Time
inquished by:	Company: Shaw E & I. Inc.	Date/Time: 8/31/11 1535	Received by:	Company: TRBoffo	Date/Time: 8/31/11 15:55
inquished by:	Company:	Date/Time:	Received by:	Company: BFLO	Date/Time: 9/31/11 16:40
inquished by:	Company:	Date/Time:	Received by:	Company: TA	Date/Time: 9/1/11 0920

TestAmerica St. Louis

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): FI1010435 TestAmerica St. Louis

CUR Form #: 1 3 2

CONDITION UPON RECEIPT FORM

Client: Shaw

Quote No: 89251

COC/RFA No: 015

Initiated By: BD Date: 9/1/11 Time: 0920

Shipping Information

Shipper: FedEx UPS DHL Courier Client Other: _____ Multiple Packages: Y N

Shipping # (s):*		Sample Temperature (s):**	
1. 4485 0258 6001	6.	1. 2	6.
2. ↓ 6102	7.	2.	7.
3.	8.	3.	8.
4.	9.	4.	9.
5.	10.	5.	10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	Y N	Are there custody seals present on the cooler?	8.	Y N	Are there custody seals present on bottles?
2.	Y N N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N N/A	Do custody seals on bottles appear to be tampered with?
3.	Y N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	Y N	Sample received with Chain of Custody?	11.	Y N N/A	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	Y N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	Y N	Sample received in proper containers?
6.	Y N	Was sample received broken?	13.	Y N N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	Y N	Is sample volume sufficient for analysis?	14.	Y N N/A	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

A04BMW707DD0001 sample bottle only has total metals for analysis. Log total uranium, per COC & LF

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 9/2/11

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004 rev13, REVISED 05/27/11 \\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin-0004 CUR.doc

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guterl Steel

Lot #: F2B010413

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

February 15, 2012

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F2B010413

This report contains the analytical results for the eight samples received under chain of custody by TestAmerica in St. Louis on February 1, 2012. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Per client requirements in the Statement of Work, dilutions were not preformed unless otherwise stated.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

The following clean-up methods for Organic analyses may have been used on samples in this data set. Specific methods employed are documented on the batch extraction logs.

Method 3600C: Cleanup
Method 3620C: Florisil Cleanup
Method 3630C: Silica Gel Cleanup
Method 3640A: Gel-Permeation Cleanup
Method 3650B: Acid-Base Partition Cleanup
Method 3660B: Sulfur Cleanup
Method 3665A: Sulfuric Acid/Permanganate Cleanup

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)

There was insufficient sample to analyze samples at requested volume of 1L and a reduced aliquot of 500mL was performed. There was also insufficient sample sent for sample F2B010413-08 to be weighed at 500mL and a reduced aliquot of 250mL was used. An LCS/LCSD was also performed.

Affected Samples:

F2B010413 (1): A04DMW710D0002 (DISSOLVED)
F2B010413 (2): A04DMW710DD0002 (DISSOLVED)
F2B010413 (3): A04DMW713D0002 (DISSOLVED)
F2B010413 (4): A04DMW708DD0002 (DISSOLVED)
F2B010413 (5): A04DMW710D0002
F2B010413 (6): A04DMW710DD0002
F2B010413 (7): A04DMW713D0002
F2B010413 (8): A04DMW708DD0002

The Uranium sample did not meet the CRDL due to a reduced sample volume. No further action is required and sample results will be reported for client review.

Affected Samples:

F2B010413 (8): A04DMW708DD0002

There were no other nonconformances or observations noted with any analysis on this lot.

METHODS SUMMARY

F2B010413

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F2B010413

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MQH68	001	A04DMW710D0002 (DISSOLVED)	01/30/12	11:00
MQH7F	002	A04DMW710DD0002 (DISSOLVED)	01/30/12	11:40
MQH7G	003	A04DMW713D0002 (DISSOLVED)	01/30/12	13:25
MQH7H	004	A04DMW708DD0002 (DISSOLVED)	01/30/12	14:50
MQH7P	005	A04DMW710D0002	01/30/12	11:00
MQH7W	006	A04DMW710DD0002	01/30/12	11:40
MQH71	007	A04DMW713D0002	01/30/12	13:25
MQH72	008	A04DMW708DD0002	01/30/12	14:50

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0002 (DISSOLVED)

TOTAL Metals

Lot-Sample #...: F2B010413-001 Matrix.....: WATER
Date Sampled...: 01/30/12 11:00 Date Received..: 02/01/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2034044						
Uranium	57.8 E	1	ug/L	SW846 6020A	02/03-02/09/12	MQH681AC
		Dilution Factor: 1		Analysis Time..: 21:15		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0002 (DISSOLVED)

TOTAL Metals

Lot-Sample #...: F2B010413-002 Matrix.....: WATER
Date Sampled...: 01/30/12 11:40 Date Received..: 02/01/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2034044						
Uranium	71.9 E	1	ug/L	SW846 6020A	02/03-02/09/12	MQH7F1AC
		Dilution Factor: 1		Analysis Time..: 21:41		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0002 (DISSOLVED)

TOTAL Metals

Lot-Sample #...: F2B010413-003 Matrix.....: WATER
Date Sampled...: 01/30/12 13:25 Date Received..: 02/01/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2034044						
Uranium	0.25 BE	1	ug/L	SW846 6020A	02/03-02/09/12	MQH7G1AC
		Dilution Factor: 1		Analysis Time..: 21:55		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0002 (DISSOLVED)

TOTAL Metals

Lot-Sample #...: F2B010413-004 Matrix.....: WATER
Date Sampled...: 01/30/12 14:50 Date Received..: 02/01/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2034044						
Uranium	22.3 E	1	ug/L	SW846 6020A	02/03-02/09/12	MQH7H1AC
		Dilution Factor: 1		Analysis Time..: 22:01		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0002

TOTAL Metals

Lot-Sample #...: F2B010413-005 Matrix.....: WATER
Date Sampled...: 01/30/12 11:00 Date Received..: 02/01/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2034044						
Uranium	59.1 E	1	ug/L	SW846 6020A	02/03-02/09/12	MQH7P1AC
		Dilution Factor: 1		Analysis Time..: 22:08		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0002

TOTAL Metals

Lot-Sample #...: F2B010413-006 Matrix.....: WATER
Date Sampled...: 01/30/12 11:40 Date Received..: 02/01/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2034044						
Uranium	71.4 E	1	ug/L	SW846 6020A	02/03-02/09/12	MQH7W1AC
		Dilution Factor: 1		Analysis Time..: 22:28		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0002

TOTAL Metals

Lot-Sample #...: F2B010413-007 Matrix.....: WATER
Date Sampled...: 01/30/12 13:25 Date Received..: 02/01/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2034044						
Uranium	1.0 E	1	ug/L	SW846 6020A	02/03-02/09/12	MQH711AC
		Dilution Factor: 1		Analysis Time..: 22:35		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0002

TOTAL Metals

Lot-Sample #...: F2B010413-008 Matrix.....: WATER
Date Sampled...: 01/30/12 14:50 Date Received..: 02/01/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2034044						
Uranium	24.7 E	1	ug/L	SW846 6020A	02/03-02/09/12	MQH721AC
		Dilution Factor: 1		Analysis Time..: 22:41		

NOTE(S):

E Matrix interference.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F2B010413 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F2B030000-044 **Prep Batch #...:** 2034044						
Uranium	ND	1	ug/L	SW846 6020A	02/03-02/09/12	MQK841AA
		Dilution Factor: 1				
		Analysis Time..: 20:49				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2B010413 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F2B030000-044 **Prep Batch #...:** 2034044					
Uranium	107	(80 - 120)	SW846 6020A	02/03-02/09/12	MQK841AC
		Dilution Factor: 1		Analysis Time..: 21:09	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2B010413 **Matrix.....:** WATER
Date Sampled...: 01/30/12 11:00 **Date Received..:** 02/01/12

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F2B010413-001 **Prep Batch #...:** 2034044							
Uranium	108	(80 - 120)			SW846 6020A	02/03-02/09/12	MQH681AE
	109	(80 - 120)	0.24	(0-20)	SW846 6020A	02/03-02/09/12	MQH681AF
		Dilution Factor: 1					
		Analysis Time..: 21:28					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0002 (DISSOLVED)

Radiochemistry

Lab Sample ID: F2B010413-001
Work Order: MQH68
Matrix: WATER

Date Collected: 01/30/12 1100
Date Received: 02/01/12 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2033010	Yld % 71
Uranium 234	17.3		1.8	0.1	0.1	02/02/12	02/04/12
Uranium 235/236	0.90		0.30	0.10	0.11	02/02/12	02/04/12
Uranium 238	17.5		1.9	0.1	0.1	02/02/12	02/04/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0002 (DISSOLVED)

Radiochemistry

Lab Sample ID: F2B010413-002
Work Order: MQH7F
Matrix: WATER

Date Collected: 01/30/12 1140
Date Received: 02/01/12 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 2033010		Yld % 76
Uranium 234	20.0		2.1	0.1	0.1	02/02/12	02/04/12
Uranium 235/236	1.17		0.34	0.10	0.06	02/02/12	02/04/12
Uranium 238	20.4		2.1	0.1	0.05	02/02/12	02/04/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0002 (DISSOLVED)

Radiochemistry

Lab Sample ID: F2B010413-003
Work Order: MQH7G
Matrix: WATER

Date Collected: 01/30/12 1325
Date Received: 02/01/12 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 2033010		Yld % 79
Uranium 234	0.19		0.12	0.10	0.08	02/02/12	02/04/12
Uranium 235/236	-0.011	U	0.016	0.100	0.12	02/02/12	02/04/12
Uranium 238	0.071		0.072	0.100	0.048	02/02/12	02/04/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0002 (DISSOLVED)

Radiochemistry

Lab Sample ID: F2B010413-004
Work Order: MQH7H
Matrix: WATER

Date Collected: 01/30/12 1450
Date Received: 02/01/12 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2033010	Yld % 83
Uranium 234	7.99		0.98	0.10	0.09	02/02/12	02/04/12
Uranium 235/236	0.49		0.20	0.10	0.05	02/02/12	02/04/12
Uranium 238	7.76		0.96	0.10	0.07	02/02/12	02/04/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0002

Radiochemistry

Lab Sample ID: F2B010413-005
Work Order: MQH7P
Matrix: WATER

Date Collected: 01/30/12 1100
Date Received: 02/01/12 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2033010	Yld % 84
Uranium 234	16.6		1.7	0.1	0.04	02/02/12	02/04/12
Uranium 235/236	0.81		0.27	0.10	0.12	02/02/12	02/04/12
Uranium 238	16.8		1.8	0.1	0.09	02/02/12	02/04/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0002

Radiochemistry

Lab Sample ID: F2B010413-006
Work Order: MQH7W
Matrix: WATER

Date Collected: 01/30/12 1140
Date Received: 02/01/12 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2033010		Yld % 81
Uranium 234	19.6		2.0	0.1	0.1	02/02/12	02/04/12
Uranium 235/236	0.93		0.28	0.10	0.05	02/02/12	02/04/12
Uranium 238	21.3		2.1	0.1	0.1	02/02/12	02/04/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0002

Radiochemistry

Lab Sample ID: F2B010413-007
Work Order: MQH71
Matrix: WATER

Date Collected: 01/30/12 1325
Date Received: 02/01/12 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2033010	Yld % 84
Uranium 234	0.32		0.15	0.10	0.09	02/02/12	02/04/12
Uranium 235/236	0.036	U	0.059	0.100	0.093	02/02/12	02/04/12
Uranium 238	0.23		0.13	0.10	0.10	02/02/12	02/04/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0002

Radiochemistry

Lab Sample ID: F2B010413-008
Work Order: MQH72
Matrix: WATER

Date Collected: 01/30/12 1450
Date Received: 02/01/12 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2033010	Yld % 87
Uranium 234	7.1		1.1	0.1	0.2	02/02/12	02/04/12
Uranium 235/236	0.29		0.22	0.10	0.21	02/02/12	02/04/12
Uranium 238	7.2		1.1	0.1	0.3	02/02/12	02/04/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F2B010413
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 2033010		Yld % 96		F2B020000-010B
Uranium 234	0.011	U	0.021	0.100	0.037		02/02/12	02/04/12
Uranium 235/236	-0.0022	U	0.0044	0.100	0.040		02/02/12	02/04/12
Uranium 238	-0.0018	U	0.0035	0.100	0.032		02/02/12	02/04/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F2B010413
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ+/-)	% Yld	% Rec	QC Control Limits	Lab Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**A-01-R MOD**				**F2B020000-010C**	
Uranium 234		3.27	3.15	0.40	96	97	(82 - 118)		
	Spk 2	3.26	3.02	0.39	100	93	(82 - 118)	4	%RPD
Uranium 238		3.39	3.53	0.44	96	104	(80 - 121)		
	Spk 2	3.39	3.16	0.40	100	93	(80 - 121)	11	%RPD
		Batch #:	2033010		**Analysis Date:**		02/04/12		

NOTE(S)

Calculations are performed before rounding to avoid round-off error in calculated results

F2B010413

CLIENT ANALYSIS SUMMARY

Storage Loc: MET,R19

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guterl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 8

Date Received: 2012-02-01

Analytical Due Date: 2012-02-15

Report Due Date: 2012-02-15

Report Type: D Expanded Deliverable

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	!
1	A04DMW710D0002 (DISSOLVED)			2012-01-30 / 1100	MQH68	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	!
2	A04DMW710DD0002 (DISSOLVE			2012-01-30 / 1140	MQH7F	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	!
3	A04DMW713D0002 (DISSOLVED)			2012-01-30 / 1325	MQH7G	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	!
4	A04DMW708DD0002 (DISSOLVE			2012-01-30 / 1450	MQH7H	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	!
5	A04DMW710D0002			2012-01-30 / 1100	MQH7P	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	!
6	A04DMW710DD0002			2012-01-30 / 1140	MQH7W	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

F2B010413

CLIENT ANALYSIS SUMMARY

Storage Loc: **MET,R19**

Project Manager: LMF Quote #: 89251 SDG:

Project: 140415 Guterl Steel

PO#: 697886 Report to: Karl VanKeuren

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 8

Date Received: 2012-02-01

Analytical Due Date: 2012-02-15

Report Due Date: 2012-02-15

Report Type: D Expanded Deliverable

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	!
7	A04DMW713D0002			2012-01-30 / 1325	MQH71	WATER

SAMPLE COMMENTS:

UX	**I&**	SW846 6020A	WATER, 6020 Total Uranium	**GJ**	METALS, TOTAL - 2% HCL	**D4**	DOD QSM V4.X	PROT: A	**WRK LOC**	06
XX	**ZV**	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	**RA**	IN-HOUSE RAD SCREEN	**01**	STANDARD TEST SET	PROT: A	**WRK LOC**	06
XX	**2M**	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	**J2**	Extraction Chromatography - Sequential Actinides	**01**	STANDARD TEST SET	PROT: C	**WRK LOC**	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	!
8	A04DMW708DD0002			2012-01-30 / 1450	MQH72	WATER

SAMPLE COMMENTS:

UX	**I&**	SW846 6020A	WATER, 6020 Total Uranium	**GJ**	METALS, TOTAL - 2% HCL	**D4**	DOD QSM V4.X	PROT: A	**WRK LOC**	06
XX	**ZV**	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	**RA**	IN-HOUSE RAD SCREEN	**01**	STANDARD TEST SET	PROT: A	**WRK LOC**	06
XX	**2M**	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	**J2**	Extraction Chromatography - Sequential Actinides	**01**	STANDARD TEST SET	PROT: C	**WRK LOC**	06

Chain of Custody Record

CUL 210

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

COC No. 016

AL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
SHAW ENVIRONMENTAL & INFRASTRUCTURE	KARL VAN KEUREN, PG, PMP		158167
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 of 1
5050 SECTION AVENUE	(513) 782-4745/(513) 782-4807		
City	**State**	**Zip Code**	**Site Contact**	**Lab Contact**
CINCINNATI	OH	45212	KEVIN CRONIN	LYNN FUSSNER
Project Name and Location (State)	**Carrier/Waybill Number**
FORMER GUTERL SPECIALTY STEEL FUSRAP	
Contract/Purchase Order/Quote No.	

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis (Attach list if more space is needed): TOTAL U	TOTAL U (FILTERED)	ISOTOPIC U	ISOTOPIC U (FILTERED)
A04DMW71LD0002	1/30/12	1130		X					X				1	X	X	X
A04DMW71UDD0002		1140		X					X				X	X	X	X
A04DMW713D0002		1325		X					X				X	X	X	X
A04DMW76BDD0002		1456		X					X				1	X	X	X

Special Instructions/ Conditions of Receipt: 2xLP 2x250P

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STAN DARD

QC Requirements (Specify)

	Relinquished By	Date	Time	Received By	Date	Time
1.		1/30/12	1635		1/30/12	1635
2.		1/31/12	1700		2/1/12	0900
3.						

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F2B010413

CUR Form #: 2 1 0

CONDITION UPON RECEIPT FORM

Client: SHAW ENVIRO

Quote No: 89251

COC/RFA No: 016

Initiated By: NVO Date: 2-1-12 Time: 0900

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: Y (N)

Shipping # (s):*				Sample Temperature (s):**			
1.	4485 0260 4060	6.		1.	AMBIENT	6.	
2.		7.		2.		7.	
3.		8.		3.		8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 2/3/12

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guterl Steel

Lot #: F2B030480

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

February 14, 2012

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F2B030480

This report contains the analytical results for the 14 samples received under chain of custody by TestAmerica in St. Louis on February 3, 2012. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.1 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received from 2-6° C. No observations or non-conformances were noted at the time of receipt.

Per client requirements in the Statement of Work, dilutions were not preformed unless otherwise stated.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

The following clean-up methods for Organic analyses may have been used on samples in this data set. Specific methods employed are documented on the batch extraction logs.

Method 3600C: Cleanup
Method 3620C: Florisil Cleanup
Method 3630C: Silica Gel Cleanup
Method 3640A: Gel-Permeation Cleanup
Method 3650B: Acid-Base Partition Cleanup
Method 3660B: Sulfur Cleanup
Method 3665A: Sulfuric Acid/Permanganate Cleanup

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)

There was insufficient sample provided to perform the analysis at the method specified amount. A reduced sample amount was prepared.

Affected Samples:
F2B030480 (1): A04BMW260002
F2B030480 (2): A04BMW707DD0002
F2B030480 (3): A04BMW605D0002
F2B030480 (5): A04BMW9006
F2B030480 (6): A04DMW604D0002
F2B030480 (7): A04DMW709DD0002
F2B030480 (8): A04BMW260002 (DISSOLVED)
F2B030480 (9): A04BMW707DD0002 (DISSOLVED)
F2B030480 (10): A04BMW605D0002 (DISSOLVED)
F2B030480 (12): A04BMW9006 (DISSOLVED)
F2B030480 (13): A04DMW604D0002 (DISSOLVED)
F2B030480 (14): A04DMW709DD0002 (DISSOLVED)

The Uranium sample did not meet the CRDL due to a reduced sample volume.

Affected Samples:
F2B030480 (3): A04BMW605D0002
F2B030480 (5): A04BMW9006
F2B030480 (10): A04BMW605D0002 (DISSOLVED)
F2B030480 (12): A04BMW9006 (DISSOLVED)

The serial dilution percent difference is not within QC limits for uranium.

Affected Samples:
F2B030480 (1): A04BMW260002
F2B030480 (2): A04BMW707DD0002
F2B030480 (3): A04BMW605D0002
F2B030480 (4): A04DMW704DD0002
F2B030480 (5): A04BMW9006
F2B030480 (6): A04DMW604D0002
F2B030480 (7): A04DMW709DD0002
F2B030480 (8): A04BMW260002 (DISSOLVED)
F2B030480 (9): A04BMW707DD0002 (DISSOLVED)
F2B030480 (10): A04BMW605D0002 (DISSOLVED)
F2B030480 (11): A04DMW704DD0002 (DISSOLVED)
F2B030480 (12): A04BMW9006 (DISSOLVED)
F2B030480 (13): A04DMW604D0002 (DISSOLVED)
F2B030480 (14): A04DMW709DD0002 (DISSOLVED)

There were no other nonconformances or observations noted with any analysis on this lot.

METHODS SUMMARY

F2B030480

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F2B030480

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MQLQ0	001	A04BMW260002	02/01/12	09:45
MQLQ6	002	A04BMW707DD0002	02/01/12	10:20
MQLQ8	003	A04BMW605D0002	02/01/12	11:30
MQLRA	004	A04DMW704DD0002	02/01/12	13:30
MQLRF	005	A04BMW9006	02/01/12	
MQLRG	006	A04DMW604D0002	02/01/12	14:55
MQLRH	007	A04DMW709DD0002	02/01/12	15:05
MQLRK	008	A04BMW260002 (DISSOLVED)	02/01/12	09:45
MQLRM	009	A04BMW707DD0002 (DISSOLVED)	02/01/12	10:20
MQLRP	010	A04BMW605D0002 (DISSOLVED)	02/01/12	11:30
MQLRQ	011	A04DMW704DD0002 (DISSOLVED)	02/01/12	13:30
MQLRT	012	A04BMW9006 (DISSOLVED)	02/01/12	
MQLRV	013	A04DMW604D0002 (DISSOLVED)	02/01/12	14:55
MQLRW	014	A04DMW709DD0002 (DISSOLVED)	02/01/12	15:05

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260002

TOTAL Metals

Lot-Sample #...: F2B030480-001 Matrix.....: WATER
Date Sampled...: 02/01/12 09:45 Date Received..: 02/03/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2037060						
Uranium	145 E	1	ug/L	SW846 6020A	02/06-02/08/12	MQLQ01AC
		Dilution Factor: 1		Analysis Time..: 02:11		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0002

TOTAL Metals

Lot-Sample #...: F2B030480-002 Matrix.....: WATER
Date Sampled...: 02/01/12 10:20 Date Received..: 02/03/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2037060						
Uranium	13.6 E	1	ug/L	SW846 6020A	02/06-02/08/12	MQLQ61AC
		Dilution Factor: 1		Analysis Time..: 02:18		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0002

TOTAL Metals

Lot-Sample #...: F2B030480-003 Matrix.....: WATER
Date Sampled...: 02/01/12 11:30 Date Received..: 02/03/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2037060						
Uranium	299 E	1	ug/L	SW846 6020A	02/06-02/08/12	MQLQ81AC
		Dilution Factor: 1		Analysis Time..: 02:38		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0002

TOTAL Metals

Lot-Sample #...: F2B030480-004 Matrix.....: WATER
Date Sampled...: 02/01/12 13:30 Date Received..: 02/03/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2037060						
Uranium	81.3 E	1	ug/L	SW846 6020A	02/06-02/08/12	MQLRA1AC
		Dilution Factor: 1		Analysis Time..: 02:44		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9006

TOTAL Metals

Lot-Sample #...: F2B030480-005 Matrix.....: WATER
Date Sampled...: 02/01/12 Date Received..: 02/03/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2037060						
Uranium	300 E	1	ug/L	SW846 6020A	02/06-02/08/12	MQLRF1AC
		Dilution Factor: 1		Analysis Time..: 03:11		

NOTE(S):

E Matrix interferenec.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604D0002

TOTAL Metals

Lot-Sample #...: F2B030480-006 Matrix.....: WATER
Date Sampled...: 02/01/12 14:55 Date Received..: 02/03/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2037060						
Uranium	76.7 E	1	ug/L	SW846 6020A	02/06-02/08/12	MQLRG1AC
		Dilution Factor: 1		Analysis Time..: 03:24		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0002

TOTAL Metals

Lot-Sample #...: F2B030480-007 Matrix.....: WATER
Date Sampled...: 02/01/12 15:05 Date Received..: 02/03/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2037060						
Uranium	88.3 E	1	ug/L	SW846 6020A	02/06-02/08/12	MQLRH1AC
		Dilution Factor: 1		Analysis Time..: 03:31		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260002 (DISSOLVED)

TOTAL Metals

Lot-Sample #...: F2B030480-008 Matrix.....: WATER
Date Sampled...: 02/01/12 09:45 Date Received..: 02/03/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2037060						
Uranium	152 E	1	ug/L	SW846 6020A	02/06-02/08/12	MQLRK1AC
		Dilution Factor: 1		Analysis Time..: 03:37		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0002 (DISSOLVED)

TOTAL Metals

Lot-Sample #...: F2B030480-009 Matrix.....: WATER
Date Sampled...: 02/01/12 10:20 Date Received..: 02/03/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2037060						
Uranium	14.1 E	1	ug/L	SW846 6020A	02/06-02/08/12	MQLRM1AC
		Dilution Factor: 1		Analysis Time..: 03:57		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0002 (DISSOLVED)

TOTAL Metals

Lot-Sample #...: F2B030480-010 Matrix.....: WATER
Date Sampled...: 02/01/12 11:30 Date Received..: 02/03/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2037060						
Uranium	302 E	1	ug/L	SW846 6020A	02/06-02/08/12	MQLRP1AC
		Dilution Factor: 1		Analysis Time..: 04:04		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0002 (DISSOLVED)

TOTAL Metals

Lot-Sample #...: F2B030480-011 Matrix.....: WATER
Date Sampled...: 02/01/12 13:30 Date Received..: 02/03/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2037060						
Uranium	80.2 E	1	ug/L	SW846 6020A	02/06-02/08/12	MQLRQ1AC
		Dilution Factor: 1		Analysis Time..: 04:11		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9006 (DISSOLVED)

TOTAL Metals

Lot-Sample #...: F2B030480-012 Matrix.....: WATER
Date Sampled...: 02/01/12 Date Received..: 02/03/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2037060						
Uranium	304 E	1	ug/L	SW846 6020A	02/06-02/08/12	MQLRT1AC
		Dilution Factor: 1		Analysis Time..: 04:30		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604D0002 (DISSOLVED)

TOTAL Metals

Lot-Sample #...: F2B030480-013 Matrix.....: WATER
Date Sampled...: 02/01/12 14:55 Date Received..: 02/03/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2037060						
Uranium	76.4 E	1	ug/L	SW846 6020A	02/06-02/08/12	MQLRV1AC
		Dilution Factor: 1		Analysis Time..: 04:37		

NOTE(S):

E Matrix interference.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0002 (DISSOLVED)

TOTAL Metals

Lot-Sample #...: F2B030480-014 Matrix.....: WATER
Date Sampled...: 02/01/12 15:05 Date Received..: 02/03/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2037060						
Uranium	88.5 E	1	ug/L	SW846 6020A	02/06-02/08/12	MQLRW1AC
		Dilution Factor: 1		Analysis Time..: 04:44		

NOTE(S):

E Matrix interference.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F2B030480 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F2B060000-060 **Prep Batch #...:** 2037060						
Uranium	ND	1	ug/L	SW846 6020A	02/06-02/08/12	MQL991AA
		Dilution Factor: 1				
		Analysis Time..: 01:58				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2B030480 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F2B060000-060 **Prep Batch #...:** 2037060					
Uranium	103	(80 - 120)	SW846 6020A	02/06-02/08/12	MQL991AC
		Dilution Factor: 1		Analysis Time..: 02:05	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2B030480 **Matrix.....:** WATER
Date Sampled...: 02/01/12 13:30 **Date Received..:** 02/03/12

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F2B030480-004 **Prep Batch #...:** 2037060							
Uranium	108	(80 - 120)			SW846 6020A	02/06-02/08/12	MQLRA1AE
	120	(80 - 120)	9.6	(0-20)	SW846 6020A	02/06-02/08/12	MQLRA1AF
		Dilution Factor: 1					
		Analysis Time..: 02:58					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2B030480 **Matrix.....:** WATER
Date Sampled...: 02/01/12 13:30 **Date Received..:** 02/03/12

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F2B030480-011 **Prep Batch #...:** 2037060							
Uranium	112	(80 - 120)			SW846 6020A	02/06-02/08/12	MQLRQ1AE
	111	(80 - 120)	0.30	(0-20)	SW846 6020A	02/06-02/08/12	MQLRQ1AF
		Dilution Factor: 1					
		Analysis Time..: 04:17					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260002

Radiochemistry

Lab Sample ID: F2B030480-001
Work Order: MQLQ0
Matrix: WATER

Date Collected: 02/01/12 0945
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2038119	Yld % 77
Uranium 234	39.7		3.7	0.1	0.1	02/07/12	02/09/12
Uranium 235/236	1.62		0.41	0.10	0.06	02/07/12	02/09/12
Uranium 238	38.3		3.6	0.1	0.05	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0002

Radiochemistry

Lab Sample ID: F2B030480-002
Work Order: MQLQ6
Matrix: WATER

Date Collected: 02/01/12 1020
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2038119	Yld % 83
Uranium 234	7.76		0.98	0.10	0.08	02/07/12	02/09/12
Uranium 235/236	0.14		0.11	0.10	0.11	02/07/12	02/09/12
Uranium 238	5.14		0.73	0.10	0.05	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0002

Radiochemistry

Lab Sample ID: F2B030480-003
Work Order: MQLQ8
Matrix: WATER

Date Collected: 02/01/12 1130
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2038119	Yld % 50
Uranium 234	87.3		7.9	0.1	0.2	02/07/12	02/09/12
Uranium 235/236	3.59		0.75	0.10	0.09	02/07/12	02/09/12
Uranium 238	91.0		8.3	0.1	0.1	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0002

Radiochemistry

Lab Sample ID: F2B030480-004
Work Order: MQLRA
Matrix: WATER

Date Collected: 02/01/12 1330
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2038119	Yld % 60
Uranium 234	29.8		2.8	0.1	0.03	02/07/12	02/09/12
Uranium 235/236	1.20		0.28	0.10	0.08	02/07/12	02/09/12
Uranium 238	23.8		2.3	0.1	0.07	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0002 DUP

Radiochemistry

Lab Sample ID: F2B030480-004X
Work Order: MQLRA
Matrix: WATER

Date Collected: 02/01/12 1330
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2038119	Yld % 67
Uranium 234	25.9		2.4	0.1	0.07	02/07/12	02/09/12
Uranium 235/236	1.26		0.27	0.10	0.03	02/07/12	02/09/12
Uranium 238	21.5		2.0	0.1	0.09	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9006

Radiochemistry

Lab Sample ID: F2B030480-005
Work Order: MQLRF
Matrix: WATER

Date Collected: 02/01/12 0000
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 2038119		Yld % 45
Uranium 234	101		9.2	0.1	0.2	02/07/12	02/09/12
Uranium 235/236	5.3		1.0	0.1	0.2	02/07/12	02/09/12
Uranium 238	99.8		9.1	0.1	0.2	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604D0002

Radiochemistry

Lab Sample ID: F2B030480-006
Work Order: MQLRG
Matrix: WATER

Date Collected: 02/01/12 1455
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 2038119		Yld % 82
Uranium 234	23.1		2.3	0.1	0.1	02/07/12	02/09/12
Uranium 235/236	1.05		0.31	0.10	0.11	02/07/12	02/09/12
Uranium 238	21.9		2.2	0.1	0.1	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604D0002 (DISSOLVED)

Radiochemistry

Lab Sample ID: F2B030480-013
Work Order: MQLRV
Matrix: WATER

Date Collected: 02/01/12 1455
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2038127	Yld % 80
Uranium 234	22.0		2.2	0.1	0.05	02/07/12	02/09/12
Uranium 235/236	1.28		0.35	0.10	0.06	02/07/12	02/09/12
Uranium 238	23.1		2.3	0.1	0.05	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0002

Radiochemistry

Lab Sample ID: F2B030480-007
Work Order: MQLRH
Matrix: WATER

Date Collected: 02/01/12 1505
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2038119	Yld % 79
Uranium 234	25.5		2.5	0.1	0.09	02/07/12	02/09/12
Uranium 235/236	1.48		0.38	0.10	0.1	02/07/12	02/09/12
Uranium 238	26.3		2.6	0.1	0.08	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260002 (DISSOLVED)

Radiochemistry

Lab Sample ID: F2B030480-008
Work Order: MQLRK
Matrix: WATER

Date Collected: 02/01/12 0945
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2038119	Yld % 70
Uranium 234	48.4		4.5	0.1	0.1	02/07/12	02/09/12
Uranium 235/236	2.10		0.49	0.10	0.12	02/07/12	02/09/12
Uranium 238	48.4		4.5	0.1	0.1	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0002 (DISSOLVED)

Radiochemistry

Lab Sample ID: F2B030480-009
Work Order: MQLRM
Matrix: WATER

Date Collected: 02/01/12 1020
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2038119	Yld % 83
Uranium 234	14.5		1.6	0.1	0.1	02/07/12	02/09/12
Uranium 235/236	0.23		0.14	0.10	0.06	02/07/12	02/09/12
Uranium 238	4.32		0.65	0.10	0.12	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0002 (DISSOLVED)

Radiochemistry

Lab Sample ID: F2B030480-010
Work Order: MQLRP
Matrix: WATER

Date Collected: 02/01/12 1130
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 2038119		Yld % 46
Uranium 234	92.9		8.5	0.1	0.3	02/07/12	02/09/12
Uranium 235/236	3.99		0.84	0.10	0.24	02/07/12	02/09/12
Uranium 238	91.2		8.3	0.1	0.2	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0002 (DISSOLVED)

Radiochemistry

Lab Sample ID: F2B030480-011
Work Order: MQLRQ
Matrix: WATER

Date Collected: 02/01/12 1330
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 2038127		Yld % 67
Uranium 234	26.3		2.5	0.1	0.08	02/07/12	02/09/12
Uranium 235/236	1.15		0.27	0.10	0.04	02/07/12	02/09/12
Uranium 238	22.6		2.1	0.1	0.06	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW704DD0002 (DISSOLVED) DUP

Radiochemistry

Lab Sample ID: F2B030480-011X
Work Order: MQLRQ
Matrix: WATER

Date Collected: 02/01/12 1330
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2038127	Yld % 59
Uranium 234	30.0		2.8	0.1	0.09	02/07/12	02/09/12
Uranium 235/236	1.26		0.29	0.10	0.08	02/07/12	02/09/12
Uranium 238	24.1		2.3	0.1	0.08	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW9006 (DISSOLVED)

Radiochemistry

Lab Sample ID: F2B030480-012
Work Order: MQLRT
Matrix: WATER

Date Collected: 02/01/12 0000
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2038127	Yld % 46
Uranium 234	90.6		8.3	0.1	0.2	02/07/12	02/09/12
Uranium 235/236	4.67		0.91	0.10	0.1	02/07/12	02/09/12
Uranium 238	90.6		8.3	0.1	0.08	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0002 (DISSOLVED)

Radiochemistry

Lab Sample ID: F2B030480-014
Work Order: MQLRW
Matrix: WATER

Date Collected: 02/01/12 1505
Date Received: 02/03/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2038127	Yld % 76
Uranium 234	27.5		2.7	0.1	0.1	02/07/12	02/09/12
Uranium 235/236	1.01		0.31	0.10	0.10	02/07/12	02/09/12
Uranium 238	25.5		2.5	0.1	0.1	02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F2B030480
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 2038119		Yld % 99		F2B070000-119B
Uranium 234	0.011	U	0.021	0.100	0.038		02/07/12	02/09/12
Uranium 235/236	0.009	U	0.018	0.100	0.024		02/07/12	02/09/12
Uranium 238	0.007	U	0.014	0.100	0.019		02/07/12	02/09/12
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 2038127		Yld % 95		F2B070000-127B
Uranium 234	0.037		0.033	0.100	0.020		02/07/12	02/09/12
Uranium 235/236	0.009	U	0.018	0.100	0.025		02/07/12	02/09/12
Uranium 238	0.007	U	0.015	0.100	0.020		02/07/12	02/09/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F2B030480
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F2B070000-119C**
Uranium 234	3.27	3.28	0.42	0.04	87	100	(82 - 118)
Uranium 238	3.39	3.52	0.45	0.04	87	104	(80 - 121)
	Batch #:	2038119		Analysis Date:	02/09/12		
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F2B070000-127C**
Uranium 234	3.27	3.04	0.39	0.03	92	93	(82 - 118)
Uranium 238	3.39	3.28	0.41	0.03	92	97	(80 - 121)
	Batch #:	2038127		Analysis Date:	02/09/12		

NOTE(S)

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F2B030480
Matrix: WATER

Date Sampled: 02/01/12
Date Received: 02/03/12

Parameter	SAMPLE Result	Total Uncert. (2σ +/-)	% Yld	DUPLICATE Result	Total Uncert. (2 σ +/-)	% Yld	QC Sample ID Precision	
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F2B030480-004**	
Uranium 234	29.8	2.8	60	25.9	2.4	67	14	%RPD
Uranium 235/236	1.20	0.28	60	1.26	0.27	67	4	%RPD
Uranium 238	23.8	2.3	60	21.5	2.0	67	10	%RPD
	Batch #:	2038119 (Sample)		2038119 (Duplicate)				
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F2B030480-011**	
Uranium 234	26.3	2.5	67	30.0	2.8	59	13	%RPD
Uranium 235/236	1.15	0.27	67	1.26	0.29	59	9	%RPD
Uranium 238	22.6	2.1	67	24.1	2.3	59	7	%RPD
	Batch #:	2038127 (Sample)		2038127 (Duplicate)				

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

TestAmerica St. Louis

F2B030480

CLIENT ANALYSIS SUMMARY

Storage Loc: METS,R30/31

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guterl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 14

Date Received: 2012-02-03

Analytical Due Date: 2012-02-14

Report Due Date: 2012-02-15

Report Type: D Expanded Deliverable

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
1	A04BMW260002			2012-02-01 / 945	MQLQ0	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
2	A04BMW707DD0002			2012-02-01 / 1020	MQLQ6	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
3	A04BMW605D0002			2012-02-01 / 1130	MQLQ8	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
4	A04DMW704DD0002			2012-02-01 / 1330	MQLRA	WATER

SAMPLE COMMENTS:

	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
D	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
S	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
X	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
5	A04BMW90006			2012-02-01 / 0	MQLRF	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
6	A04DMW604D0002			2012-02-01 / 1455	MQLRG	WATER

SAMPLE COMMENTS:

F2B030480

CLIENT ANALYSIS SUMMARY

Storage Loc: METS,R30/31

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guterl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 14

Date Received: 2012-02-03

Analytical Due Date: 2012-02-14

Report Due Date: 2012-02-15

Report Type: D Expanded Deliverable

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	A04DMW709DD0002			2012-02-01 / 1505	MQLRH	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	A04BMW260002 (DISSOLVED)			2012-02-01 / 945	MQLRK	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	A04BMW707DD0002 (DISSOLVE			2012-02-01 / 1020	MQLRM	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
10	A04BMW605D0002 (DISSOLVED)			2012-02-01 / 1130	MQLRP	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
11	A04DMW704DD0002 (DISSOLVE			2012-02-01 / 1330	MQLRQ	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
D	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
S	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
X	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

F2B030480

CLIENT ANALYSIS SUMMARY

Storage Loc: METS,R30/31

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2012-02-03

Project: 140415
Guteri Steel
Analytical Due Date: 2012-02-14

PO#: 697886
Report to: Karl VanKeuren
Report Due Date: 2012-02-15

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 14
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
12	A04BMW90006 (DISSOLVED)			2012-02-01 / 0	MQLRT	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
13	A04DMW604D0002 (DISSOLVED)			2012-02-01 / 1455	MQLRV	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
14	A04DMW709DD0002 (DISSOLVE			2012-02-01 / 1505	MQLRW	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

Chain of Custody Record

CUR 259

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

COC No. 017

AL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
SHAW ENVIRONMENTAL & INFRASTRUCTURE	KARL VAN KLOREN PG, PMP		158168
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page**
5050 SECTION AVENUE	(513) 782-4745/(513) 782-4807		Page 1 of 1
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
CINCINNATI / OH / 45212	KEVIN CROWN	LYNN FUSSNER	
Project Name and Location (State)	**Carrier/Waybill Number**		
FORMER GUTERL SPECIALTY STEEL FUSRAP			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis (Attach list if more space is needed): TOTAL U	TOTAL U (FILTERED)	ISOTOPIC U	ISOTOPIC U (FILTERED)	Special Instructions/ Conditions of Receipt
~~MW-26~~ AC4BMW26 0002	02/01/12	0945		X					X				X	X	X	X	1XLP 3X250P
AC4BMW7C 7DD 0002		1020		X					X				X	X	X	X	
AC4BMW6C5D 0002		1130		X					X				X	X	X	X	
AC4DMW704DD 0002		1330		X					X				X	X	X	X	6XLP 6X250P
AC4DMW704DD 0002 MS		1330		X					X				X	X	X	X	
AC4DMW704DD 0002 MSD		1330		X					X				X	X	X	X	
AC4BMW9006		—		X					X				X	X	X	X	2XLP 2X250P
AC4DMW604D 0002		1425		X					X				X	X	X	X	
AC4DMW709DD 0002		1505		X					X				X	X	X	X	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STANDARD

QC Requirements (Specify)

	Relinquished By	Date	Time	Received By	Date	Time
1.		2/1/12	1510		2-1-12	1510
2.		2-1-12	1630		2-1-12	1630
3.		2-2-12	1705		2/3/12	09

Comments: 7.0, 8.0 #3 NO H

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica St. Louis

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F2B030480 TestAmerica St. Louis

CUR Form #: 2 5 9

CONDITION UPON RECEIPT FORM

Client: SHAW ENVIRO

Quote No: 89251

COC/RFA No: 017

Initiated By: NVD Date: 02/03/12 Time: 0920

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*		Sample Temperature (s):**	
1. 4485 0260 4151	6.	1. AMBIENT	6.
2. 4485 0260 4162	7.	2. AMBIENT	7.
3.	8.	3.	8.
4.	9.	4.	9.
5.	10.	5.	10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample reeeived in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 2/6/12

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guterl Steel

Lot #: F2E080406

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

May 22, 2012

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F2E080406

This report contains the analytical results for the 22 samples received under chain of custody by TestAmerica in St. Louis on May 7, 2012. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.2 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
The coolers were received at ambient temperature. No observations or non-conformances were noted at the time of receipt.

Per client requirements in the Statement of Work, dilutions were not preformed unless otherwise stated.

Manual Integration:
Manual integration may have been preformed for certain analysis and/or samples. Raw sample data can be supplied upon request detailing the manual integration and reasons why.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

The following clean-up methods for Organic analyses may have been used on samples in this data set. Specific methods employed are documented on the batch extraction logs.

Method 3600C: Cleanup
Method 3620C: Florisil Cleanup
Method 3630C: Silica Gel Cleanup
Method 3640A: Gel-Permeation Cleanup
Method 3650B: Acid-Base Partition Cleanup
Method 3660B: Sulfur Cleanup
Method 3665A: Sulfuric Acid/Permanganate Cleanup

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)

Batch: 2130026
There was insufficient sample to perform the analysis at 1000mL. The sample aliquots were reduced to 500mL.
Affected Samples:
F2E080406 (1): A04DMW710D0003
F2E080406 (2): A04DMW710DD0003
F2E080406 (3): A04DMW713D0003
F2E080406 (4): A04DMW708DD0003
F2E080406 (5): DUP-01
F2E080406 (6): A04BMW605D0003
F2E080406 (7): A04BMW704DD0003
F2E080406 (8): A04BMW707DD0003
F2E080406 (9): A04BMW260003
F2E080406 (10): A04DMW604D0003
F2E080406 (11): A04DMW709DD0003
F2E080406 (12): A04DMW710D0003
F2E080406 (13): A04DMW710DD0003
F2E080406 (14): A04DMW713D0003
F2E080406 (15): A04DMW708DD0003
F2E080406 (16): DUP-01
F2E080406 (17): A04BMW605D0003

Batch: 2130026
The associated Uranium samples did not meet the client requested reporting limit due to the presence of the nuclide in the sample and the reduced sample volume.
Affected Samples:
F2E080406 (5): DUP-01
F2E080406 (6): A04BMW605D0003
F2E080406 (9): A04BMW260003
F2E080406 (16): DUP-01
F2E080406 (17): A04BMW605D0003

Batch: 2130027
There was insufficient sample to perform the analysis at 1000mL. The sample aliquots were reduced to 500mL. The reduction in sample size had no effect on the sample results.
Affected Samples:
F2E080406 (18): A04BMW704DD0003
F2E080406 (19): A04BMW707DD0003
F2E080406 (20): A04BMW260003
F2E080406 (21): A04DMW604D0003
F2E080406 (22): A04DMW709DD0003

There were no other nonconformances or observations noted with any analysis on this lot.

METHODS SUMMARY

F2E080406

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F2E080406

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MTE67	001	A04DMW710D0003	05/03/12	09:35
MTE7N	002	A04DMW710DD0003	05/03/12	10:35
MTE7P	003	A04DMW713D0003	05/03/12	11:45
MTE7Q	004	A04DMW708DD0003	05/03/12	14:00
MTE7R	005	DUP-01	05/03/12	
MTE7T	006	A04BMW605D0003	05/03/12	15:15
MTE7V	007	A04BMW704DD0003	05/03/12	16:05
MTE7X	008	A04BMW707DD0003	05/04/12	08:40
MTE70	009	A04BMW260003	05/04/12	09:35
MTE71	010	A04DMW604D0003	05/04/12	10:40
MTE72	011	A04DMW709DD0003	05/04/12	11:30
MTE8C	012	A04DMW710D0003	05/04/12	09:35
MTE8G	013	A04DMW710DD0003	05/04/12	10:35
MTE8J	014	A04DMW713D0003	05/04/12	11:45
MTE8K	015	A04DMW708DD0003	05/04/12	14:00
MTE8M	016	DUP-01	05/04/12	
MTE8P	017	A04BMW605D0003	05/04/12	15:15
MTE8R	018	A04BMW704DD0003	05/04/12	16:05
MTE8V	019	A04BMW707DD0003	05/04/12	08:40
MTE80	020	A04BMW260003	05/04/12	09:35
MTE81	021	A04DMW604D0003	05/04/12	10:40
MTE82	022	A04DMW709DD0003	05/04/12	11:30

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0003

TOTAL Metals

Lot-Sample #...: F2E080406-001 Matrix.....: WATER
Date Sampled...: 05/03/12 09:35 Date Received..: 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131079						
Uranium	52.5	1	ug/L	SW846 6020A	05/10-05/15/12	MTE671AC
		Dilution Factor: 1		Analysis Time..: 22:54		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0003

TOTAL Metals

Lot-Sample #...: F2E080406-002 **Matrix.....:** WATER
Date Sampled...: 05/03/12 10:35 **Date Received..:** 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131079						
Uranium	**59.1**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/15/12**	**MTE7N1AC**
		Dilution Factor: 1		Analysis Time..: 23:01		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0003

TOTAL Metals

Lot-Sample #...: F2E080406-003 Matrix.....: WATER
Date Sampled...: 05/03/12 11:45 Date Received..: 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131079						
Uranium	0.33 J	1	ug/L	SW846 6020A	05/10-05/15/12	MTE7P1AC
		Dilution Factor: 1		Analysis Time..: 23:07		

NOTE(S):

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0003

TOTAL Metals

Lot-Sample #...: F2E080406-004 **Matrix.....:** WATER
Date Sampled...: 05/03/12 14:00 **Date Received..:** 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131079						
Uranium	**18.0**	1	**ug/L**	**SW846 6020A**	**05/10-05/15/12**	**MTE7Q1AC**
		Dilution Factor: 1		Analysis Time..: 23:14		

Shaw Environmental & Infrastructure Inc

Client Sample ID: DUP-01

TOTAL Metals

Lot-Sample #...: F2E080406-005 Matrix.....: WATER
Date Sampled...: 05/03/12 Date Received..: 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131079						
Uranium	266	1	ug/L	SW846 6020A	05/10-05/15/12	MTE7R1AC
		Dilution Factor: 1		Analysis Time..: 23:21		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0003

TOTAL Metals

Lot-Sample #...: F2E080406-006 Matrix.....: WATER
Date Sampled...: 05/03/12 15:15 Date Received..: 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131079						
Uranium	265	1	ug/L	SW846 6020A	05/10-05/15/12	MTE7T1AC
		Dilution Factor: 1		Analysis Time..: 23:28		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW704DD0003

TOTAL Metals

Lot-Sample #...: F2E080406-007 Matrix.....: WATER
Date Sampled...: 05/03/12 16:05 Date Received..: 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131079						
Uranium	67.0	1	ug/L	SW846 6020A	05/10-05/15/12	MTE7V1AC
		Dilution Factor: 1		Analysis Time..: 23:34		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0003

TOTAL Metals

Lot-Sample #...: F2E080406-008 Matrix.....: WATER
Date Sampled...: 05/04/12 08:40 Date Received..: 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131079						
Uranium	10.8	1	ug/L	SW846 6020A	05/10-05/15/12	MTE7X1AC
		Dilution Factor: 1		Analysis Time..: 23:41		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260003

TOTAL Metals

Lot-Sample #...: F2E080406-009 **Matrix.....:** WATER
Date Sampled...: 05/04/12 09:35 **Date Received..:** 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131079						
Uranium	145	1	ug/L	SW846 6020A	05/10-05/16/12	MTE701AC
		Dilution Factor: 1		Analysis Time..: 00:01		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604D0003

TOTAL Metals

Lot-Sample #...: F2E080406-010 **Matrix.....:** WATER
Date Sampled...: 05/04/12 10:40 **Date Received..:** 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131079						
Uranium	**86.5**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTE711AC**
		Dilution Factor: 1		Analysis Time..: 00:08		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0003

TOTAL Metals

Lot-Sample #...: F2E080406-011 Matrix.....: WATER
Date Sampled...: 05/04/12 11:30 Date Received..: 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131079						
Uranium	80.0	1	ug/L	SW846 6020A	05/10-05/16/12	MTE721AC
		Dilution Factor: 1		Analysis Time..: 00:41		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0003

TOTAL Metals

Lot-Sample #...: F2E080406-012 **Matrix.....:** WATER
Date Sampled...: 05/04/12 09:35 **Date Received..:** 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131079						
Uranium	**49.5**	1	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTE8C1AA**
		Dilution Factor: 1		Analysis Time..: 00:48		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0003

TOTAL Metals

Lot-Sample #...: F2E080406-013 **Matrix.....:** WATER
Date Sampled...: 05/04/12 10:35 **Date Received..:** 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131079						
Uranium	**56.6**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTE8G1AC**
		Dilution Factor: 1		Analysis Time..: 00:55		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0003

TOTAL Metals

Lot-Sample #...: F2E080406-014 **Matrix.....:** WATER
Date Sampled...: 05/04/12 11:45 **Date Received..:** 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131079						
Uranium	ND	1	ug/L	SW846 6020A	05/10-05/16/12	MTE8J1AC
		Dilution Factor: 1		Analysis Time..: 01:01		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0003

TOTAL Metals

Lot-Sample #...: F2E080406-015 **Matrix.....:** WATER
Date Sampled...: 05/04/12 14:00 **Date Received..:** 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131079						
Uranium	**18.3**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTE8K1AC**
		Dilution Factor: 1		Analysis Time..: 01:22		

Shaw Environmental & Infrastructure Inc

Client Sample ID: DUP-01

TOTAL Metals

Lot-Sample #...: F2E080406-016 **Matrix.....:** WATER
Date Sampled...: 05/04/12 **Date Received..:** 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131080						
Uranium	**262**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTE8M1AC**
		Dilution Factor: 1		Analysis Time..: 01:42		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0003

TOTAL Metals

Lot-Sample #...: F2E080406-017 **Matrix.....:** WATER
Date Sampled...: 05/04/12 15:15 **Date Received..:** 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131080						
Uranium	**256**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTE8P1AC**
		Dilution Factor: 1		Analysis Time..: 01:48		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW704DD0003

TOTAL Metals

Lot-Sample #...: F2E080406-018 **Matrix.....:** WATER
Date Sampled...: 05/04/12 16:05 **Date Received..:** 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131080						
Uranium	**65.8**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTE8R1AC**
		Dilution Factor: 1		Analysis Time..: 01:55		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0003

TOTAL Metals

Lot-Sample #...: F2E080406-019 **Matrix.....:** WATER
Date Sampled...: 05/04/12 08:40 **Date Received..:** 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131080						
Uranium	**10.6**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTE8V1AC**
		Dilution Factor: 1		Analysis Time..: 02:02		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260003

TOTAL Metals

Lot-Sample #...: F2E080406-020 **Matrix.....:** WATER
Date Sampled...: 05/04/12 09:35 **Date Received..:** 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131080						
Uranium	**139**	1	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTE801AC**
		Dilution Factor: 1		Analysis Time..: 02:09		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604D0003

TOTAL Metals

Lot-Sample #...: F2E080406-021 **Matrix.....:** WATER
Date Sampled...: 05/04/12 10:40 **Date Received..:** 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131080						
Uranium	**76.4**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTE811AC**
		Dilution Factor: 1		Analysis Time..: 02:15		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0003

TOTAL Metals

Lot-Sample #...: F2E080406-022 **Matrix.....:** WATER
Date Sampled...: 05/04/12 11:30 **Date Received..:** 05/07/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131080						
Uranium	**80.4**	1	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTE821AC**
		Dilution Factor: 1		Analysis Time..: 03:02		

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F2E080406 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F2E100000-079 **Prep Batch #...:** 2131079						
Uranium	ND	1	ug/L	SW846 6020A	05/10-05/15/12	MTG1J1AA
		Dilution Factor: 1				
		Analysis Time..: 22:41				
MB Lot-Sample #: F2E100000-080 **Prep Batch #...:** 2131080						
Uranium	ND	1	ug/L	SW846 6020A	05/10-05/16/12	MTG1N1AA
		Dilution Factor: 1				
		Analysis Time..: 01:28				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2E080406 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F2E100000-079 **Prep Batch #...:** 2131079					
Uranium	95	(80 - 120)	SW846 6020A	05/10-05/15/12	MTG1J1AC
		Dilution Factor: 1	Analysis Time..: 22:48		
LCS Lot-Sample#: F2E100000-080 **Prep Batch #...:** 2131080					
Uranium	92	(80 - 120)	SW846 6020A	05/10-05/16/12	MTG1N1AC
		Dilution Factor: 1	Analysis Time..: 01:35		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2E080406 **Matrix.....:** WATER
Date Sampled...: 05/04/12 10:40 **Date Received..:** 05/07/12

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F2E080406-010 **Prep Batch #...:** 2131079							
Uranium	96	(80 - 120)			SW846 6020A	05/10-05/16/12	MTE711AE
	97	(80 - 120)	0.38	(0-20)	SW846 6020A	05/10-05/16/12	MTE711AF
		Dilution Factor: 1					
		Analysis Time..: 00:21					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2E080406 **Matrix.....:** WATER
Date Sampled...: 05/04/12 10:40 **Date Received..:** 05/07/12

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F2E080406-021 **Prep Batch #...:** 2131080							
Uranium	94	(80 - 120)			SW846 6020A	05/10-05/16/12	MTE811AE
	98	(80 - 120)	3.5	(0-20)	SW846 6020A	05/10-05/16/12	MTE811AF
		Dilution Factor: 1					
		Analysis Time..: 02:42					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0003

Radiochemistry

Lab Sample ID: F2E080406-001
Work Order: MTE67
Matrix: WATER

Date Collected: 05/03/12 0935
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2130026		Yld % 85
Uranium 234	18.3		1.9	0.1	0.07	05/09/12	05/14/12
Uranium 235/236	0.99		0.29	0.10	0.05	05/09/12	05/14/12
Uranium 238	17.6		1.8	0.1	0.04	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0003

Radiochemistry

Lab Sample ID: F2E080406-002
Work Order: MTE7N
Matrix: WATER

Date Collected: 05/03/12 1035
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2130026	Yld % 75
Uranium 234	21.7		2.2	0.1	0.1	05/09/12	05/14/12
Uranium 235/236	0.96		0.30	0.10	0.06	05/09/12	05/14/12
Uranium 238	22.1		2.2	0.1	0.09	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0003

Radiochemistry

Lab Sample ID: F2E080406-003
Work Order: MTE7P
Matrix: WATER

Date Collected: 05/03/12 1145
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2130026	Yld % 82
Uranium 234	0.081		0.073	0.100	0.044	05/09/12	05/14/12
Uranium 235/236	0.056	U	0.071	0.100	0.092	05/09/12	05/14/12
Uranium 238	0.122		0.093	0.100	0.086	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0003

Radiochemistry

Lab Sample ID: F2E080406-004
Work Order: MTE7Q
Matrix: WATER

Date Collected: 05/03/12 1400
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2130026	Yld % 84
Uranium 234	6.97		0.89	0.10	0.10	05/09/12	05/14/12
Uranium 235/236	0.20		0.13	0.10	0.05	05/09/12	05/14/12
Uranium 238	6.72		0.87	0.10	0.09	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: DUP-01

Radiochemistry

Lab Sample ID: F2E080406-005
Work Order: MTE7R
Matrix: WATER

Date Collected: 05/03/12 0000
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2130026	Yld % 46
Uranium 234	87.9		8.0	0.1	0.2	05/09/12	05/14/12
Uranium 235/236	4.51		0.88	0.10	0.1	05/09/12	05/14/12
Uranium 238	89.5		8.2	0.1	0.2	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0003

Radiochemistry

Lab Sample ID: F2E080406-006
Work Order: MTE7T
Matrix: WATER

Date Collected: 05/03/12 1515
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 2130026		Yld % 49
Uranium 234	86.2		7.9	0.1	0.2	05/09/12	05/14/12
Uranium 235/236	4.09		0.84	0.10	0.19	05/09/12	05/14/12
Uranium 238	87.8		8.0	0.1	0.2	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW704DD0003

Radiochemistry

Lab Sample ID: F2E080406-007
Work Order: MTE7V
Matrix: WATER

Date Collected: 05/03/12 1605
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 2130026		Yld % 88
Uranium 234	25.3		2.5	0.1	0.1	05/09/12	05/14/12
Uranium 235/236	0.99		0.29	0.10	0.05	05/09/12	05/14/12
Uranium 238	20.4		2.0	0.1	0.04	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0003

Radiochemistry

Lab Sample ID: F2E080406-008
Work Order: MTE7X
Matrix: WATER

Date Collected: 05/04/12 0840
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2130026		Yld % 76
Uranium 234	12.8		1.4	0.1	0.1	05/09/12	05/14/12
Uranium 235/236	0.28		0.16	0.10	0.1	05/09/12	05/14/12
Uranium 238	3.54		0.58	0.10	0.11	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260003

Radiochemistry

Lab Sample ID: F2E080406-009
Work Order: MTE70
Matrix: WATER

Date Collected: 05/04/12 0935
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2130026		Yld % 66
Uranium 234	52.7		4.9	0.1	0.1	05/09/12	05/14/12
Uranium 235/236	2.36		0.54	0.10	0.16	05/09/12	05/14/12
Uranium 238	54.4		5.1	0.1	0.1	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604D0003

Radiochemistry

Lab Sample ID: F2E080406-010
Work Order: MTE71
Matrix: WATER

Date Collected: 05/04/12 1040
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 2130026		Yld % 75
Uranium 234	29.2		2.9	0.1	0.1	05/09/12	05/14/12
Uranium 235/236	1.28		0.36	0.10	0.06	05/09/12	05/14/12
Uranium 238	28.8		2.8	0.1	0.1	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0003

Radiochemistry

Lab Sample ID: F2E080406-011
Work Order: MTE72
Matrix: WATER

Date Collected: 05/04/12 1130
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2130026	Yld % 75
Uranium 234	27.7		2.7	0.1	0.09	05/09/12	05/14/12
Uranium 235/236	1.05		0.32	0.10	0.06	05/09/12	05/14/12
Uranium 238	28.7		2.8	0.1	0.09	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0003

Radiochemistry

Lab Sample ID: F2E080406-012
Work Order: MTE8C
Matrix: WATER

Date Collected: 05/04/12 0935
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2130026		Yld % 81
Uranium 234	18.7		1.9	0.1	0.09	05/09/12	05/14/12
Uranium 235/236	0.91		0.29	0.10	0.06	05/09/12	05/14/12
Uranium 238	19.4		2.0	0.1	0.09	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0003

Radiochemistry

Lab Sample ID: F2E080406-013
Work Order: MTE8G
Matrix: WATER

Date Collected: 05/04/12 1035
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2130026		Yld % 89
Uranium 234	19.0		1.9	0.1	0.1	05/09/12	05/14/12
Uranium 235/236	1.0		0.29	0.10	0.05	05/09/12	05/14/12
Uranium 238	19.1		2.0	0.1	0.04	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0003

Radiochemistry

Lab Sample ID: F2E080406-014
Work Order: MTE8J
Matrix: WATER

Date Collected: 05/04/12 1145
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Isc URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2130026	Yld % 89
Uranium 234	0.103		0.085	0.100	0.084	05/09/12	05/14/12
Uranium 235/236	-0.0049	U	0.0098	0.100	0.089	05/09/12	05/14/12
Uranium 238	0.075		0.071	0.100	0.072	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0003

Radiochemistry

Lab Sample ID: F2E080406-015
Work Order: MTE8K
Matrix: WATER

Date Collected: 05/04/12 1400
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2130026	Yld % 77
Uranium 234	7.37		0.95	0.10	0.11	05/09/12	05/14/12
Uranium 235/236	0.26		0.15	0.10	0.06	05/09/12	05/14/12
Uranium 238	7.35		0.95	0.10	0.08	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: DUP-01

Radiochemistry

Lab Sample ID: F2E080406-016
Work Order: MTE8M
Matrix: WATER

Date Collected: 05/04/12 0000
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2130026	Yld % 55
Uranium 234	80.6		7.3	0.1	0.2	05/09/12	05/14/12
Uranium 235/236	3.63		0.73	0.10	0.14	05/09/12	05/14/12
Uranium 238	77.9		7.1	0.1	0.07	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0003

Radiochemistry

Lab Sample ID: F2E080406-017
Work Order: MTE8P
Matrix: WATER

Date Collected: 05/04/12 1515
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 2130026		Yld % 49
Uranium 234	90.2		8.3	0.1	0.2	05/09/12	05/14/12
Uranium 235/236	4.37		0.89	0.10	0.10	05/09/12	05/14/12
Uranium 238	89.6		8.2	0.1	0.2	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW704DD0003

Radiochemistry

Lab Sample ID: F2E080406-018
Work Order: MTE8R
Matrix: WATER

Date Collected: 05/04/12 1605
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2130027	Yld % 71
Uranium 234	27.8		2.7	0.1	0.1	05/09/12	05/14/12
Uranium 235/236	1.15		0.34	0.10	0.06	05/09/12	05/14/12
Uranium 238	21.1		2.2	0.1	0.05	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0003

Radiochemistry

Lab Sample ID: F2E080406-019
Work Order: MTE8V
Matrix: WATER

Date Collected: 05/04/12 0840
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2130027		Yld % 77
Uranium 234	12.3		1.4	0.1	0.09	05/09/12	05/14/12
Uranium 235/236	0.18		0.12	0.10	0.06	05/09/12	05/14/12
Uranium 238	3.51		0.58	0.10	0.05	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260003

Radiochemistry

Lab Sample ID: F2E080406-020
Work Order: MTE80
Matrix: WATER

Date Collected: 05/04/12 0935
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2130027	Yld % 61
Uranium 234	54.5		5.1	0.1	0.1	05/09/12	05/14/12
Uranium 235/236	2.62		0.60	0.10	0.13	05/09/12	05/14/12
Uranium 238	55.7		5.2	0.1	0.1	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604D0003

Radiochemistry

Lab Sample ID: F2E080406-021
Work Order: MTE81
Matrix: WATER

Date Collected: 05/04/12 1040
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2130027		Yld % 70
Uranium 234	31.0		3.0	0.1	0.1	05/09/12	05/14/12
Uranium 235/236	1.52		0.41	0.10	0.13	05/09/12	05/14/12
Uranium 238	29.9		2.9	0.1	0.1	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0003

Radiochemistry

Lab Sample ID: F2E080406-022
Work Order: MTE82
Matrix: WATER

Date Collected: 05/04/12 1130
Date Received: 05/07/12 0920

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2130027	Yld % 83
Uranium 234	27.2		2.7	0.1	0.09	05/09/12	05/14/12
Uranium 235/236	1.23		0.34	0.10	0.06	05/09/12	05/14/12
Uranium 238	25.9		2.6	0.1	0.05	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F2E080406
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID / Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**Batch # 2130026**		**Yld % 90**	**F2E090000-026B**
Uranium 234	-0.0019	U	0.0039	0.100	0.035	05/09/12	05/14/12
Uranium 235/236	-0.0048	U	0.0069	0.100	0.051	05/09/12	05/14/12
Uranium 238	0.021	U	0.027	0.100	0.035	05/09/12	05/14/12
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**Batch # 2130027**		**Yld % 103**	**F2E090000-027B**
Uranium 234	0.015	U	0.029	0.100	0.052	05/09/12	05/14/12
Uranium 235/236	-0.0064	U	0.0074	0.100	0.050	05/09/12	05/14/12
Uranium 238	0.007	U	0.020	0.100	0.044	05/09/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F2E080406
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ +/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F2E090000-026C**
Uranium 234	3.27	3.06	0.40	0.06	90	94	(82 - 118)
Uranium 238	3.39	3.45	0.43	0.06	90	102	(80 - 121)
	Batch #:	2130026		Analysis Date:	05/14/12		
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F2E090000-027C**
Uranium 234	3.27	3.31	0.42	0.03	100	101	(82 - 118)
Uranium 238	3.39	3.50	0.43	0.04	100	103	(80 - 121)
	Batch #:	2130027		Analysis Date:	05/14/12		

NOTE(S)

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

MATRIX SPIKE/MATRIX SPIKE DUPLICATE REPORT

Radiochemistry

Client Lot ID: F2E080406
Matrix: WATER

Date Sampled: 05/04/12 1040
Date Received: 05/07/12 0920

Parameter		Spike Amount	SPIKE Result	Total Uncert. (2 σ+/-)	Spike Yld	SAMPLE Result	Total Uncert. (2σ +/-)	QC Sample ID % Yld	%Rec	QC Control Limits
Iso URANIUM (LONG CT) DOE A				**pCi/L**		**A-01-R MOD**			**F2E080406-010**	
Uranium 234		6.53	35.7	3.4	77	29.2	2.9	75	100	(65 - 146)
	Spk2	6.53	37.8	3.6	74	29.2	2.9	75	131	(65 - 146)
								Precision:	6	%RPD
Uranium 238		6.78	34.9	3.3	77	28.8	2.8	75	91	(68 - 143)
	Spk2	6.78	37.0	3.5	74	28.8	2.8	75	121	(68 - 143)
								Precision:	6	%RPD
			Batch #:	2130026		**Analysis date:**	05/14/12			
Iso URANIUM (LONG CT) DOE A				**pCi/L**		**A-01-R MOD**			**F2E080406-021**	
Uranium 234		6.53	37.6	3.6	69	31.0	3.0	70	100	(65 - 146)
	Spk2	6.53	36.0	3.4	73	31.0	3.0	70	76	(65 - 146)
								Precision:	4	%RPD
Uranium 238		6.78	36.4	3.5	69	29.9	2.9	70	96	(68 - 143)
	Spk2	6.78	36.5	3.5	73	29.9	2.9	70	97	(68 - 143)
								Precision:	0.3	%RPD
			Batch #:	2130027		**Analysis date:**	05/14/12			

NOTE(S)

Data are incomplete without the case narrative.
Calculations are performed before rounding to avoid round-off error in calculated results

F2E080406 CLIENT ANALYSIS SUMMARY

Storage Loc: R72-73,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guterl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc | #SMPS In LOT: 0

Date Received: 2012-05-07

Analytical Due Date: 2012-05-21

Report Due Date: 2012-05-22

Report Type: D Expanded Deliverable

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium listead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	A04DMW710D0003			2012-05-03 / 935	MTE67	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	A04DMW710DD0003			2012-05-03 / 1035	MTE7N	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	A04DMW713D0003			2012-05-03 / 1145	MTE7P	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	A04DMW708DD0003			2012-05-03 / 1400	MTE7Q	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	DUP-01			2012-05-03 / 0	MTE7R	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	A04BMW605D0003			2012-05-03 / 1515	MTE7T	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

F2E080406 CLIENT ANALYSIS SUMMARY

Storage Loc: R72-73,MET

Project Manager: LMF Quote #: 89251 SDG:

Project: 140415 Guterl Steel

PO#: 697886 Report to: Karl VanKeuren

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2012-05-07

Analytical Due Date: 2012-05-21

Report Due Date: 2012-05-22

Report Type: D Expanded Deliverable

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
7	A04BMW704DD0003			2012-05-03 / 1605	MTE7V	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
8	A04BMW707DD0003			2012-05-04 / 840	MTE7X	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
9	A04BMW260003			2012-05-04 / 935	MTE70	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
10	A04DMW604D0003			2012-05-04 / 1040	MTE71	WATER

SAMPLE COMMENTS:

	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
D	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
S	UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
S	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
11	A04DMW709DD0003			2012-05-04 / 1130	MTE72	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER

F2E080406 CLIENT ANALYSIS SUMMARY

Storage Loc: R72-73

Project Manager: LMF Quote #: 89251 SDG:

Date Received: 2012-05-07

Project: 140415 Guterl Steel

Analytical Due Date: 2012-05-21

PO#: 697886 Report to: Karl VanKeuren

Report Due Date: 2012-05-22

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: D Expanded Deliverable

#SMPS in LOT: 0 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
12	A04DMW710D0003			2012-05-04 / 935	MTE8C	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
13	A04DMW710DD0003			2012-05-04 / 1035	MTE8G	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
14	A04DMW713D0003			2012-05-04 / 1145	MTE8J	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
15	A04DMW708DD0003			2012-05-04 / 1400	MTE8K	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
16	DUP-01			2012-05-04 / 0	MTE8M	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
17	A04BMW605D0003			2012-05-04 / 1515	MTE8P	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER

F2E080406 CLIENT ANALYSIS SUMMARY

Storage Loc: R72-73

Project Manager: LMF Quote #: 89251 SDG:

Date Received: 2012-05-07

Project: 140415 Guterl Steel

Analytical Due Date: 2012-05-21

PO#: 697886 Report to: Karl VanKeuren

Report Due Date: 2012-05-22

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: D Expanded Deliverable

#SMPS in LOT: 0 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
18	A04BMW704DD0003			2012-05-04 / 1605	MTE8R	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
19	A04BMW707DD0003			2012-05-04 / 840	MTE8V	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
20	A04BMW260003			2012-05-04 / 935	MTE80	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
21	A04DMW604D0003			2012-05-04 / 1040	MTE81	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
D	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06
S	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
S	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
22	A04DMW709DD0003			2012-05-04 / 1130	MTE82	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

COC No. 18

TAL-412 (1007)

Client	Project Manager	Date	Chain of Custody Number
SHAW ENVIRONMENTAL & INFRASTRUCTURE	KARL VAN KEUREN PG, PMP	05/4/2012	
Address 5050 SECTION AVENUE	**Telephone Number (Area Code)/Fax Number** (513) 782-4745 / (513) 782-4807	**Lab Number**	**Page** 1 of 2
City CINCINNATI	**State** OH	**Zip Code** 45212	**Site Contact** KEVIN CROWIN	**Lab Contact** LYNN FUSSNER
Project Name and Location (State) FORMER GUTEHL SPECIALTY STEEL FUSRAP	**Carrier/Waybill Number**	
Contract/Purchase Order/Quote No.		

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): TOTAL U	TOTAL U (FILTERED)	ISOTOPIC U	ISOTOPIC U (FILTERED)	Special Instructions/ Conditions of Receipt
A04D MW 710D 0003	05/3/12	0935		X					X				X	X	X	X	2xLP, 2x250Hg
A04D MW 710DD 0003		1035															
A04D MW 713D 0003		1145															
A04D MW 708DD 0003		1400															
DUP-01		—															
A04BMW(6,5D) 0003		1515															
A04BMW 704DD 0003		1605															
A04BMW 707D 0003	05/4/12	0840															
A04BMW 26 0003		0935															
AC4DMW 604D 0003		1040															6xLP, 6x250P
A04DMW 604D 0003 MS																	
A04DMW 604D 0003 MSD																	

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STANDARD

QC Requirements (Specify)

	Relinquished By	Date	Time	Received By	Date	Time
1.		5/4/12	1155		5-4-12	1155
2.		5-4-12	12:30		5/4/12	1230
3.		5/4/12	1700		5-7-12	0920

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica St. Louis

[redacted]

Chain of Custody Record

TAL-4124 (1007)

F2F080400

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

COC No. 19

Client: SHAW ENVIRONMENTAL & INFRASTRUCTURE	Project Manager: KARL VAN KEUREN, PG, PMP	Date: 05/4/2012	Chain of Custody Number: [illegible]
Address: 5050 SECTION AVENUE	Telephone Number (Area Code)/Fax Number: (513) 782-4745 / (513) 782-4807	Lab Number:	Page 2 of 2
City: CINCINNATI; State: OH; Zip Code: 45212	Site Contact: KEVIN CRONIN; Lab Contact: LYNN FUSSNER		
Project Name and Location (State): FORMER GUTERL SPECIALTY STEEL FUSRAP	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Matrix: Aqueous	Matrix: Sed.	Matrix: Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TOTAL U	TOTAL U (FILTERED)	ISOTOPIC U	ISOTOPIC U (FILTERED)	Special Instructions/ Conditions of Receipt
A04DMW709DD0003	5/4/12	1130		X					X				X	X	X	X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STANDARD

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: [signature]	5/4/12	1155	1. Received By: [signature]	5-4-12	11:55
2. Relinquished By: [signature]	5-4-12	12:30	2. Received By: [signature]	5/4/12	1230
3. Relinquished By: [signature] TABUFFARD	5/4/12	1700	3. Received By: [signature]	5-7-12	0920

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F2E080406

CUR Form #: 2 8 1

CONDITION UPON RECEIPT FORM

Client: Shaw

Quote No: 89251

COC/RFA No: 191675

Initiated By: bm Date: 5/7/12 Time: 0920

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*				Sample Temperature (s):**			
1.	4485 0261 0812	6.		1.	Ambient	6.	
2.	↓ 0823	7.		2.	↓	7.	
3.		8.		3.		8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 5/9/12

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guterl Steel

Lot #: F2E090426

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

May 23, 2012

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F2E090426-

This report contains the analytical results for the 10 samples received under chain of custody by TestAmerica in St. Louis on May 8, 2012. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.2 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results iu this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

The following clean-up methods for Organic analyses may have been used on samples in this data set. Specific methods employed are documented on the batch extraction logs.

Method 3600C: Cleanup
Method 3620C: Florisil Cleanup
Method 3630C: Silica Gel Cleanup
Method 3640A: Gel-Permeation Cleanup
Method 3650B: Acid-Base Partition Cleanup
Method 3660B: Sulfur Cleanup
Method 3665A: Sulfuric Acid/Permanganate Cleanup

Mercury in Liquid Waste (Manual Cold Vapor) (SW846 7470)
Additional Potassium Permanganate in the amount of 4.5mL was added to all samples and QC due to the permanganate color not persisting for 15 min.

Affected Samples:
F2E090426 (1): GUTERL STEEL SEEP (1)
F2E090426 (2): GUTERL STEEL SEEP (1) (F)
F2E090426 (3): GUTERL STEEL SEEP (2)
F2E090426 (4): GUTERL STEEL SEEP (2) (F)
F2E090426 (5): GUTERL STEEL SEEP (3)
F2E090426 (6): GUTERL STEEL SEEP (3) (F)
F2E090426 (7): GUTERL SURFACE (1)
F2E090426 (8): GUTERL SURFACE (1) (F)
F2E090426 (9): GUTERL SURFACE (2)
F2E090426 (10): GUTERL SURFACE (2) (F)

Inductively Coupled Plasma (ICP) Metals (SW-846 6010)
The LLC recovery for thallium is outside the upper QC limit, indicating a potential positive bias for that analyte. This analyte was non-detect, indicating that the samples were not affected by this excursion. The original sample results are provided.

The MS (MSD) recoveryfor calcium is outside the established QC limits. The said analyte concentration in the original sample is greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery. No further action is required.

The samples were analyzed at a dilution due to high concentrations of target and interfering analytes. The reporting limit has been adjusted for the dilution.

Affected Samples:
F2E090426 (1): GUTERL STEEL SEEP (1)
F2E090426 (2): GUTERL STEEL SEEP (1) (F)
F2E090426 (3): GUTERL STEEL SEEP (2)
F2E090426 (4): GUTERL STEEL SEEP (2) (F)
F2E090426 (5): GUTERL STEEL SEEP (3)
F2E090426 (6): GUTERL STEEL SEEP (3) (F)
F2E090426 (7): GUTERL SURFACE (1)
F2E090426 (8): GUTERL SURFACE (1) (F)
F2E090426 (9): GUTERL SURFACE (2)
F2E090426 (10): GUTERL SURFACE (2) (F)

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)
There was insufficient sample to perform a sample duplicate. The sample aliquot was also reduced from 1000mL to 500mL.

Affected Samples:
F2E090426 (1): GUTERL STEEL SEEP (1)
F2E090426 (2): GUTERL STEEL SEEP (1) (F)
F2E090426 (3): GUTERL STEEL SEEP (2)
F2E090426 (4): GUTERL STEEL SEEP (2) (F)
F2E090426 (5): GUTERL STEEL SEEP (3)
F2E090426 (6): GUTERL STEEL SEEP (3) (F)
F2E090426 (7): GUTERL SURFACE (1)
F2E090426 (8): GUTERL SURFACE (1) (F)
F2E090426 (9): GUTERL SURFACE (2)
F2E090426 (10): GUTERL SURFACE (2) (F)

There were no other nonconformances or observations noted with any analysis on this lot.

METHODS SUMMARY

F2E090426

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A	SW846 7470A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010C	

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F2E090426

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MTF4W	001	GUTERL STEEL SEEP (1)	05/07/12	09:05
MTF40	002	GUTERL STEEL SEEP (1) (F)	05/07/12	09:05
MTF41	003	GUTERL STEEL SEEP (2)	05/07/12	09:15
MTF43	004	GUTERL STEEL SEEP (2) (F)	05/07/12	09:15
MTF44	005	GUTERL STEEL SEEP (3)	05/07/12	09:30
MTF46	006	GUTERL STEEL SEEP (3) (F)	05/07/12	09:30
MTF47	007	GUTERL SURFACE (1)	05/07/12	09:45
MTF49	008	GUTERL SURFACE (1) (F)	05/07/12	09:45
MTF5A	009	GUTERL SURFACE (2)	05/07/12	09:55
MTF5C	010	GUTERL SURFACE (2) (F)	05/07/12	09:55

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (1)

TOTAL Metals

Lot-Sample #...: F2E090426-001 Matrix.....: WATER
Date Sampled...: 05/07/12 09:05 Date Received..: 05/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131078						
Silver	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF4W1AE
		Dilution Factor: 1		Analysis Time..: 10:09		
Aluminum	ND	200	ug/L	SW846 6010C	05/10-05/18/12	MTF4W1AF
		Dilution Factor: 1		Analysis Time..: 10:09		
Arsenic	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF4W1AD
		Dilution Factor: 1		Analysis Time..: 10:09		
Barium	**53.7**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF4W1AG**
		Dilution Factor: 1		Analysis Time..: 10:09		
Beryllium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF4W1AH
		Dilution Factor: 1		Analysis Time..: 10:09		
Calcium	**121000 N**	**10000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF4W1AJ**
		Dilution Factor: 10		Analysis Time..: 12:50		
Cadmium	**1.3 J**	**5**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF4W1AK**
		Dilution Factor: 1		Analysis Time..: 10:09		
Cobalt	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF4W1AL
		Dilution Factor: 1		Analysis Time..: 10:09		
Chromium	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF4W1AM
		Dilution Factor: 1		Analysis Time..: 10:09		
Copper	**232**	**25**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF4W1AN**
		Dilution Factor: 1		Analysis Time..: 10:09		
Iron	**51.9 J**	**100**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF4W1AP**
		Dilution Factor: 1		Analysis Time..: 10:09		
Magnesium	**32000**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF4W1AQ**
		Dilution Factor: 1		Analysis Time..: 10:09		
Manganese	**19.2**	**15**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF4W1AR**
		Dilution Factor: 1		Analysis Time..: 10:09		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (1)

TOTAL Metals

Lot-Sample #...: F2E090426-001 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	**268000**	**10000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF4W1AT**
		Dilution Factor: 10		Analysis Time..: 12:50		
Nickel	ND	40	ug/L	SW846 6010C	05/10-05/18/12	MTF4W1AU
		Dilution Factor: 1		Analysis Time..: 10:09		
Lead	**1.9 J**	**10**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF4W1AV**
		Dilution Factor: 1		Analysis Time..: 10:09		
Antimony	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF4W1AW
		Dilution Factor: 1		Analysis Time..: 10:09		
Selenium	ND	15	ug/L	SW846 6010C	05/10-05/18/12	MTF4W1AX
		Dilution Factor: 1		Analysis Time..: 10:09		
Strontium	**504**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF4W1A0**
		Dilution Factor: 10		Analysis Time..: 12:50		
Thallium	ND	20	ug/L	SW846 6010C	05/10-05/18/12	MTF4W1A1
		Dilution Factor: 1		Analysis Time..: 10:09		
Vanadium	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF4W1A2
		Dilution Factor: 1		Analysis Time..: 10:09		
Zinc	**85.8**	**20**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF4W1A3**
		Dilution Factor: 1		Analysis Time..: 10:09		
Prep Batch #...: 2131080						
Uranium	**5.3**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTF4W1A4**
		Dilution Factor: 1		Analysis Time..: 03:09		
Prep Batch #...: 2137017						
Mercury	ND	0.2	ug/L	SW846 7470A	05/16/12	MTF4W1AC
		Dilution Factor: 1		Analysis Time..: 13:21		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (1) (F)

TOTAL Metals

Lot-Sample #...: F2E090426-002 Matrix.....: WATER
Date Sampled...: 05/07/12 09:05 Date Received..: 05/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131078						
Silver	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF401AL
		Dilution Factor: 1		Analysis Time..: 10:23		
Aluminum	ND	200	ug/L	SW846 6010C	05/10-05/18/12	MTF401AM
		Dilution Factor: 1		Analysis Time..: 10:23		
Arsenic	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF401AK
		Dilution Factor: 1		Analysis Time..: 10:23		
Barium	**54.3**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF401AN**
		Dilution Factor: 1		Analysis Time..: 10:23		
Beryllium	**1.2 J**	**5**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF401AP**
		Dilution Factor: 1		Analysis Time..: 10:23		
Calcium	**116000 N**	**10000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF401AQ**
		Dilution Factor: 10		Analysis Time..: 13:05		
Cadmium	**1.1 J**	**5**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF401AR**
		Dilution Factor: 1		Analysis Time..: 10:23		
Cobalt	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF401AT
		Dilution Factor: 1		Analysis Time..: 10:23		
Chromium	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF401AU
		Dilution Factor: 1		Analysis Time..: 10:23		
Copper	**195**	**25**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF401AV**
		Dilution Factor: 1		Analysis Time..: 10:23		
Iron	**28.5 J**	**100**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF401AW**
		Dilution Factor: 1		Analysis Time..: 10:23		
Magnesium	**31600**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF401AX**
		Dilution Factor: 1		Analysis Time..: 10:23		
Manganese	**13.2 J**	**15**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF401A0**
		Dilution Factor: 1		Analysis Time..: 10:23		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (1) (F)

TOTAL Metals

Lot-Sample #...: F2E090426-002 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	**265000**	**10000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF401A1**
		Dilution Factor: 10		Analysis Time..: 13:05		
Nickel	ND	40	ug/L	SW846 6010C	05/10-05/18/12	MTF401A2
		Dilution Factor: 1		Analysis Time..: 10:23		
Lead	**1.8 J**	**10**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF401A3**
		Dilution Factor: 1		Analysis Time..: 10:23		
Antimony	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF401A4
		Dilution Factor: 1		Analysis Time..: 10:23		
Selenium	ND	15	ug/L	SW846 6010C	05/10-05/18/12	MTF401A5
		Dilution Factor: 1		Analysis Time..: 10:23		
Strontium	**497**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF401AA**
		Dilution Factor: 10		Analysis Time..: 13:05		
Thallium	ND	20	ug/L	SW846 6010C	05/10-05/18/12	MTF401AC
		Dilution Factor: 1		Analysis Time..: 10:23		
Vanadium	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF401AD
		Dilution Factor: 1		Analysis Time..: 10:23		
Zinc	**74.4**	**20**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF401AE**
		Dilution Factor: 1		Analysis Time..: 10:23		
Prep Batch #...: 2131080						
Uranium	**5.3**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTF401AF**
		Dilution Factor: 1		Analysis Time..: 03:16		
Prep Batch #...: 2137017						
Mercury	ND	0.2	ug/L	SW846 7470A	05/16/12	MTF401AJ
		Dilution Factor: 1		Analysis Time..: 13:23		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (2)

TOTAL Metals

Lot-Sample #...: F2E090426-003 **Matrix.....:** WATER
Date Sampled...: 05/07/12 09:15 **Date Received..:** 05/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131078						
Silver	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF411AL
		Dilution Factor: 1		Analysis Time..: 10:31		
Aluminum	ND	200	ug/L	SW846 6010C	05/10-05/18/12	MTF411AM
		Dilution Factor: 1		Analysis Time..: 10:31		
Arsenic	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF411AK
		Dilution Factor: 1		Analysis Time..: 10:31		
Barium	**38.3 J**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF411AN**
		Dilution Factor: 1		Analysis Time..: 10:31		
Beryllium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF411AP
		Dilution Factor: 1		Analysis Time..: 10:31		
Calcium	**86600 N**	**10000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF411AQ**
		Dilution Factor: 10		Analysis Time..: 13:12		
Cadmium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF411AR
		Dilution Factor: 1		Analysis Time..: 10:31		
Cobalt	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF411AT
		Dilution Factor: 1		Analysis Time..: 10:31		
Chromium	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF411AU
		Dilution Factor: 1		Analysis Time..: 10:31		
Copper	**239**	**25**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF411AV**
		Dilution Factor: 1		Analysis Time..: 10:31		
Iron	ND	100	ug/L	SW846 6010C	05/10-05/18/12	MTF411AW
		Dilution Factor: 1		Analysis Time..: 10:31		
Magnesium	**23000**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF411AX**
		Dilution Factor: 1		Analysis Time..: 10:31		
Manganese	**18.0**	**15**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF411A0**
		Dilution Factor: 1		Analysis Time..: 10:31		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (2)

TOTAL Metals

Lot-Sample #...: F2E090426-003 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	**154000**	**10000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF411A1**
		Dilution Factor: 10		Analysis Time..: 13:12		
Nickel	ND	40	ug/L	SW846 6010C	05/10-05/18/12	MTF411A2
		Dilution Factor: 1		Analysis Time..: 10:31		
Lead	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF411A3
		Dilution Factor: 1		Analysis Time..: 10:31		
Antimony	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF411A4
		Dilution Factor: 1		Analysis Time..: 10:31		
Selenium	ND	15	ug/L	SW846 6010C	05/10-05/18/12	MTF411A5
		Dilution Factor: 1		Analysis Time..: 10:31		
Strontium	**296**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF411AA**
		Dilution Factor: 10		Analysis Time..: 13:12		
Thallium	ND	20	ug/L	SW846 6010C	05/10-05/18/12	MTF411AC
		Dilution Factor: 1		Analysis Time..: 10:31		
Vanadium	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF411AD
		Dilution Factor: 1		Analysis Time..: 10:31		
Zinc	**81.1**	**20**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF411AE**
		Dilution Factor: 1		Analysis Time..: 10:31		
Prep Batch #...: 2131080						
Uranium	**5.8**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTF411AF**
		Dilution Factor: 1		Analysis Time..: 03:22		
Prep Batch #...: 2137017						
Mercury	ND	0.2	ug/L	SW846 7470A	05/16/12	MTF411AJ
		Dilution Factor: 1		Analysis Time..: 13:29		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (2) (F)

TOTAL Metals

Lot-Sample #...: F2E090426-004 Matrix.....: WATER
Date Sampled...: 05/07/12 09:15 Date Received..: 05/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131078						
Silver	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF431AL
		Dilution Factor: 1		Analysis Time..: 10:34		
Aluminum	ND	200	ug/L	SW846 6010C	05/10-05/18/12	MTF431AM
		Dilution Factor: 1		Analysis Time..: 10:34		
Arsenic	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF431AK
		Dilution Factor: 1		Analysis Time..: 10:34		
Barium	**38.1 J**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF431AN**
		Dilution Factor: 1		Analysis Time..: 10:34		
Beryllium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF431AP
		Dilution Factor: 1		Analysis Time..: 10:34		
Calcium	**87300 N**	**10000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF431AQ**
		Dilution Factor: 10		Analysis Time..: 13:15		
Cadmium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF431AR
		Dilution Factor: 1		Analysis Time..: 10:34		
Cobalt	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF431AT
		Dilution Factor: 1		Analysis Time..: 10:34		
Chromium	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF431AU
		Dilution Factor: 1		Analysis Time..: 10:34		
Copper	**206**	**25**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF431AV**
		Dilution Factor: 1		Analysis Time..: 10:34		
Iron	ND	100	ug/L	SW846 6010C	05/10-05/18/12	MTF431AW
		Dilution Factor: 1		Analysis Time..: 10:34		
Magnesium	**22700**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF431AX**
		Dilution Factor: 1		Analysis Time..: 10:34		
Manganese	**18.4**	**15**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF431A0**
		Dilution Factor: 1		Analysis Time..: 10:34		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (2) (F)

TOTAL Metals

Lot-Sample #...: F2E090426-004 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	**156000**	**10000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF431A1**
		Dilution Factor: 10		Analysis Time..: 13:15		
Nickel	ND	40	ug/L	SW846 6010C	05/10-05/18/12	MTF431A2
		Dilution Factor: 1		Analysis Time..: 10:34		
Lead	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF431A3
		Dilution Factor: 1		Analysis Time..: 10:34		
Antimony	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF431A4
		Dilution Factor: 1		Analysis Time..: 10:34		
Selenium	ND	15	ug/L	SW846 6010C	05/10-05/18/12	MTF431A5
		Dilution Factor: 1		Analysis Time..: 10:34		
Strontium	**303**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF431AA**
		Dilution Factor: 10		Analysis Time..: 13:15		
Thallium	ND	20	ug/L	SW846 6010C	05/10-05/18/12	MTF431AC
		Dilution Factor: 1		Analysis Time..: 10:34		
Vanadium	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF431AD
		Dilution Factor: 1		Analysis Time..: 10:34		
Zinc	**78.4**	**20**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF431AE**
		Dilution Factor: 1		Analysis Time..: 10:34		
Prep Batch #...: 2131080						
Uranium	**5.9**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTF431AF**
		Dilution Factor: 1		Analysis Time..: 03:29		
Prep Batch #...: 2137017						
Mercury	ND	0.2	ug/L	SW846 7470A	05/16/12	MTF431AJ
		Dilution Factor: 1		Analysis Time..: 13:30		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (3)

TOTAL Metals

Lot-Sample #...: F2E090426-005 **Matrix.....:** WATER
Date Sampled...: 05/07/12 09:30 **Date Received..:** 05/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131078						
Silver	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF441AL
		Dilution Factor: 1		Analysis Time..: 10:45		
Aluminum	ND	200	ug/L	SW846 6010C	05/10-05/18/12	MTF441AM
		Dilution Factor: 1		Analysis Time..: 10:45		
Arsenic	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF441AK
		Dilution Factor: 1		Analysis Time..: 10:45		
Barium	**31.7 J**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF441AN**
		Dilution Factor: 1		Analysis Time..: 10:45		
Beryllium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF441AP
		Dilution Factor: 1		Analysis Time..: 10:45		
Calcium	**103000 N**	**10000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF441AQ**
		Dilution Factor: 10		Analysis Time..: 13:19		
Cadmium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF441AR
		Dilution Factor: 1		Analysis Time..: 10:45		
Cobalt	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF441AT
		Dilution Factor: 1		Analysis Time..: 10:45		
Chromium	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF441AU
		Dilution Factor: 1		Analysis Time..: 10:45		
Copper	ND	25	ug/L	SW846 6010C	05/10-05/18/12	MTF441AV
		Dilution Factor: 1		Analysis Time..: 10:45		
Iron	ND	100	ug/L	SW846 6010C	05/10-05/18/12	MTF441AW
		Dilution Factor: 1		Analysis Time..: 10:45		
Magnesium	**27700**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF441AX**
		Dilution Factor: 1		Analysis Time..: 10:45		
Manganese	ND	15	ug/L	SW846 6010C	05/10-05/18/12	MTF441A0
		Dilution Factor: 1		Analysis Time..: 10:45		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (3)

TOTAL Metals

Lot-Sample #...: F2E090426-005 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	**95400**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF441A1**
		Dilution Factor: 1		Analysis Time..: 10:45		
Nickel	ND	40	ug/L	SW846 6010C	05/10-05/18/12	MTF441A2
		Dilution Factor: 1		Analysis Time..: 10:45		
Lead	**1.7 J**	**10**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF441A3**
		Dilution Factor: 1		Analysis Time..: 10:45		
Antimony	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF441A4
		Dilution Factor: 1		Analysis Time..: 10:45		
Selenium	ND	15	ug/L	SW846 6010C	05/10-05/18/12	MTF441A5
		Dilution Factor: 1		Analysis Time..: 10:45		
Strontium	**300**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF441AA**
		Dilution Factor: 10		Analysis Time..: 13:19		
Thallium	ND	20	ug/L	SW846 6010C	05/10-05/18/12	MTF441AC
		Dilution Factor: 1		Analysis Time..: 10:45		
Vanadium	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF441AD
		Dilution Factor: 1		Analysis Time..: 10:45		
Zinc	**54.8**	**20**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF441AE**
		Dilution Factor: 1		Analysis Time..: 10:45		
Prep Batch #...: 2131080						
Uranium	**20.7**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTF441AF**
		Dilution Factor: 1		Analysis Time..: 03:36		
Prep Batch #...: 2137017						
Mercury	ND	0.2	ug/L	SW846 7470A	05/16/12	MTF441AJ
		Dilution Factor: 1		Analysis Time..: 13:32		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (3) (F)

TOTAL Metals

Lot-Sample #...: F2E090426-006 **Matrix.....:** WATER
Date Sampled...: 05/07/12 09:30 **Date Received..:** 05/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131078						
Silver	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF461AL
		Dilution Factor: 1		Analysis Time..: 10:48		
Aluminum	ND	200	ug/L	SW846 6010C	05/10-05/18/12	MTF461AM
		Dilution Factor: 1		Analysis Time..: 10:48		
Arsenic	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF461AK
		Dilution Factor: 1		Analysis Time..: 10:48		
Barium	**31.8 J**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF461AN**
		Dilution Factor: 1		Analysis Time..: 10:48		
Beryllium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF461AP
		Dilution Factor: 1		Analysis Time..: 10:48		
Calcium	**102000 N**	**10000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF461AQ**
		Dilution Factor: 10		Analysis Time..: 13:23		
Cadmium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF461AR
		Dilution Factor: 1		Analysis Time..: 10:48		
Cobalt	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF461AT
		Dilution Factor: 1		Analysis Time..: 10:48		
Chromium	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF461AU
		Dilution Factor: 1		Analysis Time..: 10:48		
Copper	ND	25	ug/L	SW846 6010C	05/10-05/18/12	MTF461AV
		Dilution Factor: 1		Analysis Time..: 10:48		
Iron	ND	100	ug/L	SW846 6010C	05/10-05/18/12	MTF461AW
		Dilution Factor: 1		Analysis Time..: 10:48		
Magnesium	**27700**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF461AX**
		Dilution Factor: 1		Analysis Time..: 10:48		
Manganese	ND	15	ug/L	SW846 6010C	05/10-05/18/12	MTF461A0
		Dilution Factor: 1		Analysis Time..: 10:48		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (3) (F)

TOTAL Metals

Lot-Sample #...: F2E090426-006 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	**95100**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF461A1**
		Dilution Factor: 1		Analysis Time..: 10:48		
Nickel	ND	40	ug/L	SW846 6010C	05/10-05/18/12	MTF461A2
		Dilution Factor: 1		Analysis Time..: 10:48		
Lead	**1.6 J**	**10**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF461A3**
		Dilution Factor: 1		Analysis Time..: 10:48		
Antimony	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF461A4
		Dilution Factor: 1		Analysis Time..: 10:48		
Selenium	ND	15	ug/L	SW846 6010C	05/10-05/18/12	MTF461A5
		Dilution Factor: 1		Analysis Time..: 10:48		
Strontium	**299**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF461AA**
		Dilution Factor: 10		Analysis Time..: 13:23		
Thallium	ND	20	ug/L	SW846 6010C	05/10-05/18/12	MTF461AC
		Dilution Factor: 1		Analysis Time..: 10:48		
Vanadium	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF461AD
		Dilution Factor: 1		Analysis Time..: 10:48		
Zinc	**56.7**	**20**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF461AE**
		Dilution Factor: 1		Analysis Time..: 10:48		
Prep Batch #...: 2131080						
Uranium	**20.8**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTF461AF**
		Dilution Factor: 1		Analysis Time..: 03:42		
Prep Batch #...: 2137017						
Mercury	ND	0.2	ug/L	SW846 7470A	05/16/12	MTF461AJ
		Dilution Factor: 1		Analysis Time..: 13:33		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL SURFACE (1)

TOTAL Metals

Lot-Sample #...: F2E090426-007 **Matrix.....:** WATER
Date Sampled...: 05/07/12 09:45 **Date Received..:** 05/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131078						
Silver	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF471AL
		Dilution Factor: 1		Analysis Time..: 10:52		
Aluminum	**368**	**200**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF471AM**
		Dilution Factor: 1		Analysis Time..: 10:52		
Arsenic	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF471AK
		Dilution Factor: 1		Analysis Time..: 10:52		
Barium	**40.5 J**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF471AN**
		Dilution Factor: 1		Analysis Time..: 10:52		
Beryllium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF471AP
		Dilution Factor: 1		Analysis Time..: 10:52		
Calcium	**82600 N**	**10000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF471AQ**
		Dilution Factor: 10		Analysis Time..: 13:33		
Cadmium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF471AR
		Dilution Factor: 1		Analysis Time..: 10:52		
Cobalt	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF471AT
		Dilution Factor: 1		Analysis Time..: 10:52		
Chromium	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF471AU
		Dilution Factor: 1		Analysis Time..: 10:52		
Copper	ND	25	ug/L	SW846 6010C	05/10-05/18/12	MTF471AV
		Dilution Factor: 1		Analysis Time..: 10:52		
Iron	**636**	**100**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF471AW**
		Dilution Factor: 1		Analysis Time..: 10:52		
Magnesium	**15000**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF471AX**
		Dilution Factor: 1		Analysis Time..: 10:52		
Manganese	**72.5**	**15**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF471A0**
		Dilution Factor: 1		Analysis Time..: 10:52		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL SURFACE (1)

TOTAL Metals

Lot-Sample #...: F2E090426-007 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	**38300**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF471A1**
		Dilution Factor: 1		Analysis Time..: 10:52		
Nickel	ND	40	ug/L	SW846 6010C	05/10-05/18/12	MTF471A2
		Dilution Factor: 1		Analysis Time..: 10:52		
Lead	**2.0 J**	**10**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF471A3**
		Dilution Factor: 1		Analysis Time..: 10:52		
Antimony	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF471A4
		Dilution Factor: 1		Analysis Time..: 10:52		
Selenium	ND	15	ug/L	SW846 6010C	05/10-05/18/12	MTF471A5
		Dilution Factor: 1		Analysis Time..: 10:52		
Strontium	**661**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF471AA**
		Dilution Factor: 10		Analysis Time..: 13:33		
Thallium	ND	20	ug/L	SW846 6010C	05/10-05/18/12	MTF471AC
		Dilution Factor: 1		Analysis Time..: 10:52		
Vanadium	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF471AD
		Dilution Factor: 1		Analysis Time..: 10:52		
Zinc	**9.9 J**	**20**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF471AE**
		Dilution Factor: 1		Analysis Time..: 10:52		
Prep Batch #...: 2131080						
Uranium	**0.52 J**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTF471AF**
		Dilution Factor: 1		Analysis Time..: 04:03		
Prep Batch #...: 2137017						
Mercury	ND	0.2	ug/L	SW846 7470A	05/16/12	MTF471AJ
		Dilution Factor: 1		Analysis Time..: 13:35		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL SURFACE (1) (F)

TOTAL Metals

Lot-Sample #...: F2E090426-008 Matrix.....: WATER
Date Sampled...: 05/07/12 09:45 Date Received..: 05/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131078						
Silver	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF491AL
		Dilution Factor: 1		Analysis Time..: 10:56		
Aluminum	ND	200	ug/L	SW846 6010C	05/10-05/18/12	MTF491AM
		Dilution Factor: 1		Analysis Time..: 10:56		
Arsenic	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF491AK
		Dilution Factor: 1		Analysis Time..: 10:56		
Barium	**36.9 J**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF491AN**
		Dilution Factor: 1		Analysis Time..: 10:56		
Beryllium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF491AP
		Dilution Factor: 1		Analysis Time..: 10:56		
Calcium	**82100 N**	**10000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF491AQ**
		Dilution Factor: 10		Analysis Time..: 13:37		
Cadmium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF491AR
		Dilution Factor: 1		Analysis Time..: 10:56		
Cobalt	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF491AT
		Dilution Factor: 1		Analysis Time..: 10:56		
Chromium	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF491AU
		Dilution Factor: 1		Analysis Time..: 10:56		
Copper	ND	25	ug/L	SW846 6010C	05/10-05/18/12	MTF491AV
		Dilution Factor: 1		Analysis Time..: 10:56		
Iron	**47.4 J**	**100**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF491AW**
		Dilution Factor: 1		Analysis Time..: 10:56		
Magnesium	**15000**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF491AX**
		Dilution Factor: 1		Analysis Time..: 10:56		
Manganese	**45.1**	**15**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF491A0**
		Dilution Factor: 1		Analysis Time..: 10:56		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL SURFACE (1) (F)

TOTAL Metals

Lot-Sample #...: F2E090426-008 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	**38500**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF491A1**
		Dilution Factor: 1		Analysis Time..: 10:56		
Nickel	ND	40	ug/L	SW846 6010C	05/10-05/18/12	MTF491A2
		Dilution Factor: 1		Analysis Time..: 10:56		
Lead	**1.6 J**	**10**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF491A3**
		Dilution Factor: 1		Analysis Time..: 10:56		
Antimony	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF491A4
		Dilution Factor: 1		Analysis Time..: 10:56		
Selenium	ND	15	ug/L	SW846 6010C	05/10-05/18/12	MTF491A5
		Dilution Factor: 1		Analysis Time..: 10:56		
Strontium	**660**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF491AA**
		Dilution Factor: 10		Analysis Time..: 13:37		
Thallium	ND	20	ug/L	SW846 6010C	05/10-05/18/12	MTF491AC
		Dilution Factor: 1		Analysis Time..: 10:56		
Vanadium	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF491AD
		Dilution Factor: 1		Analysis Time..: 10:56		
Zinc	**7.3 J**	**20**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF491AE**
		Dilution Factor: 1		Analysis Time..: 10:56		
Prep Batch #...: 2131080						
Uranium	**0.51 J**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTF491AF**
		Dilution Factor: 1		Analysis Time..: 04:09		
Prep Batch #...: 2137017						
Mercury	ND	0.2	ug/L	SW846 7470A	05/16/12	MTF491AJ
		Dilution Factor: 1		Analysis Time..: 13:40		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL SURFACE (2)

TOTAL Metals

Lot-Sample #...: F2E090426-009 **Matrix.....:** WATER
Date Sampled...: 05/07/12 09:55 **Date Received..:** 05/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131078						
Silver	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF5A1AL
		Dilution Factor: 1		Analysis Time..: 10:59		
Aluminum	**386**	**200**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5A1AM**
		Dilution Factor: 1		Analysis Time..: 10:59		
Arsenic	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF5A1AK
		Dilution Factor: 1		Analysis Time..: 10:59		
Barium	**39.7 J**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5A1AN**
		Dilution Factor: 1		Analysis Time..: 10:59		
Beryllium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF5A1AP
		Dilution Factor: 1		Analysis Time..: 10:59		
Calcium	**80700 N**	**10000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5A1AQ**
		Dilution Factor: 10		Analysis Time..: 13:41		
Cadmium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF5A1AR
		Dilution Factor: 1		Analysis Time..: 10:59		
Cobalt	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF5A1AT
		Dilution Factor: 1		Analysis Time..: 10:59		
Chromium	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF5A1AU
		Dilution Factor: 1		Analysis Time..: 10:59		
Copper	ND	25	ug/L	SW846 6010C	05/10-05/18/12	MTF5A1AV
		Dilution Factor: 1		Analysis Time..: 10:59		
Iron	**666**	**100**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5A1AW**
		Dilution Factor: 1		Analysis Time..: 10:59		
Magnesium	**14900**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5A1AX**
		Dilution Factor: 1		Analysis Time..: 10:59		
Manganese	**73.1**	**15**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5A1A0**
		Dilution Factor: 1		Analysis Time..: 10:59		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL SURFACE (2)

TOTAL Metals

Lot-Sample #...: F2E090426-009 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	**38200**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5A1A1**
		Dilution Factor: 1		Analysis Time..: 10:59		
Nickel	ND	40	ug/L	SW846 6010C	05/10-05/18/12	MTF5A1A2
		Dilution Factor: 1		Analysis Time..: 10:59		
Lead	**1.8 J**	**10**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5A1A3**
		Dilution Factor: 1		Analysis Time..: 10:59		
Antimony	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF5A1A4
		Dilution Factor: 1		Analysis Time..: 10:59		
Selenium	ND	15	ug/L	SW846 6010C	05/10-05/18/12	MTF5A1A5
		Dilution Factor: 1		Analysis Time..: 10:59		
Strontium	**661**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5A1AA**
		Dilution Factor: 10		Analysis Time..: 13:41		
Thallium	ND	20	ug/L	SW846 6010C	05/10-05/18/12	MTF5A1AC
		Dilution Factor: 1		Analysis Time..: 10:59		
Vanadium	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF5A1AD
		Dilution Factor: 1		Analysis Time..: 10:59		
Zinc	**10.4 J**	**20**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5A1AE**
		Dilution Factor: 1		Analysis Time..: 10:59		
Prep Batch #...: 2131080						
Uranium	**0.50 J**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTF5A1AF**
		Dilution Factor: 1		Analysis Time..: 04:16		
Prep Batch #...: 2137017						
Mercury	ND	0.2	ug/L	SW846 7470A	05/16/12	MTF5A1AJ
		Dilution Factor: 1		Analysis Time..: 13:41		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL SURFACE (2) (F)

TOTAL Metals

Lot-Sample #...: F2E090426-010 **Matrix.....:** WATER
Date Sampled...: 05/07/12 09:55 **Date Received..:** 05/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2131078						
Silver	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF5C1AL
		Dilution Factor: 1		Analysis Time..: 11:03		
Aluminum	ND	200	ug/L	SW846 6010C	05/10-05/18/12	MTF5C1AM
		Dilution Factor: 1		Analysis Time..: 11:03		
Arsenic	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF5C1AK
		Dilution Factor: 1		Analysis Time..: 11:03		
Barium	**36.7 J**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5C1AN**
		Dilution Factor: 1		Analysis Time..: 11:03		
Beryllium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF5C1AP
		Dilution Factor: 1		Analysis Time..: 11:03		
Calcium	**80200 N**	**10000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5C1AQ**
		Dilution Factor: 10		Analysis Time..: 13:44		
Cadmium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTF5C1AR
		Dilution Factor: 1		Analysis Time..: 11:03		
Cobalt	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF5C1AT
		Dilution Factor: 1		Analysis Time..: 11:03		
Chromium	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF5C1AU
		Dilution Factor: 1		Analysis Time..: 11:03		
Copper	ND	25	ug/L	SW846 6010C	05/10-05/18/12	MTF5C1AV
		Dilution Factor: 1		Analysis Time..: 11:03		
Iron	**46.9 J**	**100**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5C1AW**
		Dilution Factor: 1		Analysis Time..: 11:03		
Magnesium	**15000**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5C1AX**
		Dilution Factor: 1		Analysis Time..: 11:03		
Manganese	**45.3**	**15**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5C1A0**
		Dilution Factor: 1		Analysis Time..: 11:03		

(Continued on next page)

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL SURFACE (2) (F)

TOTAL Metals

Lot-Sample #...: F2E090426-010 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	**38000**	**1000**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5C1A1**
		Dilution Factor: 1		Analysis Time..: 11:03		
Nickel	ND	40	ug/L	SW846 6010C	05/10-05/18/12	MTF5C1A2
		Dilution Factor: 1		Analysis Time..: 11:03		
Lead	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF5C1A3
		Dilution Factor: 1		Analysis Time..: 11:03		
Antimony	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTF5C1A4
		Dilution Factor: 1		Analysis Time..: 11:03		
Selenium	ND	15	ug/L	SW846 6010C	05/10-05/18/12	MTF5C1A5
		Dilution Factor: 1		Analysis Time..: 11:03		
Strontium	**655**	**50**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5C1AA**
		Dilution Factor: 10		Analysis Time..: 13:44		
Thallium	ND	20	ug/L	SW846 6010C	05/10-05/18/12	MTF5C1AC
		Dilution Factor: 1		Analysis Time..: 11:03		
Vanadium	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTF5C1AD
		Dilution Factor: 1		Analysis Time..: 11:03		
Zinc	**8.0 J**	**20**	**ug/L**	**SW846 6010C**	**05/10-05/18/12**	**MTF5C1AE**
		Dilution Factor: 1		Analysis Time..: 11:03		
Prep Batch #...: 2131080						
Uranium	**0.49 J**	**1**	**ug/L**	**SW846 6020A**	**05/10-05/16/12**	**MTF5C1AF**
		Dilution Factor: 1		Analysis Time..: 04:23		
Prep Batch #...: 2137017						
Mercury	ND	0.2	ug/L	SW846 7470A	05/16/12	MTF5C1AJ
		Dilution Factor: 1		Analysis Time..: 13:43		

NOTE(S):

J Estimated result. Result is less than RL.

N Spiked analyte recovery is outside stated control limits.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F2E090426 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F2E100000-078 **Prep Batch #...:** 2131078						
Aluminum	ND	200	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AD
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Antimony	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AU
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Arsenic	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AA
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Barium	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AE
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Beryllium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AF
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Cadmium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AH
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Calcium	ND	1000	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AG
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Chromium	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AK
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Cobalt	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AJ
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Copper	ND	25	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AL
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Iron	ND	100	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AM
		Dilution Factor: 1				
		Analysis Time..: 10:02				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F2E090426 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Lead	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AT
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Magnesium	ND	1000	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AN
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Manganese	ND	15	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AP
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Nickel	ND	40	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AR
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Selenium	ND	15	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AV
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Silver	ND	10	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AC
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Sodium	ND	1000	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AQ
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Strontium	ND	5	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AW
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Thallium	ND	20	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1AX
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Vanadium	ND	50	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1A0
		Dilution Factor: 1				
		Analysis Time..: 10:02				
Zinc	ND	20	ug/L	SW846 6010C	05/10-05/18/12	MTG1F1A1
		Dilution Factor: 1				
		Analysis Time..: 10:02				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F2E090426 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F2E100000-080 **Prep Batch #...:** 2131080						
Uranium	ND	1	ug/L	SW846 6020A	05/10-05/16/12	MTG1N1AA
		Dilution Factor: 1				
		Analysis Time..: 01:28				
MB Lot-Sample #: F2E160000-017 **Prep Batch #...:** 2137017						
Mercury	ND	0.2	ug/L	SW846 7470A	05/16/12	MTKRW1AA
		Dilution Factor: 1				
		Analysis Time..: 13:15				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2E090426 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F2E100000-078 **Prep Batch #...:** 2131078					
Arsenic	103	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1A2
		Dilution Factor: 1		Analysis Time..: 10:06	
Silver	103	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1A3
		Dilution Factor: 1		Analysis Time..: 10:06	
Aluminum	101	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1A4
		Dilution Factor: 1		Analysis Time..: 10:06	
Barium	102	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1A5
		Dilution Factor: 1		Analysis Time..: 10:06	
Beryllium	103	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1A6
		Dilution Factor: 1		Analysis Time..: 10:06	
Calcium	109	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1A7
		Dilution Factor: 1		Analysis Time..: 10:06	
Cadmium	105	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1A8
		Dilution Factor: 1		Analysis Time..: 10:06	
Cobalt	108	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1A9
		Dilution Factor: 1		Analysis Time..: 10:06	
Chromium	107	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1CA
		Dilution Factor: 1		Analysis Time..: 10:06	
Copper	107	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1CC
		Dilution Factor: 1		Analysis Time..: 10:06	
Iron	104	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1CD
		Dilution Factor: 1		Analysis Time..: 10:06	
Magnesium	102	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1CE
		Dilution Factor: 1		Analysis Time..: 10:06	
Manganese	104	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1CF
		Dilution Factor: 1		Analysis Time..: 10:06	
Sodium	101	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1CG
		Dilution Factor: 1		Analysis Time..: 10:06	

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2E090426 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Nickel	108	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1CH
		Dilution Factor: 1	Analysis Time..: 10:06		
Lead	110	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1CJ
		Dilution Factor: 1	Analysis Time..: 10:06		
Antimony	110	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1CK
		Dilution Factor: 1	Analysis Time..: 10:06		
Selenium	104	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1CL
		Dilution Factor: 1	Analysis Time..: 10:06		
Strontium	103	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1CM
		Dilution Factor: 1	Analysis Time..: 10:06		
Thallium	115	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1CN
		Dilution Factor: 1	Analysis Time..: 10:06		
Vanadium	101	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1CP
		Dilution Factor: 1	Analysis Time..: 10:06		
Zinc	106	(80 - 120)	SW846 6010C	05/10-05/18/12	MTG1F1CQ
		Dilution Factor: 1	Analysis Time..: 10:06		
LCS Lot-Sample#: F2E100000-080		**Prep Batch #...:** 2131080			
Uranium	92	(80 - 120)	SW846 6020A	05/10-05/16/12	MTG1N1AC
		Dilution Factor: 1	Analysis Time..: 01:35		
LCS Lot-Sample#: F2E160000-017		**Prep Batch #...:** 2137017			
Mercury	103	(80 - 120)	SW846 7470A	05/16/12	MTKRW1AC
		Dilution Factor: 1	Analysis Time..: 13:16		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2E090426 **Matrix.....:** WATER
Date Sampled...: 05/07/12 09:05 **Date Received..:** 05/08/12

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F2E090426-001 **Prep Batch #...:** 2131078							
Aluminum	102	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1CA
	103	(80 - 120)	1.1	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1CC
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Antimony	107	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1C8
	111	(80 - 120)	3.7	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1C9
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Arsenic	103	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1A6
	106	(80 - 120)	3.5	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1A7
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Barium	102	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1CD
	103	(80 - 120)	0.18	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1CE
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Beryllium	104	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1CF
	104	(80 - 120)	0.19	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1CG
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Cadmium	102	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1CK
	106	(80 - 120)	3.8	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1CL
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Calcium	58 N	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1CH
	26 N	(80 - 120)	2.6	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1CJ
		Dilution Factor: 10					
		Analysis Time..: 12:58					
Chromium	102	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1CP
	104	(80 - 120)	2.3	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1CQ
		Dilution Factor: 1					
		Analysis Time..: 10:16					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2E090426 **Matrix.....:** WATER
Date Sampled...: 05/07/12 09:05 **Date Received..:** 05/08/12

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Cobalt	100	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1CM
	105	(80 - 120)	4.2	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1CN
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Copper	98	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1CR
	103	(80 - 120)	3.6	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1CT
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Iron	104	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1CU
	105	(80 - 120)	0.95	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1CV
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Lead	100	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1C6
	104	(80 - 120)	3.6	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1C7
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Magnesium	94	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1CW
	100	(80 - 120)	1.4	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1CX
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Manganese	103	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1C0
	104	(80 - 120)	0.85	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1C1
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Nickel	102	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1C4
	106	(80 - 120)	4.5	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1C5
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Selenium	102	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1DA
	106	(80 - 120)	3.2	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1DC
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Silver	101	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1A8
	103	(80 - 120)	1.2	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1A9
		Dilution Factor: 1					
		Analysis Time..: 10:16					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2E090426 **Matrix.....:** WATER
Date Sampled...: 05/07/12 09:05 **Date Received..:** 05/08/12

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Sodium	101	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1C2
	95	(80 - 120)	0.21	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1C3
		Dilution Factor: 10					
		Analysis Time..: 12:58					
Strontium	108	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1DD
	107	(80 - 120)	0.19	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1DE
		Dilution Factor: 10					
		Analysis Time..: 12:58					
Thallium	100	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1DF
	105	(80 - 120)	4.8	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1DG
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Vanadium	102	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1DH
	102	(80 - 120)	0.09	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1DJ
		Dilution Factor: 1					
		Analysis Time..: 10:16					
Zinc	102	(80 - 120)			SW846 6010C	05/10-05/18/12	MTF4W1DK
	107	(80 - 120)	4.1	(0-20)	SW846 6010C	05/10-05/18/12	MTF4W1DL
		Dilution Factor: 1					
		Analysis Time..: 10:16					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2E090426 **Matrix.....:** WATER
Date Sampled...: 05/04/12 10:40 **Date Received..:** 05/07/12

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F2E080406-021 **Prep Batch #...:** 2131080							
Uranium	94	(80 - 120)			SW846 6020A	05/10-05/16/12	MTE811AE
	98	(80 - 120)	3.5	(0-20)	SW846 6020A	05/10-05/16/12	MTE811AF
		Dilution Factor: 1					
		Analysis Time..: 02:42					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (1)

Radiochemistry

Lab Sample ID: F2E090426-001
Work Order: MTF4W
Matrix: WATER

Date Collected: 05/07/12 0905
Date Received: 05/08/12 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2131054	Yld % 92
Uranium 234	1.88		0.30	0.10	0.08	05/11/12	05/14/12
Uranium 235/236	0.084		0.063	0.100	0.058	05/11/12	05/14/12
Uranium 238	1.99		0.31	0.10	0.06	05/11/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (1) (F)

Radiochemistry

Lab Sample ID: F2E090426-002
Work Order: MTF40
Matrix: WATER

Date Collected: 05/07/12 0905
Date Received: 05/08/12 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2131054	Yld % 84
Uranium 234	1.90		0.32	0.10	0.06	05/11/12	05/14/12
Uranium 235/236	0.171		0.092	0.100	0.033	05/11/12	05/14/12
Uranium 238	2.04		0.33	0.10	0.03	05/11/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (2)

Radiochemistry

Lab Sample ID: F2E090426-003
Work Order: MTF41
Matrix: WATER

Date Collected: 05/07/12 0915
Date Received: 05/08/12 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2131054	Yld % 87
Uranium 234	2.34		0.36	0.10	0.05	05/11/12	05/14/12
Uranium 235/236	0.048		0.049	0.100	0.033	05/11/12	05/14/12
Uranium 238	2.00		0.33	0.10	0.06	05/11/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (2) (F)

Radiochemistry

Lab Sample ID: F2E090426-004
Work Order: MTF43
Matrix: WATER

Date Collected: 05/07/12 0915
Date Received: 05/08/12 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2131054	Yld % 81
Uranium 234	2.56		0.39	0.10	0.08	05/11/12	05/14/12
Uranium 235/236	0.22		0.11	0.10	0.03	05/11/12	05/14/12
Uranium 238	2.28		0.36	0.10	0.03	05/11/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (3)

Radiochemistry

Lab Sample ID: F2E090426-005
Work Order: MTF44
Matrix: WATER

Date Collected: 05/07/12 0930
Date Received: 05/08/12 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2131054	Yld % 76
Uranium 234	7.30		0.83	0.10	0.07	05/11/12	05/14/12
Uranium 235/236	0.36		0.14	0.10	0.04	05/11/12	05/14/12
Uranium 238	7.25		0.82	0.10	0.03	05/11/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL STEEL SEEP (3) (F)

Radiochemistry

Lab Sample ID: F2E090426-006
Work Order: MTF46
Matrix: WATER

Date Collected: 05/07/12 0930
Date Received: 05/08/12 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2131054	Yld % 85
Uranium 234	6.88		0.77	0.10	0.06	05/11/12	05/14/12
Uranium 235/236	0.37		0.14	0.10	0.03	05/11/12	05/14/12
Uranium 238	7.44		0.82	0.10	0.03	05/11/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL SURFACE (1)

Radiochemistry

Lab Sample ID: F2E090426-007
Work Order: MTF47
Matrix: WATER

Date Collected: 05/07/12 0945
Date Received: 05/08/12 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2131054	Yld % 81
Uranium 234	0.31		0.12	0.10	0.07	05/11/12	05/14/12
Uranium 235/236	0.008	U	0.029	0.100	0.069	05/11/12	05/14/12
Uranium 238	0.217		0.099	0.100	0.055	05/11/12	05/14/12

NOTE (S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL SURFACE (1) (F)

Radiochemistry

Lab Sample ID: F2E090426-008
Work Order: MTF49
Matrix: WATER

Date Collected: 05/07/12 0945
Date Received: 05/08/12 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2131054	Yld % 79
Uranium 234	0.184		0.096	0.100	0.082	05/11/12	05/14/12
Uranium 235/236	0.002	U	0.031	0.100	0.083	05/11/12	05/14/12
Uranium 238	0.171		0.089	0.100	0.067	05/11/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL SURFACE (2)

Radiochemistry

Lab Sample ID: F2E090426-009
Work Order: MTF5A
Matrix: WATER

Date Collected: 05/07/12 0955
Date Received: 05/08/12 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2131054	Yld % 86
Uranium 234	0.24		0.11	0.10	0.09	05/11/12	05/14/12
Uranium 235/236	0.031	U	0.043	0.100	0.063	05/11/12	05/14/12
Uranium 238	0.221		0.094	0.100	0.026	05/11/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: GUTERL SURFACE (2) (F)

Radiochemistry

Lab Sample ID: F2E090426-010
Work Order: MTF5C
Matrix: WATER

Date Collected: 05/07/12 0955
Date Received: 05/08/12 0915

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2131054	Yld % 78
Uranium 234	0.34		0.13	0.10	0.11	05/11/12	05/14/12
Uranium 235/236	0.016	U	0.041	0.100	0.083	05/11/12	05/14/12
Uranium 238	0.150		0.092	0.100	0.10	05/11/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F2E090426
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L	Batch # 2131054		Yld % 89	F2E100000-054B
Uranium 234	0.006	U	0.015	0.100	0.031	05/11/12	05/14/12
Uranium 235/236	0.0	U	0.0051	0.100	0.016	05/11/12	05/14/12
Uranium 238	0.015		0.017	0.100	0.013	05/11/12	05/14/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample/LCS Duplicate Report

Radiochemistry

Client Lot ID: F2E090426
Matrix: WATER

Parameter		Spike Amount	Result	Total Uncert. (2 σ+/-)	% Yld	% Rec	QC Control Limits	Precision	
Iso URANIUM (LONG CT)	DOE A-01-R MOD		pCi/L	A-01-R MOD			Lab Sample ID F2E100000-054C		
Uranium 234		3.27	3.40	0.39	85	104	(82 - 118)		
	Spk 2	3.27	3.04	0.35	96	93	(82 - 118)	11	%RPD
Uranium 238		3.39	3.59	0.40	85	106	(80 - 121)		
	Spk 2	3.39	3.38	0.38	96	100	(80 - 121)	6	%RPD
		Batch #:	2131054		Analysis Date:		05/14/12		

NOTE(S) F2E090426

Calculations are performed before rounding to avoid round-off error in calculated results

F2E090426

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R79,METS

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2012-05-08

Project: 140415
Guterl Steel
Analytical Due Date: 2012-05-21

PO#: 697886
Report to: Karl VanKeuren
Report Due Date: 2012-05-23

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 0
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	GUTERL STEEL SEEP (1)			2012-05-07 / 905	MTF4W	WATER

SAMPLE COMMENTS:

SE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
SB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
PB	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NI	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
NA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AS	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
FE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CU	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CR	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CO	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CD	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
CA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
AL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BA	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
HG	O8	SW846 7470A	WATER, 7470 Mercury	19	METALS, TOTAL (Method exclusive) - Waters	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MQD	WATER, A-01-R MQD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	GUTERL STEEL SEEP (1) (F)			2012-05-07 / 905	MTF40	WATER

SAMPLE COMMENTS:

MG	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
BE	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
ZN	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
VX	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
TL	I$	SW846 6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		

F2E090426

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R79,METS

Project Manager: LMF
Quote #: 89251 SDG:
Project: 140415 Guterl Steel
PO#: 697886 Report to: Karl VanKeuren
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 0

Date Received: 2012-05-08
Analytical Due Date: 2012-05-21
Report Due Date: 2012-05-23
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium lstead of 200.8

SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
HG	O8	SW846	7470A	WATER, 7470 Mercury	19	METALS, TOTAL (Method exclusive) - Waters	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	GUTERL STEEL SEEP (2)			2012-05-07 / 915	MTF41	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F2E090426

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: **R79,METS**

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guterl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 0

Date Received: 2012-05-08

Analytical Due Date: 2012-05-21

Report Due Date: 2012-05-23

Report Type: D Expanded Deliverable

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
HG	O8	SW846	7470A	WATER, 7470 Mercury	19	METALS, TOTAL (Method exclusive) - Waters	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
4	GUTERL STEEL SEEP (2) (F)			2012-05-07 / 915	MTF43	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F2E090426

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R79,METS

Project Manager: LMF
Quote #: 89251 SDG:
Project: 140415 Guterl Steel
PO#: 697886 Report to: Karl VanKeuren
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 0

Date Received: 2012-05-08
Analytical Due Date: 2012-05-21
Report Due Date: 2012-05-23
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
HG	O8	SW846	7470A	WATER, 7470 Mercury	19	METALS, TOTAL (Method exclusive) - Waters	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
5	GUTERL STEEL SEEP (3)			2012-05-07 / 930	MTF44	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
HG	O8	SW846	7470A	WATER, 7470 Mercury	19	METALS, TOTAL (Method exclusive) - Waters	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chrometography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
6	GUTERL STEEL SEEP (3) (F)			2012-05-07 / 930	MTF46	WATER

SAMPLE COMMENTS:

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R79,METS

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2012-05-08

Project: 140415
Guterl Steel
Analytical Due Date: 2012-05-21

PO#: 697886
Report to: Karl VanKeuren
Report Due Date: 2012-05-23

Client: 522706
Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 0
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
HG	O8	SW846	7470A	WATER, 7470 Mercury	19	METALS, TOTAL (Method exclusive) - Waters	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	GUTERL SURFACE (1)			2012-05-07 / 945	MTF47	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F2E090426

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R79,METS

Project Manager: LMF
Quote #: 89251 SDG:
Date Received: 2012-05-08

Project: 140415
Guterl Steel
Analytical Due Date: 2012-05-21

PO#: 697886
Report to: Karl VanKeuren
Report Due Date: 2012-05-23

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 0
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
HG	O8	SW846	7470A	WATER, 7470 Mercury	19	METALS, TOTAL (Method exclusive) - Waters	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromalography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	GUTERL SURFACE (1) (F)			2012-05-07 / 945	MTF49	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F2E090426

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis

Storage Loc: R79,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guterl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 0

Date Received: 2012-05-08

Analytical Due Date: 2012-05-21

Report Due Date: 2012-05-23

Report Type: D Expanded Deliverable

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium listead of 200.8

CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
HG	O8	SW846	7470A	WATER, 7470 Mercury	19	METALS, TOTAL (Method exclusive) - Waters	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	GUTERL SURFACE (2)			2012-05-07 / 955	MTF5A	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
HG	O8	SW846	7470A	WATER, 7470 Mercury	19	METALS, TOTAL (Method exclusive) - Waters	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	

F2E090426

CLIENT ANALYSIS SUMMARY

TestAmerica St. Louis
Storage Loc: R79,METS

Project Manager: LMF
Quote #: 89251 SDG:
Project: 140415 Guterl Steel
PO#: 697886 Report to: Karl VanKeuren
Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS In LOT: 0

Date Received: 2012-05-08
Analytical Due Date: 2012-05-21
Report Due Date: 2012-05-23
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
10	GUTERL SURFACE (2) (F)			2012-05-07 / 955	MTF5C	WATER

SAMPLE COMMENTS:

MG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
TL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
SB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
PB	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
VX	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NI	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
NA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
MN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
FE	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CU	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CR	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CO	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
BA	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AS	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AL	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
AG	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
ZN	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
CD	I$	SW846	6010C	WATER, 6010C Metals	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
HG	O8	SW846	7470A	WATER, 7470 Mercury	19	METALS, TOTAL (Method exclusive) - Waters	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: C	WRK LOC	06

COL 127

[redacted]

Chain of Custody Record

St Louis

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: USACE	Project Manager: Jeff Hall	Date: 7 May 12	Chain of Custody Number:
Address: 1776 Niagara St	Telephone Number (Area Code)/Fax Number: 716 879 4272	Lab Number:	Page 1 of 1
City: Buffalo; State: NY; Zip Code: 14207	Site Contact:	Lab Contact:	
Project Name and Location (State): Guterl Lockport NY	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Matrix: Aqueous	Matrix: Sed.	Matrix: Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	ISO U	Total U	Metals	Special Instructions/ Conditions of Receipt
Guterl Seep (1)	7 May 12	9:05		X					X				1	1	1	LP, 2X250ml
Guterl Seep (1) (F)	7 May 12	9:05		X					X				1	1	1	
Guterl Seep (2)	7 May 12	9:15		X					X				1	1	1	
Guterl Seep (2) (F)	7 May 12	9:15		X					X				1	1	1	
Guterl Seep (3)	7 May 12	9:30		X					X				1	1	1	
Guterl Seep (3) (F)	7 May 12	9:30		X					X				1	1	1	
Guterl Surface (1)	7 May 12	9:45		X					X				1	1	1	
Guterl Surface (1) (F)	7 May 12	9:45		X					X				1	1	1	
Guterl Surface (2)	7 May 12	9:55		X					X				1	1	1	
Guterl Surface (2) (F)	7 May 12	9:55		X					X				1	1	1	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Standard TAT

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature]	7 May 12	1355	1. Received By: [signature]	5/7/12	1355
2. Relinquished By: [signature]	5/7/12	16:30	2. Received By: [signature]	5/8/12	0915
3. Relinquished By:			3. Received By:		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): 120090426 TestAmerica St. Louis

CUR Form #: 1 2 7

CONDITION UPON RECEIPT FORM

Client: Shaw

Quote No: 89251

COC/RFA No: 192759

Initiated By: BH Date: 5/8/12 Time: 0915

Shipping Information

Shipper: (FedEx) UPS DHL Courier Client Other: _____ Multiple Packages: (Y) N

Shipping # (s):*				Sample Temperature (s):**			
1.	4485 0261 0948	6.		1.	Ambient	6.	
2.		7.		2.		7.	
3.		8.		3.		8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N (N/A)	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N (N/A)	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 5/14/12

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

Table of Contents - LOT # F2H090401-REVISED

COVER PAGE..... 1

CLIENT CHAIN OF CUSTODY..... 5

METALS-WATER-FORMS ONLY..... 67

URANIUM..... 119

- Daily and RunLogs..... 161
- ALPHAVISION JULY 2012..... 173
- ALPHAVISION CALIBRATIONS..... 361

TOTAL # OF PAGES IN PACKAGE..... 672

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

REVISED

PROJECT NO. 140415

Guterl Steel

Lot #: F2H090401

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

September 11, 2012

Case Narrative
LOT NUMBER: F2H090401
Revised

This report contains the analytical results for the 22 samples received under chain of custody by TestAmerica in St. Louis on August 8, 2012. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.2 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

This report is revised to include Uranium 235/236 and Uranium 238 with the Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD) analysis.

Observations/Nonconformances
Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

The following clean-up methods for Organic analyses may have been used on samples in this data set. Specific methods employed are documented on the batch extraction logs.

Method 3600C: Cleanup
Method 3620C: Florisil Cleanup
Method 3630C: Silica Gel Cleanup
Method 3640A: Gel-Permeation Cleanup
Method 3650B: Acid-Base Partition Cleanup
Method 3660B: Sulfur Cleanup
Method 3665A: Sulfuric Acid/Permanganate Cleanup

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)

There sample aliquot was reduced due to insufficient sample. The aliquot for F2H090401-3 was reduced to 100mL due to high solid content in the sample.

The Uranium samples (F2H090401-015, -016, and -022) did not meet the CRDL due to the reduced sample volume. The sample results are acceptable and will be reported for client review.

The MS and MSD recovery is outside the established QC limits. The analyte concentration in the original sample is greater than 4 times the amount spiked, making % recovery information statistically invalid. Method performance is demonstrated by acceptable LCS recovery. Results are provided with this narrative.

The Uranium samples (F2H090401-003, -004 and -007) did not meet the CRDL due to the reduced sample volume. The sample results are acceptable and will be reported for client review.

Affected Samples:

F2H090401 (1): A04DMW713D0004
F2H090401 (2): A04DMW708DD0004
F2H090401 (3): A04BMW704DD0004
F2H090401 (4): A04BMW605D0004
F2H090401 (5): A04BMW260004
F2H090401 (6): A04BMW707DD0004
F2H090401 (7): A04DMW604DD0004
F2H090401 (8): A04DMW709DD004
F2H090401 (9): A04DMW710D004
F2H090401 (10): A04DMW710DD004
F2H090401 (11): DUPLICATE 02
F2H090401 (12): A04DMW713D0004
F2H090401 (13): A04DMW708DD0004
F2H090401 (14): A04BMW704DD0004
F2H090401 (15): A04BMW605D0004
F2H090401 (16): A04BMW260004
F2H090401 (17): A04BMW707DD0004
F2H090401 (18): A04DMW604D0004
F2H090401 (19): A04DMW709DD004
F2H090401 (20): A04DMW710D004
F2H090401 (21): A04DMW710DD004
F2H090401 (22): DUPLICATE 02

There were no other nonconformances or observations noted with any analysis on this lot.

F2H090401 CLIENT ANALYSIS SUMMARY

Storage Loc: R66-68,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Date Received: 2012-08-08

Project: 140415 | Guterl Steel

Analytical Due Date: 2012-08-22

PO#: 697886 | Report to: Karl VanKeuren

Report Due Date: 2012-08-22

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: D Expanded Deliverable

#SMPS in LOT: 22

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
1	A04DMW713D0004			2012-08-03 / 1340	MV2Q3	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
2	A04DMW708DD0004			2012-08-03 / 1520	MV2Q4	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
3	A04BMW704DD0004			2012-08-06 / 920	MV2Q5	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
4	A04BMW605D0004			2012-08-06 / 1005	MV2Q6	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
5	A04BMW260004			2012-08-06 / 1145	MV2Q7	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
6	A04BMW707DD0004			2012-08-06 / 1225	MV2Q8	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

F2H090401 CLIENT ANALYSIS SUMMARY

Storage Loc: R66-68,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guterl Steel

PO#: 697886 | Report to: Karl VanKeuren

Client: 522706 | Shaw Environmental & Infrastructure Inc

#SMPS in LOT: 22

Date Received: 2012-08-08

Analytical Due Date: 2012-08-22

Report Due Date: 2012-08-22

Report Type: D Expanded Deliverable

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	A04DMW604DD0004			2012-08-06 / 0	MV2Q9	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06
D	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06
S	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
S	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	A04DMW709DD004			2012-08-06 / 1520	MV2RA	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	A04DMW710D004			2012-08-06 / 1545	MV2RC	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
10	A04DMW710DD004			2012-08-06 / 1555	MV2RD	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
11	DUPLICATE 02			2012-08-06 / 0	MV2RL	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I

F2H090401 CLIENT ANALYSIS SUMMARY

Storage Loc: R66-68,METS

Project Manager: LMF Quote #: 89251 SDG:

Date Received: 2012-08-08

Analytical Due Date: 2012-08-22

Project: 140415 Guterl Steel

Report Due Date: 2012-08-22

PO#: 697886 Report to: Karl VanKeuren

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: D Expanded Deliverable

#SMPS in LOT: 22 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
12	A04DMW713D0004			2012-08-03 / 1340	MV2RN	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
13	A04DMW708DD0004			2012-08-03 / 1520	MV2RP	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
14	A04BMW704DD0004			2012-08-06 / 920	MV2RQ	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
15	A04BMW605D0004			2012-08-06 / 1005	MV2RR	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
16	A04BMW260004			2012-08-06 / 1145	MV2RT	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
17	A04BMW707DD0004			2012-08-06 / 1225	MV2RV	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
18	A04DMW604D0004			2012-08-06 / 0	MV2RW	WATER

SAMPLE COMMENTS:

	UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
D	UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06

F2H090401 CLIENT ANALYSIS SUMMARY

Storage Loc: R66-68,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Date Received: 2012-08-08

Project: 140415 | Guterl Steel

Analytical Due Date: 2012-08-22

PO#: 697886 | Report to: Karl VanKeuren

Report Due Date: 2012-08-22

Client: 522706 | Shaw Environmental & Infrastructure Inc

Report Type: D Expanded Deliverable

#SMPS in LOT: 22 | EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

S	UX	I&	SW846	6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
19	A04DMW709DD004			2012-08-06 / 1520	MV2RX	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
20	A04DMW710D004			2012-08-06 / 1545	MV2R1	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
21	A04DMW710DD004			2012-08-06 / 1555	MV2R2	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
22	DUPLICATE 02			2012-08-06 / 0	MV2R4	WATER

SAMPLE COMMENTS:

UX	I&	SW846	6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

[redacted]

Chain of Custody Record

cur 28

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

COC No. 20

Client	Project Manager	Date	Chain of Custody Number
SHAW ENVIRONMENTAL & INFRASTRUCTURE	KARL VAN KEUREN, PG, PMP	08/06/2012	191677
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	Page 1 of 2
5050 SECTION AVENUE	(513) 782-4745/(513) 782-4807		

City	State	Zip Code	Site Contact	Lab Contact
CINCINNATI	OH	45212	KEVIN CRONIN	LYNN FUSSNER

Project Name and Location (State): FORMER GUTERL SPECIALTY STEEL FUSRAP

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Analysis (Attach list if more space is needed): TOTAL U 250P; TOTAL U (FILTERED) 250P; ISOTOPIC U LP; ISOTOPIC U (FILTERED) LP

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date KC	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TOTAL U 250P	TOTAL U (FILTERED) 250P	ISOTOPIC U LP	ISOTOPIC U (FILTERED) LP	Special Instructions/ Conditions of Receipt
~~A04DMW710D 0004~~	~~8/3/12~~	~~1045~~		X					X				X	X	X	X	KC 8/6/12
~~A04DMW710DD 0004~~		~~1145~~															KC 8/6/12
A04DMW713D 0004	08/03/12	1340		X					X				X	X	X	X	
A04DMW708DD 0004		1520															
A04BMW704DD 0004	8/6/12	0920															
A04BMW605D 0004		1005															
A04BMW26 0004		1145															
A04BMW707DD 0004		1225															2-1l + 1-250ml only
A04DMW604D004 0004 on label																	
DUPLICATE 02		—															
A04DMW604D004 MS	3xLP	for T.				3x250P											
A04DMW604D004 MSD		F.H.				3x250P											

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STANDARD

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature]	8/7/12	0940	1. Received By: [signature]	8/7/12	09:40
2. Relinquished By: [signature]	8/7/12	12:30	2. Received By: [signature] TABLO	8-7-12	12:30
3. Relinquished By: [signature] TABLO	8-7-12	17:15	3. Received By: [signature]	8.8.12	0930

Comments: 3.7, 2.9 #3

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

LOT UF2H090401-REV

9 of 672

TestAmerica St. Louis

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CoC No. 21

TAL-4124 (1007)

LOT # F2H090401-REV

Client	Project Manager	Date	Chain of Custody Number
SHAW ENVIRONMENTAL & INFRASTRUCTURE	KARL VANKUREN PCI PMP	08/06/2012	190296
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 2 of 2**
5050 SECTION AVENUE	(513) 782-4745 / (513) 782-4807		
City	**State**	**Zip Code**	**Site Contact**	**Lab Contact**
CINCINNATI	OH	45212	KEVIN CRONIN	LYNN FUSSNER
Project Name and Location (State)	**Carrier/Waybill Number**
FORMER GUTERL SPECIALTY STEEL FUSRAP	
Contract/Purchase Order/Quote No.	

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: TOTAL U	TOTAL U (FILTERED)	ISOTOPIC U (FILTERED)	ISOTOPIC U
A04DMW709DD004	08/06/12	1520		X					X				X	X	X	X
A04DMW710D004	↓	1545		X					X				X	X	X	X
A04DMW710DD004		1555		X					X				X	X	X	X

Special Instructions/ Conditions of Receipt

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

		Date	Time
1. Relinquished By		8/7/12	0940
2. Relinquished By		8/7/12	12:30
3. Relinquished By	TA BLO	8-7-12	17:15
1. Received By		8/8/12	0940
2. Received By	TA BLO	8-7-12	12:30
3. Received By		8.8.12	0930

Comments

3.7, 2.9#3

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica St. Louis

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F2H090401
F2H080458
F2H090401

CUR Form #: 2 8 5

SN 8.8.12

CONDITION UPON RECEIPT FORM

Client: Shaw/TA Buffalo

Quote No: 89251

COC/RFA No: 191677, 190294, 480-5044.1

Initiated By: SN Date: 8.8.12 Time: 0930

Shipping Information

Shipper: FedEx UPS DHL Courier Client Other: _____ Multiple Packages: Y N

Shipping # (s):*		Sample Temperature (s):**	
1. 4485 0261 9257	6.	1. ambient	6.
2. 9246	7.	2. ↓	7.
3.	8.	3.	8.
4.	9.	4.	9.
5.	10.	5.	10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	Y N	Are there custody seals present on the cooler?	8.	Y N	Are there custody seals present on bottles?
2.	Y N N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N N/A	Do custody seals on bottles appear to be tampered with?
3.	Y N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	Y N	Sample received with Chain of Custody?	11.	Y N N/A	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	Y N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	Y N	Sample received in proper containers?
6.	Y N	Was sample received broken?	13.	Y N N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	Y N	Is sample volume sufficient for analysis?	14.	Y N N/A	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

604D004 on C-O-C is 604D0004 on one bottle; an MS for that sample is labeled A04DMW004D0004 MS but date/time are the same.

Did not recv'd. A04BMW702DD0004 total U bottle
↓ ↓ 704 ↓ ↓ had pH of 7.
Per LF preserved w/HNO3 lot K26024 to correct all bottles, also for 480-23448-1.

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 8/13/12

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004 rev13, REVISED 05/27/11 \\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin-0004 CUR.doc

METHODS SUMMARY

F2H090401

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F2H090401

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MV2Q3	001	A04DMW713D0004	08/03/12	13:40
MV2Q4	002	A04DMW708DD0004	08/03/12	15:20
MV2Q5	003	A04BMW704DD0004	08/06/12	09:20
MV2Q6	004	A04BMW605D0004	08/06/12	10:05
MV2Q7	005	A04BMW260004	08/06/12	11:45
MV2Q8	006	A04BMW707DD0004	08/06/12	12:25
MV2Q9	007	A04DMW604DD0004	08/06/12	
MV2RA	008	A04DMW709DD004	08/06/12	15:20
MV2RC	009	A04DMW710D004	08/06/12	15:45
MV2RD	010	A04DMW710DD004	08/06/12	15:55
MV2RL	011	DUPLICATE 02	08/06/12	
MV2RN	012	A04DMW713D0004	08/03/12	13:40
MV2RP	013	A04DMW708DD0004	08/03/12	15:20
MV2RQ	014	A04BMW704DD0004	08/06/12	09:20
MV2RR	015	A04BMW605D0004	08/06/12	10:05
MV2RT	016	A04BMW260004	08/06/12	11:45
MV2RV	017	A04BMW707DD0004	08/06/12	12:25
MV2RW	018	A04DMW604D0004	08/06/12	
MV2RX	019	A04DMW709DD004	08/06/12	15:20
MV2R1	020	A04DMW710D004	08/06/12	15:45
MV2R2	021	A04DMW710DD004	08/06/12	15:55
MV2R4	022	DUPLICATE 02	08/06/12	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0004

TOTAL Metals

Lot-Sample #...: F2H090401-001 **Matrix.....:** WATER
Date Sampled...: 08/03/12 13:40 **Date Received..:** 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223062						
Uranium	ND	1	ug/L	SW846 6020A	08/10-08/16/12	MV2Q31AA
		Dilution Factor: 1		Analysis Time..: 21:27		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0004

TOTAL Metals

Lot-Sample #...: F2H090401-002 Matrix.....: WATER
Date Sampled...: 08/03/12 15:20 Date Received..: 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223062						
Uranium	20.2	1	ug/L	SW846 6020A	08/10-08/16/12	MV2Q41AA
		Dilution Factor: 1		Analysis Time..: 21:34		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW704DD0004

TOTAL Metals

Lot-Sample #...: F2H090401-003 Matrix.....: WATER
Date Sampled...: 08/06/12 09:20 Date Received..: 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223062						
Uranium	102	1	ug/L	SW846 6020A	08/10-08/16/12	MV2Q51AA
		Dilution Factor: 1		Analysis Time..: 21:40		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0004

TOTAL Metals

Lot-Sample #...: F2H090401-004 Matrix.....: WATER
Date Sampled...: 08/06/12 10:05 Date Received..: 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223062						
Uranium	259	1	ug/L	SW846 6020A	08/10-08/16/12	MV2Q61AA
		Dilution Factor: 1		Analysis Time..: 21:47		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260004

TOTAL Metals

Lot-Sample #...: F2H090401-005 Matrix.....: WATER
Date Sampled...: 08/06/12 11:45 Date Received..: 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223062						
Uranium	155	1	ug/L	SW846 6020A	08/10-08/16/12	MV2Q71AA
		Dilution Factor: 1		Analysis Time..: 21:54		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0004

TOTAL Metals

Lot-Sample #...: F2H090401-006 Matrix.....: WATER
Date Sampled...: 08/06/12 12:25 Date Received..: 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223062						
Uranium	11.2	1	ug/L	SW846 6020A	08/10-08/16/12	MV2Q81AA
		Dilution Factor: 1		Analysis Time..: 22:00		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604DD0004

TOTAL Metals

Lot-Sample #...: F2H090401-007 Matrix.....: WATER
Date Sampled...: 08/06/12 Date Received..: 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223062						
Uranium	108	1	ug/L	SW846 6020A	08/10-08/16/12	MV2Q91AA
		Dilution Factor: 1		Analysis Time..: 22:07		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD004

TOTAL Metals

Lot-Sample #...: F2H090401-008 Matrix.....: WATER
Date Sampled...: 08/06/12 15:20 Date Received..: 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223062						
Uranium	82.7	1	ug/L	SW846 6020A	08/10-08/16/12	MV2RA1AA
		Dilution Factor: 1		Analysis Time..: 22:54		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D004

TOTAL Metals

Lot-Sample #...: F2H090401-009 **Matrix.....:** WATER
Date Sampled...: 08/06/12 15:45 **Date Received..:** 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223062						
Uranium	**53.8**	1	**ug/L**	**SW846 6020A**	**08/10-08/16/12**	**MV2RC1AA**
		Dilution Factor: 1		Analysis Time..: 23:01		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD004

TOTAL Metals

Lot-Sample #...: F2H090401-010 Matrix.....: WATER
Date Sampled...: 08/06/12 15:55 Date Received..: 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223062						
Uranium	29.6	1	ug/L	SW846 6020A	08/10-08/16/12	MV2RD1AA
		Dilution Factor: 1		Analysis Time..: 23:08		

Shaw Environmental & Infrastructure Inc

Client Sample ID: DUPLICATE 02

TOTAL Metals

Lot-Sample #...: F2H090401-011 Matrix.....: WATER
Date Sampled...: 08/06/12 Date Received..: 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223062						
Uranium	254	1	ug/L	SW846 6020A	08/10-08/16/12	MV2RL1AA
		Dilution Factor: 1		Analysis Time..: 23:14		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0004

DISSOLVED Metals

Lot-Sample #...: F2H090401-012 **Matrix.....:** WATER
Date Sampled...: 08/03/12 13:40 **Date Received..:** 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223063						
Uranium	ND	1	ug/L	SW846 6020A	08/10-08/16/12	MV2RN1AC
		Dilution Factor: 1		Analysis Time..: 23:48		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0004

DISSOLVED Metals

Lot-Sample #...: F2H090401-013 Matrix.....: WATER
Date Sampled...: 08/03/12 15:20 Date Received..: 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223063						
Uranium	19.3	1	ug/L	SW846 6020A	08/10-08/16/12	MV2RP1AC
		Dilution Factor: 1		Analysis Time..: 23:55		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW704DD0004

DISSOLVED Metals

Lot-Sample #...: F2H090401-014 **Matrix.....:** WATER
Date Sampled...: 08/06/12 09:20 **Date Received..:** 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223063						
Uranium	68.1	1	ug/L	SW846 6020A	08/10-08/17/12	MV2RQ1AC
		Dilution Factor: 1		Analysis Time..: 00:02		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0004

DISSOLVED Metals

Lot-Sample #...: F2H090401-015 **Matrix.....:** WATER
Date Sampled...: 08/06/12 10:05 **Date Received..:** 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223063						
Uranium	**251**	1	**ug/L**	**SW846 6020A**	**08/10-08/17/12**	**MV2RR1AC**
		Dilution Factor: 1		Analysis Time..: 00:08		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260004

DISSOLVED Metals

Lot-Sample #...: F2H090401-016 Matrix.....: WATER
Date Sampled...: 08/06/12 11:45 Date Received..: 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223063						
Uranium	147	1	ug/L	SW846 6020A	08/10-08/17/12	MV2RT1AC
		Dilution Factor: 1		Analysis Time..: 00:15		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0004

DISSOLVED Metals

Lot-Sample #...: F2H090401-017 Matrix.....: WATER
Date Sampled...: 08/06/12 12:25 Date Received..: 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223063						
Uranium	8.3	1	ug/L	SW846 6020A	08/10-08/17/12	MV2RV1AC
		Dilution Factor: 1		Analysis Time..: 00:22		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604D0004

DISSOLVED Metals

Lot-Sample #...: F2H090401-018 Matrix.....: WATER
Date Sampled...: 08/06/12 Date Received..: 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223063						
Uranium	105	1	ug/L	SW846 6020A	08/10-08/17/12	MV2RW1AE
		Dilution Factor: 1		Analysis Time..: 00:29		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD004

DISSOLVED Metals

Lot-Sample #...: F2H090401-019 **Matrix.....:** WATER
Date Sampled...: 08/06/12 15:20 **Date Received..:** 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223063						
Uranium	**84.3**	**1**	**ug/L**	**SW846 6020A**	**08/10-08/17/12**	**MV2RX1AC**
		Dilution Factor: 1		Analysis Time..: 01:15		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D004

DISSOLVED Metals

Lot-Sample #...: F2H090401-020 **Matrix.....:** WATER
Date Sampled...: 08/06/12 15:45 **Date Received..:** 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223063						
Uranium	**52.3**	1	**ug/L**	**SW846 6020A**	**08/10-08/17/12**	**MV2R11AC**
		Dilution Factor: 1		Analysis Time..: 01:22		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD004

DISSOLVED Metals

Lot-Sample #...: F2H090401-021 Matrix.....: WATER
Date Sampled...: 08/06/12 15:55 Date Received..: 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223063						
Uranium	28.9	1	ug/L	SW846 6020A	08/10-08/17/12	MV2R21AC
		Dilution Factor: 1		Analysis Time..: 01:29		

Shaw Environmental & Infrastructure Inc

Client Sample ID: DUPLICATE 02

DISSOLVED Metals

Lot-Sample #...: F2H090401-022 Matrix.....: WATER
Date Sampled...: 08/06/12 Date Received..: 08/08/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2223063						
Uranium	251	1	ug/L	SW846 6020A	08/10-08/17/12	MV2R41AC
		Dilution Factor: 1		Analysis Time..: 01:36		

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F2H090401 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F2H100000-062 **Prep Batch #...:** 2223062						
Uranium	ND	1	ug/L	SW846 6020A	08/10-08/16/12	MV3PG1AA
		Dilution Factor: 1				
		Analysis Time..: 21:13				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

DISSOLVED Metals

Client Lot #...: F2H090401 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F2H100000-063 **Prep Batch #...:** 2223063						
Uranium	ND	1	ug/L	SW846 6020A	08/10-08/16/12	MV3PJ1AA
		Dilution Factor: 1				
		Analysis Time..: 23:35				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2H090401 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F2H100000-062 **Prep Batch #...:** 2223062					
Uranium	98	(80 - 120)	SW846 6020A	08/10-08/16/12	MV3PG1AC
		Dilution Factor: 1	Analysis Time..: 21:20		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

DISSOLVED Metals

Client Lot #...: F2H090401 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F2H100000-063 **Prep Batch #...:** 2223063					
Uranium	96	(80 - 120)	SW846 6020A	08/10-08/16/12	MV3PJ1AC
		Dilution Factor: 1		Analysis Time..: 23:41	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2H090401 **Matrix.....:** WATER
Date Sampled...: 08/06/12 **Date Received..:** 08/08/12

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F2H090401-007 **Prep Batch #...:** 2223062							
Uranium	98	(80 - 120)			SW846 6020A	08/10-08/16/12	MV2Q91AE
	99	(80 - 120)	1.6	(0-20)	SW846 6020A	08/10-08/16/12	MV2Q91AF
		Dilution Factor: 1					
		Analysis Time..: 22:34					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

DISSOLVED Metals

Client Lot #...: F2H090401 **Matrix.....:** WATER
Date Sampled...: 08/06/12 **Date Received..:** 08/08/12

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F2H090401-018 **Prep Batch #...:** 2223063							
Uranium	97	(80 - 120)			SW846 6020A	08/10-08/17/12	MV2RW1AF
	97	(80 - 120)	0.20	(0-20)	SW846 6020A	08/10-08/17/12	MV2RW1AG
		Dilution Factor: 1					
		Analysis Time..: 00:56					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0004

Radiochemistry

Lab Sample ID: F2H090401-001
Work Order: MV2Q3
Matrix: WATER

Date Collected: 08/03/12 1340
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2226014		Yld % 82
Uranium 234	0.127		0.097	0.100	0.090	08/13/12	08/15/12
Uranium 235/236	0.016	U	0.043	0.100	0.096	08/13/12	08/15/12
Uranium 238	0.093		0.084	0.100	0.089	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0004

Radiochemistry

Lab Sample ID: F2H090401-002
Work Order: MV2Q4
Matrix: WATER

Date Collected: 08/03/12 1520
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2226014	Yld % 83
Uranium 234	7.04		0.91	0.10	0.09	08/13/12	08/15/12
Uranium 235/236	0.40		0.19	0.10	0.06	08/13/12	08/15/12
Uranium 238	7.12		0.92	0.10	0.05	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW704DD0004

Radiochemistry

Lab Sample ID: F2H090401-003
Work Order: MV2Q5
Matrix: WATER

Date Collected: 08/06/12 0920
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 2226014**	**Yld % 85**
Uranium 234	32.7		3.7	0.1	0.2	08/13/12	08/15/12
Uranium 235/236	0.96		0.49	0.10	0.35	08/13/12	08/15/12
Uranium 238	26.1		3.1	0.1	0.4	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0004

Radiochemistry

Lab Sample ID: F2H090401-004
Work Order: MV2Q6
Matrix: WATER

Date Collected: 08/06/12 1005
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2226014	Yld % 46
Uranium 234	85.8		7.6	0.1	0.1	08/13/12	08/15/12
Uranium 235/236	3.75		0.66	0.10	0.06	08/13/12	08/15/12
Uranium 238	82.6		7.3	0.1	0.05	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260004

Radiochemistry

Lab Sample ID: F2H090401-005
Work Order: MV2Q7
Matrix: WATER

Date Collected: 08/06/12 1145
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2226014	Yld % 63
Uranium 234	49.0		4.4	0.1	0.03	08/13/12	08/15/12
Uranium 235/236	2.48		0.45	0.10	0.08	08/13/12	08/15/12
Uranium 238	47.6		4.3	0.1	0.07	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0004

Radiochemistry

Lab Sample ID: F2H090401-006
Work Order: MV2Q8
Matrix: WATER

Date Collected: 08/06/12 1225
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2226014		Yld % 85
Uranium 234	14.8		1.4	0.1	0.09	08/13/12	08/15/12
Uranium 235/236	0.108		0.073	0.100	0.059	08/13/12	08/15/12
Uranium 238	3.55		0.47	0.10	0.10	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604DD0004

Radiochemistry

Lab Sample ID: F2H090401-007
Work Order: MV2Q9
Matrix: WATER

Date Collected: 08/06/12 0000
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2226014	Yld % 69
Uranium 234	35.1		3.2	0.1	0.1	08/13/12	08/15/12
Uranium 235/236	1.50		0.32	0.10	0.04	08/13/12	08/15/12
Uranium 238	35.2		3.2	0.1	0.07	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD004

Radiochemistry

Lab Sample ID: F2H090401-008
Work Order: MV2RA
Matrix: WATER

Date Collected: 08/06/12 1520
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 2226014		Yld % 75
Uranium 234	28.4		2.8	0.1	0.1	08/13/12	08/15/12
Uranium 235/236	1.83		0.44	0.10	0.10	08/13/12	08/15/12
Uranium 238	28.6		2.8	0.1	0.1	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D004

Radiochemistry

Lab Sample ID: F2H090401-009
Work Order: MV2RC
Matrix: WATER

Date Collected: 08/06/12 1545
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2226014	Yld % 81
Uranium 234	18.8		1.9	0.1	0.1	08/13/12	08/15/12
Uranium 235/236	1.12		0.32	0.10	0.06	08/13/12	08/15/12
Uranium 238	18.2		1.9	0.1	0.09	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD004

Radiochemistry

Lab Sample ID: F2H090401-010
Work Order: MV2RD
Matrix: WATER

Date Collected: 08/06/12 1555
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2226014	Yld % 84
Uranium 234	8.79		0.94	0.10	0.08	08/13/12	08/15/12
Uranium 235/236	0.59		0.18	0.10	0.09	08/13/12	08/15/12
Uranium 238	9.6		1.0	0.1	0.08	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: DUPLICATE 02

Radiochemistry

Lab Sample ID: F2H090401-011
Work Order: MV2RL
Matrix: WATER

Date Collected: 08/06/12 0000
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2226014	Yld % 51
Uranium 234	80.5		7.1	0.1	0.1	08/13/12	08/15/12
Uranium 235/236	3.88		0.65	0.10	0.06	08/13/12	08/15/12
Uranium 238	78.7		7.0	0.1	0.09	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0004

Radiochemistry

Lab Sample ID: F2H090401-012
Work Order: MV2RN
Matrix: WATER

Date Collected: 08/03/12 1340
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2226015		Yld % 75
Uranium 234	0.133		0.098	0.100	0.078	08/13/12	08/15/12
Uranium 235/236	0.0	U	0.011	0.100	0.058	08/13/12	08/15/12
Uranium 238	0.034	U	0.062	0.100	0.11	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0004

Radiochemistry

Lab Sample ID: F2H090401-013
Work Order: MV2RP
Matrix: WATER

Date Collected: 08/03/12 1520
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2226015	Yld % 78
Uranium 234	7.26		0.94	0.10	0.10	08/13/12	08/15/12
Uranium 235/236	0.27		0.16	0.10	0.11	08/13/12	08/15/12
Uranium 238	6.68		0.88	0.10	0.09	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW704DD0004

Radiochemistry

Lab Sample ID: F2H090401-014
Work Order: MV2RQ
Matrix: WATER

Date Collected: 08/06/12 0920
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2226015	Yld % 73
Uranium 234	27.6		2.7	0.1	0.08	08/13/12	08/15/12
Uranium 235/236	0.81		0.28	0.10	0.06	08/13/12	08/15/12
Uranium 238	22.3		2.3	0.1	0.08	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0004

Radiochemistry

Lab Sample ID: F2H090401-015
Work Order: MV2RR
Matrix: WATER

Date Collected: 08/06/12 1005
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2226015		Yld % 47
Uranium 234	78.7		7.0	0.1	0.1	08/13/12	08/15/12
Uranium 235/236	3.67		0.63	0.10	0.05	08/13/12	08/15/12
Uranium 238	77.5		6.9	0.1	0.1	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260004

Radiochemistry

Lab Sample ID: F2H090401-016
Work Order: MV2RT
Matrix: WATER

Date Collected: 08/06/12 1145
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2226015	Yld % 64
Uranium 234	46.6		4.2	0.1	0.1	08/13/12	08/15/12
Uranium 235/236	1.87		0.38	0.10	0.08	08/13/12	08/15/12
Uranium 238	46.3		4.2	0.1	0.09	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0004

Radiochemistry

Lab Sample ID: F2H090401-017
Work Order: MV2RV
Matrix: WATER

Date Collected: 08/06/12 1225
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2226015	Yld % 92
Uranium 234	9.0		1.1	0.1	0.08	08/13/12	08/15/12
Uranium 235/236	0.129		0.098	0.100	0.050	08/13/12	08/15/12
Uranium 238	2.73		0.46	0.10	0.09	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604D0004

Radiochemistry

Lab Sample ID: F2H090401-018
Work Order: MV2RW
Matrix: WATER

Date Collected: 08/06/12 0000
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2226015	Yld % 75
Uranium 234	34.5		3.3	0.1	0.1	08/13/12	08/15/12
Uranium 235/236	1.57		0.40	0.10	0.10	08/13/12	08/15/12
Uranium 238	33.5		3.2	0.1	0.1	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD004

Radiochemistry

Lab Sample ID: F2H090401-019
Work Order: MV2RX
Matrix: WATER

Date Collected: 08/06/12 1520
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 2226015		Yld % 72
Uranium 234	28.7		2.8	0.1	0.09	08/13/12	08/15/12
Uranium 235/236	1.66		0.43	0.10	0.11	08/13/12	08/15/12
Uranium 238	29.4		2.9	0.1	0.1	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D004

Radiochemistry

Lab Sample ID: F2H090401-020
Work Order: MV2R1
Matrix: WATER

Date Collected: 08/06/12 1545
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2226015	Yld % 73
Uranium 234	19.9		1.9	0.1	0.1	08/13/12	08/15/12
Uranium 235/236	1.08		0.27	0.10	0.15	08/13/12	08/15/12
Uranium 238	20.0		1.9	0.1	0.09	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD004

Radiochemistry

Lab Sample ID: F2H090401-021
Work Order: MV2R2
Matrix: WATER

Date Collected: 08/06/12 1555
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2226015		Yld % 81
Uranium 234	9.28		0.999	0.100	0.098	08/13/12	08/15/12
Uranium 235/236	0.43		0.15	0.10	0.04	08/13/12	08/15/12
Uranium 238	9.5		1.0	0.1	0.05	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: DUPLICATE 02

Radiochemistry

Lab Sample ID: F2H090401-022
Work Order: MV2R4
Matrix: WATER

Date Collected: 08/06/12 0000
Date Received: 08/08/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2226015		Yld % 43
Uranium 234	91.3		8.1	0.1	0.1	08/13/12	08/15/12
Uranium 235/236	4.58		0.77	0.10	0.12	08/13/12	08/15/12
Uranium 238	89.8		8.0	0.1	0.1	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F2H090401
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Lab Sample ID / Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**Batch # 2226014**		**Yld % 93**	**F2H130000-014B**
Uranium 234	0.013	U	0.022	0.100	0.035	08/13/12	08/15/12
Uranium 235/236	-0.0024	U	0.0048	0.100	0.043	08/13/12	08/15/12
Uranium 238	0.0	U	0.0038	0.100	0.021	08/13/12	08/15/12
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**Batch # 2226015**		**Yld % 87**	**F2H130000-015B**
Uranium 234	0.006	U	0.016	0.100	0.035	08/13/12	08/15/12
Uranium 235/236	0.0	U	0.0048	0.100	0.026	08/13/12	08/15/12
Uranium 238	0.006	U	0.016	0.100	0.035	08/13/12	08/15/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F2H090401
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ +/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F2H130000-014C**
Uranium 234	3.27	3.59	0.45	0.02	90	110	(84 - 120)
Uranium 238	3.39	3.38	0.43	0.04	90	100	(83 - 121)
	Batch #:	2226014		Analysis Date:	08/15/12		
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F2H130000-015C**
Uranium 234	3.27	3.29	0.42	0.04	92	101	(84 - 120)
Uranium 235/236	0.0	0.0	0.0	0.0	0.0	****	(-)
Uranium 238	3.39	3.24	0.42	0.04	92	95	(83 - 121)
	Batch #:	2226015		Analysis Date:	08/15/12		

NOTE(S)

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

MATRIX SPIKE/MATRIX SPIKE DUPLICATE REPORT

Radiochemistry

Client Lot ID: F2H090401
Matrix: WATER

Date Sampled: 08/06/12 0000
Date Received: 08/08/12 0930

Parameter		Spike Amount	SPIKE Result		Total Uncert. (2 σ+/-)	Spike Yld	SAMPLE Result	Total Uncert. (2σ +/-)	QC Sample ID % Yld	%Rec	QC Control Limits
Iso URANIUM (LONG CT) DOE A					**pCi/L**		**A-01-R MOD**			**F2H090401-007**	
Uranium 234		6.53	38.4	a	3.5	71	35.1	3.2	69	50	a (65 - 146)
	Spk2	6.53	43.9		4.0	64	35.1	3.2	69	135	(65 - 146)
									Precision:	13	%RPD
Uranium 238		6.78	38.7	a	3.5	71	35.2	3.2	69	51	a (68 - 143)
	Spk2	6.78	43.2		3.9	64	35.2	3.2	69	118	(68 - 143)
									Precision:	11	%RPD
			Batch #:	2226014			Analysis date:	08/15/12			
Iso URANIUM (LONG CT) DOE A					**pCi/L**		**A-01-R MOD**			**F2H090401-018**	
Uranium 234		6.53	40.4		3.7	71	34.5	3.3	75	90	(65 - 146)
	Spk2	6.53	39.1		3.6	71	34.5	3.3	75	71	(65 - 146)
									Precision:	3	%RPD
Uranium 238		6.78	40.9		3.7	71	33.5	3.2	75	109	(68 - 143)
	Spk2	6.78	39.4		3.6	71	33.5	3.2	75	88	(68 - 143)
									Precision:	4	%RPD
			Batch #:	2226015			Analysis date:	08/15/12			

NOTE(S)

Data are incomplete without the case narrative.

Calculations are performed before rounding to avoid round-off error in calculated results

a Spiked analyte outside of stated QC limits.

METALS SAMPLE AND QC SUMMARY RESULTS

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2Q3 **Client ID:** A04DMW713D0004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	0.23	U	1	ICPMS	8/16/2012	21:27

Comments: Lot #: F2H090401 Sample #: 1

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2Q4 **Client ID:** A04DMW708DD0004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	20.2		1	ICPMS	8/16/2012	21:34

Comments: Lot #: F2H090401 Sample #: 2

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2Q5 **Client ID:** A04BMW704DD0004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	102		1	ICPMS	8/16/2012	21:40

Comments: Lot #: F2H090401 Sample #: 3

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2Q6 **Client ID:** A04BMW605D0004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	259		1	ICPMS	8/16/2012	21:47

Comments: Lot #: F2H090401 Sample #: 4

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2Q7 **Client ID:** A04BMW260004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	155		1	ICPMS	8/16/2012	21:54

Comments: Lot #: F2H090401 Sample #: 5

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2Q8 **Client ID:** A04BMW707DD0004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	11.2		1	ICPMS	8/16/2012	22:00

Comments: Lot #: F2H090401 Sample #: 6

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2Q9 **Client ID:** A04DMW604DD0004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	108		1	ICPMS	8/16/2012	22:07

Comments: Lot #: F2H090401 Sample #: 7

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2RA **Client ID:** A04DMW709DD004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	**238**	**0.23**	**1.0**	**82.7**		**1**	**ICPMS**	**8/16/2012**	**22:54**

Comments: Lot #: F2H090401 Sample #: 8

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2RC **Client ID:** A04DMW710D004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	53.8		1	ICPMS	8/16/2012	23:01

Comments: Lot #: F2H090401 Sample #: 9

6.05.2

U Result is less than the IDL
B Result is between IDL and RL
E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2RD **Client ID:** A04DMW710DD004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	**238**	**0.23**	**1.0**	**29.6**		**1**	**ICPMS**	**8/16/2012**	**23:08**

Comments: Lot #: F2H090401 Sample #: 10

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2RL **Client ID:** DUPLICATE 02

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	254		1	ICPMS	8/16/2012	23:14

Comments: Lot #: F2H090401 Sample #: 11

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2R1 **Client ID:** A04DMW710D004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	**238**	**0.23**	**1.0**	**52.3**		1	**ICPMS**	**8/17/2012**	**1:22**

Comments: Lot #: F2H090401 Sample #: 20

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2R2 **Client ID:** A04DMW710DD004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	28.9		1	ICPMS	8/17/2012	1:29

Comments: Lot #: F2H090401 Sample #: 21

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2R4 **Client ID:** DUPLICATE 02

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	251		1	ICPMS	8/17/2012	1:36

Comments: Lot #: F2H090401 Sample #: 22

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2RN **Client ID:** A04DMW713D0004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	0.23	U	1	ICPMS	8/16/2012	23:48

Comments: Lot #: F2H090401 Sample #: 12

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2RP **Client ID:** A04DMW708DD0004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	19.3		1	ICPMS	8/16/2012	23:55

Comments: Lot #: F2H090401 Sample #: 13

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2RQ **Client ID:** A04BMW704DD0004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	**238**	**0.23**	**1.0**	**68.1**		**1**	**ICPMS**	**8/17/2012**	**0:02**

Comments: Lot #: F2H090401 Sample #: 14

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2RR **Client ID:** A04BMW605D0004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	251		1	ICPMS	8/17/2012	0:08

Comments: Lot #: F2H090401 Sample #: 15

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2RT **Client ID:** A04BMW260004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	147		1	ICPMS	8/17/2012	0:15

Comments: Lot #: F2H090401 Sample #: 16

6.05.2

U Result is less than the IDL
B Result is between IDL and RL
E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2RV **Client ID:** A04BMW707DD0004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	8.3		1	ICPMS	8/17/2012	0:22

Comments: Lot #: F2H090401 Sample #: 17

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2RW **Client ID:** A04DMW604D0004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	105		1	ICPMS	8/17/2012	0:29

Comments: Lot #: F2H090401 Sample #: 18

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Sample Results **SDG:** Test

Lab Sample ID: MV2RX **Client ID:** A04DMW709DD004

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	84.3		1	ICPMS	8/17/2012	1:15

Comments: Lot #: F2H090401 Sample #: 19

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 1 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Initial Calibration Verification Standard

SDG: Test

Instrument: ICPMS

Units: ug/L

Chart Number: 081612A2.csv

Acceptable Range: 90% - 110%

Standard Source: INORGANIC VENTURES

Standard ID: See Standards Log

Element	WL/ Mass	True Conc	ICV 8/16/2012 18:38 Found	Q	% Rec	Found	Q	% Rec	Found	Q	% Rec	Found	Q	% Rec	Found	Q	% Rec
Uranium	238	100.000	102.596		**102.6**												

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Continuing Calibration Verification **SDG:** Test

Instrument: ICPMS **Units:** ug/L

Chart Number: 081612A2.csv **Acceptable Range:** 90% - 110%

Standard Source: INORGANIC VENTURES **Standard ID:** See Standards Log

Element	WL/ Mass	True Conc	CCV 8/16/2012 19:12			CCV 8/16/2012 20:06			CCV 8/16/2012 21:00			CCV 8/16/2012 22:21			CCV 8/16/2012 23:21		
			Found	Q	% Rec	Found	Q	% Rec	Found	Q	% Rec	Found	Q	% Rec	Found	Q	% Rec
Uranium	238	100.0	100.715		**100.7**	100.045		**100.0**	100.231		**100.2**	96.948		**96.9**	96.424		**96.4**

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Continuing Calibration Verification

SDG: Test

Instrument: ICPMS

Units: ug/L

Chart Number: 081612A2.csv

Acceptable Range: 90% - 110%

Standard Source: INORGANIC VENTURES

Standard ID: See Standards Log

Element	WL/ Mass	True Conc	CCV 8/17/2012 0:42 Found	Q	% Rec	CCV 8/17/2012 1:42 Found	Q	% Rec	Found	Q	% Rec	Found	Q	% Rec	Found	Q	% Rec
Uranium	238	100.0	95.556		**95.6**	94.256		**94.3**									

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Contract Required Detection Limit Standard **SDG:** Test

Instrument: ICPMS **Units:** ug/L

Chart Number: 081612A2.csv **Acceptable Range:** 80% - 120%

Standard Source: Inorganic Ventures **Standard ID:** See Standards Log

Element	WL/ Mass	True Conc	CRI 8/16/2012 18:52 Found	Q	% Rec	Found	Q	% Rec	Found	Q	% Rec	Found	Q	% Rec	Found	Q	% Rec
Uranium	238	1.000	1.000		**100.0**												

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Initial Calibration Blank Results

SDG: Test

Instrument: ICPMS

Units: ug/L

Chart Number: 081612A2.csv

Standard Source: _____

Standard ID: _____

Element	WL/ Mass	Report Limit	ICB 8/16/2012 18:45 Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Uranium	238	1.000	0.23	U								

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

Form 3 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Continuing Calibration Blank Results **SDG:** Test

Instrument: ICPMS **Units:** ug/L

Chart Number: 081612A2.csv

Standard Source: _____ **Standard ID:** _____

Element	WL/ Mass	Report Limit	CCB 8/16/2012 19:19 Found	Q	CCB 8/16/2012 20:13 Found	Q	CCB 8/16/2012 21:07 Found	Q	CCB 8/16/2012 22:27 Found	Q	CCB 8/16/2012 23:28 Found	Q
Uranium	238	1.000	0.23	U	0.23	U	0.23	U	0.23	U	0.23	U

U Result is less than the IDL

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Continuing Calibration Blank Results

SDG: Test

Instrument: ICPMS

Units: ug/L

Chart Number: 081612A2.csv

Standard Source: _____

Standard ID: _____

Element	WL/ Mass	Report Limit	CCB 8/17/2012 0:49 Found	Q	CCB 8/17/2012 1:49 Found	Q	Found	Q	Found	Q	Found	Q
Uranium	238	1.000	0.23	U	0.23	U						

U Result is less than the IDL

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Preparation Blank Results **SDG:** Test

Lab Sample ID: MV3PGB

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	0.23	U	1	ICPMS	8/16/2012	21:13

Comments: Lot #: F2H090401

U Result is less than the IDL

B Result is between IDL and RL

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Preparation Blank Results **SDG:** Test

Lab Sample ID: MV3PJB

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MDL	Report Limit	Conc	Q	DF	Instr	Anal Date	Anal Time
Uranium	238	0.23	1.0	0.23	U	1	ICPMS	8/16/2012	23:35

Comments: Lot #: F2H090401

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Interference Check Standard A **SDG:** Test

Instrument: ICPMS **Units:** ug/L

Chart Number: 081612A2.csv **Acceptable Range:** 80% - 120%

Standard Source: Inorganic Ventures **Standard ID:** See Standards Log

Element	WL/ Mass	Rpting Limit	True Conc	ICSA 8/16/2012 18:59 Found	Q	Found	Q	Found	Q	Found	Q	Found	Q
Uranium	238	1		-0.005	U								

U Result is less than the IDL

B Result is between IDL and RL

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Interference Check Standard AB

SDG: Test

Instrument: ICPMS

Units: ug/L

Chart Number: 081612A2.csv

Acceptable Range: 80% - 120%

Standard Source: Inorganic Ventures

Standard ID: See Standards Log

Element	WL/ Mass	True Conc	ICSAB 8/16/2012 19:05 Found	Q	% Rec	Found	Q	% Rec	Found	Q	% Rec	Found	Q	% Rec	Found	Q	% Rec
Uranium	238	100.000	101.116		**101.1**												

U Result is less than the IDL

B Result is between IDL and RL

N Spike recovery failed

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Matrix Spike Sample Results

SDG: Test

Spike Sample ID: MV2Q9S

Original Sample ID: MV2Q9 **Client ID:** A04DMW604DD0004 S

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MS Conc	Q	Spike Level	% Rec	OS DF	MS DF	Instr	OS Anal Date	OS Anal Time	MS Anal Date	MS Anal Time
Uranium	238	108		1080		1000	97.6	1	1	ICPMS	8/16/2012	22:07	8/16/2012	22:34

Comments: Lot #: F2H090401 Sample #: 7

6.05.2

U Result is less than the IDL
B Result is between IDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
* Duplicate analysis RPD was not within limits

Form 5A Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Matrix Spike Sample Results

SDG: Test

Spike Sample ID: MV2RWS

Original Sample ID: MV2RW **Client ID:** A04DMW604D0004 S

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MS Conc	Q	Spike Level	% Rec	OS DF	MS DF	Instr	OS Anal Date	OS Anal Time	MS Anal Date	MS Anal Time
Uranium	238	105		1080		1000	97.0	1	1	ICPMS	8/17/2012	0:29	8/17/2012	0:56

Comments: Lot #: F2H090401 Sample #: 18

6.05.2

U Result is less than the IDL
B Result is between IDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
* Duplicate analysis RPD was not within limits

Form 5A Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Matrix Spike Duplicate Sample Results **SDG:** Test

Spike Sample ID: MV2Q9D

Original Sample ID: MV2Q9 **Client ID:** A04DMW604DD0004 D

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MSD Conc	Q	Spike Level	% Rec	OS DF	MSD DF	Instr	OS Anal Date	OS Anal Time	MSD Anal Date	MSD Anal Time
Uranium	238	108		1100		1000	99.3	1	1	ICPMS	8/16/2012	22:07	8/16/2012	22:41

Comments: Lot #: F2H090401 Sample #: 7

6.05.2

U Result is less than the IDL
B Result is between IDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
* Duplicate analysis RPD was not within limits

Form 5A Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Matrix Spike Duplicate Sample Results

SDG: Test

Spike Sample ID: MV2RWD

Original Sample ID: MV2RW **Client ID:** A04DMW604D0004 D

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	MSD Conc	Q	Spike Level	% Rec	OS DF	MSD DF	Instr	OS Anal Date	OS Anal Time	MSD Anal Date	MSD Anal Time
Uranium	238	105		1070		1000	96.8	1	1	ICPMS	8/17/2012	0:29	8/17/2012	1:02

Comments: Lot #: F2H090401 Sample #: 18

6.05.2

Form 5A Equivalent

U Result is less than the IDL
B Result is between IDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
* Duplicate analysis RPD was not within limits

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Matrix Spike Duplicate RPD Report **SDG:** Test

Matrix Spike Duplicate Sample ID: MV2Q9D

Matrix Spike Sample ID: MV2Q9S **Client ID:** A04DMW604DD0004 D

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MS Conc	Q	MSD Conc	Q	% RPD	MS DF	MSD DF	Instr	MS Anal Date	MS Anal Time	MSD Anal Date	MSD Anal Time
Uranium	238	1080		1100		1.589	1	1	ICPMS	8/16/2012	22:34	8/16/2012	22:41

Comments: Lot #: F2H090401 Sample #: 7

6.05.2

U Result is less than the IDL
B Result is between IDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
* Duplicate analysis RPD was not within limits

Form 6 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Matrix Spike Duplicate RPD Report **SDG:** Test

Matrix Spike Duplicate Sample ID: MV2RWD

Matrix Spike Sample ID: MV2RWS **Client ID:** A04DMW604D0004 D

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	MS Conc	Q	MSD Conc	Q	% RPD	MS DF	MSD DF	Instr	MS Anal Date	MS Anal Time	MSD Anal Date	MSD Anal Time
Uranium	238	1080		1070		0.203	1	1	ICPMS	8/17/2012	0:56	8/17/2012	1:02

Comments: Lot #: F2H090401 Sample #: 18

6.05.2

U Result is less than the IDL
B Result is between IDL and RL
N Spike recovery failed
NC Percent recovery was not calculated
* Duplicate analysis RPD was not within limits

Form 6 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Laboratory Control Sample Results

SDG: Test

Lab Sample ID: MV3PGC

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	Spike Level	Conc	Percent Recovery	Q	Range	DF	Instr	Anal Date	Anal Time
Uranium	238	1000	985	98.486		80-120	1	ICPMS	8/16/2012	21:20

Comments: Lot #: F2H090401

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Laboratory Control Sample Results **SDG:** Test

Lab Sample ID: MV3PJC

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	Spike Level	Conc	Percent Recovery	Q	Range	DF	Instr	Anal Date	Anal Time
Uranium	238	1000	965	96.513		80-120	1	ICPMS	8/16/2012	23:41

Comments: Lot #: F2H090401

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Serial Dilution RPD Report **SDG:** Test

Serial Dilution Sample ID: MV2Q9V

Original Sample ID: MV2Q9 **Client ID:** A04DMW604DD0004 V

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223062

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	Serial Dilution Conc	Q	Percent Diff	OS DF	Ser Dil DF	Instr	OS Anal Date	OS Anal Time	Ser Dil Anal Date	Ser Dil Anal Time
Uranium	238	108		104		3.938	1	5	ICPMS	8/16/2012	22:07	8/16/2012	22:14

Comments:

6.05.2

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

Form 9 Equivalent

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Serial Dilution RPD Report **SDG:** Test

Serial Dilution Sample ID: MV2RWV

Original Sample ID: MV2RW **Client ID:** A04DMW604D0004 V

Matrix: Water **Units:** ug/L **Prep Date:** 8/10/2012 **Prep Batch:** 2223063

Weight: 50 **Volume:** 50 **Percent Moisture:** NA

Element	WL/ Mass	OS Conc	Q	Serial Dilution Conc	Q	Percent Diff	OS DF	Ser Dil DF	Instr	OS Anal Date	OS Anal Time	Ser Dil Anal Date	Ser Dil Anal Time
Uranium	238	105		107		1.614	1	5	ICPMS	8/17/2012	0:29	8/17/2012	0:35

Comments:

U Result is less than the IDL

B Result is between IDL and RL

E Serial dilution percent difference not within limits

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Instrument Detection Limits **SDG:** Test

Instrument: ICPMS **Units:** ug/L

Element	Mass	Reporting Limit	MDL	Date of MDL
Uranium	238	1.0	0.23	2/22/2012

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Linear Dynamic Ranges **SDG:** Test

Instrument: ICPMS **Units:** ug/L

Element	Wavelength /Mass	Linear Range	Date of Linear Range
Uranium	238.00	2000	8/16/2012

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Preparation Log **SDG:** Test

Preparation Batch: 2223062 **Instrument:** ICPMS **Matrix:** Water

Sample ID	Prep Date	Weight (g)	Volume (ml)	% Moisture
MV3PGB	8/10/2012	50	50	NA
MV3PGC	8/10/2012	50	50	NA
MV2Q3	8/10/2012	50	50	NA
MV2Q4	8/10/2012	50	50	NA
MV2Q5	8/10/2012	50	50	NA
MV2Q6	8/10/2012	50	50	NA
MV2Q7	8/10/2012	50	50	NA
MV2Q8	8/10/2012	50	50	NA
MV2Q9	8/10/2012	50	50	NA
MV2Q9D	8/10/2012	50	50	NA
MV2Q9S	8/10/2012	50	50	NA
MV2RA	8/10/2012	50	50	NA
MV2RC	8/10/2012	50	50	NA
MV2RD	8/10/2012	50	50	NA
MV2RL	8/10/2012	50	50	NA

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Preparation Log

SDG: Test

Preparation Batch: 2223063 **Instrument:** ICPMS **Matrix:** Water

Sample ID	Prep Date	Weight (g)	Volume (ml)	% Moisture
MV3PJB	8/10/2012	50	50	NA
MV3PJC	8/10/2012	50	50	NA
MV2R1	8/10/2012	50	50	NA
MV2R2	8/10/2012	50	50	NA
MV2R4	8/10/2012	50	50	NA
MV2RN	8/10/2012	50	50	NA
MV2RP	8/10/2012	50	50	NA
MV2RQ	8/10/2012	50	50	NA
MV2RR	8/10/2012	50	50	NA
MV2RT	8/10/2012	50	50	NA
MV2RV	8/10/2012	50	50	NA
MV2RW	8/10/2012	50	50	NA
MV2RWD	8/10/2012	50	50	NA
MV2RWS	8/10/2012	50	50	NA
MV2RX	8/10/2012	50	50	NA

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Instrument Runlog **SDG:** Test

Instrument: ICPMS **Chart Number:** 081612A2.csv

Lab Sample Name	Client Sample Name	Date of Analysis	Time of Analysis
ZZZZZZ		8/16/2012	15:43
ZZZZZZ		8/16/2012	15:50
ZZZZZZ		8/16/2012	15:57
ZZZZZZ		8/16/2012	16:04
ZZZZZZ		8/16/2012	16:10
ZZZZZZ		8/16/2012	16:17
ZZZZZZ		8/16/2012	16:24
ZZZZZZ		8/16/2012	16:30
ZZZZZZ		8/16/2012	16:37
ZZZZZZ		8/16/2012	16:44
ZZZZZZ		8/16/2012	16:51
ZZZZZZ		8/16/2012	16:57
ZZZZZZ		8/16/2012	17:04
ZZZZZZ		8/16/2012	17:11
ZZZZZZ		8/16/2012	17:17
ZZZZZZ		8/16/2012	17:24
ZZZZZZ		8/16/2012	17:31
ZZZZZZ		8/16/2012	17:38
ZZZZZZ		8/16/2012	17:44
ZZZZZZ		8/16/2012	17:51
ZZZZZZ		8/16/2012	17:58
ZZZZZZ		8/16/2012	18:05
CAL BLK		8/16/2012	18:11
CAL 1		8/16/2012	18:18
CAL 2		8/16/2012	18:25
CAL 3		8/16/2012	18:32
ICV		8/16/2012	18:38
ICB		8/16/2012	18:45
CRI		8/16/2012	18:52
ICSA		8/16/2012	18:59
ICSAB		8/16/2012	19:05
CCV		8/16/2012	19:12
CCB		8/16/2012	19:19
ZZZZZZ		8/16/2012	19:26
ZZZZZZ		8/16/2012	19:32
ZZZZZZ		8/16/2012	19:39
ZZZZZZ		8/16/2012	19:46
ZZZZZZ		8/16/2012	19:52
ZZZZZZ		8/16/2012	19:59

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Instrument Runlog

SDG: Test

Instrument: ICPMS **Chart Number:** 081612A2.csv

Lab Sample Name	Client Sample Name	Date of Analysis	Time of Analysis
CCV		8/16/2012	20:06
CCB		8/16/2012	20:13
ZZZZZZ		8/16/2012	20:19
ZZZZZZ		8/16/2012	20:26
ZZZZZZ		8/16/2012	20:33
ZZZZZZ		8/16/2012	20:40
ZZZZZZ		8/16/2012	20:46
ZZZZZZ		8/16/2012	20:53
CCV		8/16/2012	21:00
CCB		8/16/2012	21:07
MV3PGB		8/16/2012	21:13
MV3PGC		8/16/2012	21:20
MV2Q3	A04DMW713D0004	8/16/2012	21:27
MV2Q4	A04DMW708DD0004	8/16/2012	21:34
MV2Q5	A04BMW704DD0004	8/16/2012	21:40
MV2Q6	A04BMW605D0004	8/16/2012	21:47
MV2Q7	A04BMW260004	8/16/2012	21:54
MV2Q8	A04BMW707DD0004	8/16/2012	22:00
MV2Q9	A04DMW604DD0004	8/16/2012	22:07
MV2Q9V	A04DMW604DD0004 V	8/16/2012	22:14
CCV		8/16/2012	22:21
CCB		8/16/2012	22:27
MV2Q9S	A04DMW604DD0004 S	8/16/2012	22:34
MV2Q9D	A04DMW604DD0004 D	8/16/2012	22:41
ZZZZZZ		8/16/2012	22:47
MV2RA	A04DMW709DD004	8/16/2012	22:54
MV2RC	A04DMW710D004	8/16/2012	23:01
MV2RD	A04DMW710DD004	8/16/2012	23:08
MV2RL	DUPLICATE 02	8/16/2012	23:14
CCV		8/16/2012	23:21
CCB		8/16/2012	23:28
MV3PJB		8/16/2012	23:35
MV3PJC		8/16/2012	23:41
MV2RN	A04DMW713D0004	8/16/2012	23:48
MV2RP	A04DMW708DD0004	8/16/2012	23:55
MV2RQ	A04BMW704DD0004	8/17/2012	0:02
MV2RR	A04BMW605D0004	8/17/2012	0:08
MV2RT	A04BMW260004	8/17/2012	0:15
MV2RV	A04BMW707DD0004	8/17/2012	0:22

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Instrument Runlog **SDG:** Test

Instrument: ICPMS **Chart Number:** 081612A2.csv

Lab Sample Name	Client Sample Name	Date of Analysis	Time of Analysis
MV2RW	A04DMW604D0004	8/17/2012	0:29
MV2RWV	A04DMW604D0004 V	8/17/2012	0:35
CCV		8/17/2012	0:42
CCB		8/17/2012	0:49
MV2RWS	A04DMW604D0004 S	8/17/2012	0:56
MV2RWD	A04DMW604D0004 D	8/17/2012	1:02
ZZZZZZ		8/17/2012	1:09
MV2RX	A04DMW709DD004	8/17/2012	1:15
MV2R1	A04DMW710D004	8/17/2012	1:22
MV2R2	A04DMW710DD004	8/17/2012	1:29
MV2R4	DUPLICATE 02	8/17/2012	1:36
CCV		8/17/2012	1:42
CCB		8/17/2012	1:49
ZZZZZZ		8/17/2012	1:56
ZZZZZZ		8/17/2012	2:03
ZZZZZZ		8/17/2012	2:09
ZZZZZZ		8/17/2012	2:16
ZZZZZZ		8/17/2012	2:23
ZZZZZZ		8/17/2012	2:30
ZZZZZZ		8/17/2012	2:37
ZZZZZZ		8/17/2012	2:43
ZZZZZZ		8/17/2012	2:50
ZZZZZZ		8/17/2012	2:57
ZZZZZZ		8/17/2012	3:04
ZZZZZZ		8/17/2012	3:10
ZZZZZZ		8/17/2012	3:17
ZZZZZZ		8/17/2012	3:24
ZZZZZZ		8/17/2012	3:31
ZZZZZZ		8/17/2012	3:37
ZZZZZZ		8/17/2012	3:44
ZZZZZZ		8/17/2012	3:51
ZZZZZZ		8/17/2012	3:57
ZZZZZZ		8/17/2012	4:04
ZZZZZZ		8/17/2012	4:11
ZZZZZZ		8/17/2012	4:18
ZZZZZZ		8/17/2012	4:24
ZZZZZZ		8/17/2012	4:31
ZZZZZZ		8/17/2012	4:38
ZZZZZZ		8/17/2012	4:45

TESTAMERICA-ST. LOUIS

Metals Data Reporting Form

Instrument Runlog

SDG: Test

Instrument: ICPMS **Chart Number:** 081612A2.csv

Lab Sample Name	Client Sample Name	Date of Analysis	Time of Analysis
ZZZZZZ		8/17/2012	4:51
ZZZZZZ		8/17/2012	4:58
ZZZZZZ		8/17/2012	5:05
ZZZZZZ		8/17/2012	5:11
ZZZZZZ		8/17/2012	5:18
ZZZZZZ		8/17/2012	5:25
ZZZZZZ		8/17/2012	5:32
ZZZZZZ		8/17/2012	5:38
ZZZZZZ		8/17/2012	5:45
ZZZZZZ		8/17/2012	5:52
ZZZZZZ		8/17/2012	5:59
ZZZZZZ		8/17/2012	6:05
ZZZZZZ		8/17/2012	6:12
ZZZZZZ		8/17/2012	6:19
ZZZZZZ		8/17/2012	6:26
ZZZZZZ		8/17/2012	6:32
ZZZZZZ		8/17/2012	6:39
ZZZZZZ		8/17/2012	6:46
ZZZZZZ		8/17/2012	6:53
ZZZZZZ		8/17/2012	6:59
ZZZZZZ		8/17/2012	7:06
ZZZZZZ		8/17/2012	7:13
ZZZZZZ		8/17/2012	7:20
ZZZZZZ		8/17/2012	7:26
ZZZZZZ		8/17/2012	7:33
ZZZZZZ		8/17/2012	7:40
ZZZZZZ		8/17/2012	7:47
ZZZZZZ		8/17/2012	7:54

Alpha Spectroscopy

Uranium

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Alpha Spectroscopy

Batch: 2226014 **Operator:** 3166

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDuration	TracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H090401-001	MV2Q31AC	500.0500	1.00	2.00	AV43	8 / 15 / 12 15:48	240.00	Rad11-0087	U-232	6.979E+000	82.46%	False	False
	mL	*Analyte*		*Activity*			*CountUnc*		*TotalUnc*	*MDA*	*DLC*		
		U-232		**5.755E+000**	pCi/L		6.573E-001		8.159E-001	1.330E-001	4.801E-002		
		U-234		**1.267E-001**	pCi/L		9.633E-002		9.692E-002	8.967E-002	2.780E-002		
		U-235		**1.577E-002**	pCi/L		4.335E-002		4.337E-002	9.557E-002	2.446E-002		
		U-238		**9.275E-002**	pCi/L		8.347E-002		8.383E-002	8.950E-002	2.774E-002		
F2H090401-002	MV2Q41AC	500.4000	1.00	2.00	AV44	8 / 15 / 12 15:48	240.00	Rad11-0087	U-232	6.974E+000	83.45%	False	False
	mL	*Analyte*		*Activity*			*CountUnc*		*TotalUnc*	*MDA*	*DLC*		
		U-232		**5.820E+000**	pCi/L		6.567E-001		8.187E-001	1.178E-001	3.922E-002		
		U-234		**7.042E+000**	pCi/L		6.906E-001		9.093E-001	8.973E-002	2.781E-002		
		U-235		**3.998E-001**	pCi/L		1.834E-001		1.865E-001	5.694E-002	2.447E-002		
		U-238		**7.121E+000**	pCi/L		6.933E-001		9.157E-001	4.566E-002	1.963E-002		
F2H090401-003	MV2Q51AC	100.2200	1.00	2.00	AV49	8 / 15 / 12 23:46	400.00	Rad11-0087	U-232	3.482E+001	85.47%	False	False
	mL	*Analyte*		*Activity*			*CountUnc*		*TotalUnc*	*MDA*	*DLC*		
		U-232		**2.976E+001**	pCi/L		2.392E+000		3.460E+000	3.084E-001	9.529E-002		
		U-234		**3.274E+001**	pCi/L		2.429E+000		3.669E+000	2.355E-001	6.757E-002		
		U-235		**9.613E-001**	pCi/L		4.797E-001		4.864E-001	3.517E-001	1.189E-001		
		U-238		**2.609E+001**	pCi/L		2.170E+000		3.084E+000	3.753E-001	1.508E-001		
F2H090401-004	MV2Q61AC	500.3000	1.00	2.00	AV50	8 / 15 / 12 23:46	400.00	Rad11-0087	U-232	6.976E+000	45.91%	False	False
	mL	*Analyte*		*Activity*			*CountUnc*		*TotalUnc*	*MDA*	*DLC*		
		U-232		**3.202E+000**	pCi/L		6.757E-001		7.273E-001	1.511E-001	5.343E-002		
		U-234		**8.577E+001**	pCi/L		2.474E+000		7.618E+000	1.120E-001	3.789E-002		
		U-235		**3.752E+000**	pCi/L		5.772E-001		6.576E-001	6.007E-002	3.334E-002		
		U-238		**8.256E+001**	pCi/L		2.425E+000		7.346E+000	4.818E-002	2.674E-002		
F2H090401-005	MV2Q71AC	500.0600	1.00	2.00	AV51	8 / 15 / 12 23:46	400.00	Rad11-0087	U-232	6.979E+000	62.97%	False	False
	mL	*Analyte*		*Activity*			*CountUnc*		*TotalUnc*	*MDA*	*DLC*		
		U-232		**4.395E+000**	pCi/L		5.710E-001		6.800E-001	1.303E-001	5.037E-002		
		U-234		**4.902E+001**	pCi/L		1.579E+000		4.410E+000	3.440E-002	1.909E-002		
		U-235		**2.477E+000**	pCi/L		3.967E-001		4.479E-001	8.279E-002	2.376E-002		
		U-238		**4.760E+001**	pCi/L		1.554E+000		4.290E+000	6.640E-002	1.905E-002		
F2H090401-006	MV2Q81AC	500.2000	1.00	2.00	AV52	8 / 15 / 12 23:46	400.00	Rad11-0087	U-232	6.977E+000	85.26%	False	False
	mL	*Analyte*		*Activity*			*CountUnc*		*TotalUnc*	*MDA*	*DLC*		
		U-232		**5.949E+000**	pCi/L		4.830E-001		6.950E-001	1.100E-001	4.514E-002		
		U-234		**1.476E+001**	pCi/L		7.336E-001		1.440E+000	8.958E-002	3.861E-002		
		U-235		**1.084E-001**	pCi/L		7.215E-002		7.273E-002	5.920E-002	1.699E-002		
		U-238		**3.547E+000**	pCi/L		3.620E-001		4.688E-001	1.040E-001	4.719E-002		

LOT # F2H090401-REV
120 of 672
TestAmerica St. Louis

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDurationTracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H090401-007	MV2Q91AC	500.3400	1.00	2.00	AV53	8 / 15 / 12 23:46	400.00Rad11-0087	U-232	6.975E+000	69.34%	False	False
		mL										

Analyte	Activity		CountUnc	TotalUnc	MDA	DLC
U-232	**4.836E+000**	pCi/L	5.461E-001	6.806E-001	3.463E-002	1.756E-002
U-234	**3.511E+001**	pCi/L	1.285E+000	3.217E+000	1.301E-001	5.841E-002
U-235	**1.503E+000**	pCi/L	2.962E-001	3.220E-001	3.949E-002	2.192E-002
U-238	**3.519E+001**	pCi/L	1.284E+000	3.222E+000	7.351E-002	2.486E-002

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDurationTracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H090401-007D	MV2Q91AH	500.3500	1.00	2.00	AV54	8 / 15 / 12 23:46	400.00Rad11-0087	U-232	6.975E+000	63.57%	False	False
		mL										

Analyte	Activity		CountUnc	TotalUnc	MDA	DLC
U-232	**4.434E+000**	pCi/L	5.701E-001	6.810E-001	1.300E-001	5.024E-002
U-234	**4.392E+001**	pCi/L	1.493E+000	3.980E+000	3.431E-002	1.904E-002
U-238	**4.320E+001**	pCi/L	1.479E+000	3.919E+000	8.965E-002	3.291E-002

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDurationTracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H090401-007S	MV2Q91AG	500.2600	1.00	2.00	AV55	8 / 15 / 12 23:46	400.00Rad11-0087	U-232	6.976E+000	70.87%	False	False
		mL										

Analyte	Activity		CountUnc	TotalUnc	MDA	DLC
U-232	**4.944E+000**	pCi/L	5.467E-001	6.865E-001	9.911E-002	3.505E-002
U-234	**3.839E+001**	pCi/L	1.341E+000	3.493E+000	9.780E-002	3.929E-002
U-238	**3.866E+001**	pCi/L	1.345E+000	3.515E+000	1.151E-001	4.960E-002

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDurationTracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H090401-008	MV2RA1AC	500.0800	1.00	2.00	AV57	8 / 15 / 12 15:48	240.00Rad11-0087	U-232	6.979E+000	74.71%	False	False
		mL										

Analyte	Activity		CountUnc	TotalUnc	MDA	DLC
U-232	**5.214E+000**	pCi/L	6.839E-001	8.121E-001	1.750E-001	7.004E-002
U-234	**2.843E+001**	pCi/L	1.439E+000	2.788E+000	9.663E-002	2.995E-002
U-235	**1.830E+000**	pCi/L	4.080E-001	4.360E-001	1.030E-001	2.635E-002
U-238	**2.855E+001**	pCi/L	1.441E+000	2.798E+000	1.071E-001	3.661E-002

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDurationTracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H090401-009	MV2RC1AC	500.0800	1.00	2.00	AV60	8 / 15 / 12 15:48	240.00Rad11-0087	U-232	6.979E+000	81.06%	False	False
		mL										

Analyte	Activity		CountUnc	TotalUnc	MDA	DLC
U-232	**5.657E+000**	pCi/L	6.647E-001	8.171E-001	1.287E-001	4.486E-002
U-234	**1.877E+001**	pCi/L	1.140E+000	1.946E+000	1.019E-001	3.485E-002
U-235	**1.119E+000**	pCi/L	3.104E-001	3.243E-001	5.824E-002	2.504E-002
U-238	**1.824E+001**	pCi/L	1.122E+000	1.899E+000	9.161E-002	2.840E-002

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDurationTracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H090401-010	MV2RD1AC	500.1000	1.00	2.00	AV61	8 / 15 / 12 23:46	400.00Rad11-0087	U-232	6.978E+000	83.66%	False	False
		mL										

Analyte	Activity		CountUnc	TotalUnc	MDA	DLC
U-232	**5.838E+000**	pCi/L	4.972E-001	6.984E-001	9.901E-002	3.827E-002
U-234	**8.789E+000**	pCi/L	5.837E-001	9.411E-001	8.073E-002	3.243E-002
U-235	**5.859E-001**	pCi/L	1.709E-001	1.778E-001	8.515E-002	3.126E-002
U-238	**9.610E+000**	pCi/L	6.096E-001	1.012E+000	8.057E-002	3.237E-002

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDurationTracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H090401-011	MV2RL1AC	500.3800	1.00	2.00	AV63	8 / 15 / 12 23:46	400.00Rad11-0087	U-232	6.975E+000	50.97%	False	False
		mL										

Analyte	Activity		CountUnc	TotalUnc	MDA	DLC
U-232	**3.555E+000**	pCi/L	6.480E-001	7.135E-001	1.675E-001	6.475E-002
U-234	**8.048E+001**	pCi/L	2.294E+000	7.139E+000	1.026E-001	3.471E-002
U-235	**3.884E+000**	pCi/L	5.621E-001	6.500E-001	5.503E-002	3.054E-002
U-238	**7.866E+001**	pCi/L	2.265E+000	6.985E+000	8.536E-002	2.449E-002

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDurationTracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H130000-014B	MV35G1AA	1000.0000	1.00	2.00	AV119	8 / 15 / 12 15:48	240.00Rad11-0087	U-232	3.490E+000	92.63%	False	False
		mL										

Analyte	Activity		CountUnc	TotalUnc	MDA	DLC

LOT # F2H090401-REV
121 of 672
TestAmerica St. Louis

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDuration	TracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
					U-232	3.233E+000 pCi/L		3.122E-001	4.138E-001	4.916E-002	1.536E-002		
					U-234	1.338E-002 pCi/L		2.196E-002	2.199E-002	3.476E-002	8.894E-003		
					U-235	-2.379E-003 pCi/L		4.758E-003	4.762E-003	4.325E-002	1.107E-002		
					U-238	0.000E+000 pCi/L		3.816E-003	3.816E-003	2.065E-002	8.877E-003		
F2H130000-014C	MV35G1AC	1000.0000 mL	1.00	2.00	AV120	8/15/12 15:48	240.00	Rad11-0087	U-232	3.490E+000	90.32%	False	False
					Analyte	*Activity*		*CountUnc*	*TotalUnc*	*MDA*	*DLC*		
					U-232	3.152E+000 pCi/L		3.152E-001	4.117E-001	3.871E-002	9.054E-003		
					U-234	3.590E+000 pCi/L		3.348E-001	4.506E-001	2.112E-002	9.079E-003		
					U-238	3.379E+000 pCi/L		3.246E-001	4.312E-001	3.541E-002	9.061E-003		

Laboratory Control Sample Information

Sample ID	WRKNO	Analyte	Activity	StdAdded	Recovery	LCL	UCL	ZFactor
F2H130000-014C	MV35G1AC	U-234	3.590E+000	3.265E+000	109.96%	84.00	120.00	1.0675
	MV35G1AC	U-238	3.379E+000	3.390E+000	99.66%	83.00	121.00	-0.0372

Sample Duplicate Information

Sample ID	Analyte	Sample Activity	Dup Sample ID	Dup Activity	RPD	RER	DER	Qualifier	ZFactor	
F2H090401-007S	U-234	3.839E+001	F2H090401-007D	4.392E+001	13.44%	7.403E-001	2.089E+000		2.0894	J
F2H090401-007S	U-238	3.866E+001	F2H090401-007D	4.320E+001	11.09%	6.104E-001	1.724E+000		1.7239	

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery
F2H090401-007	F2H090401-007S	U-238	3.519E+001	3.866E+001	6.777E+000	51.29% (68-143)
F2H090401-007	F2H090401-007D	U-234	3.511E+001	4.392E+001	6.526E+000	135.09%
F2H090401-007	F2H090401-007D	U-238	3.519E+001	4.320E+001	6.775E+000	118.27%
F2H090401-007	F2H090401-007S	U-234	3.511E+001	3.839E+001	6.527E+000	50.31% (65-146)

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor
F2H130000-014B	MV35G1AA	U-234	1.338E-002	2.199E-002	1.2170
F2H130000-014B	MV35G1AA	U-235	-2.379E-003	4.762E-003	-0.9991
F2H130000-014B	MV35G1AA	U-238	0.000E+000	3.816E-003	0.0000

LOT # F2H090401-REV

122 of 672

TestAmerica St. Louis

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045

7:49:01PM 8/15/2012

Sample

Sample Name: F2H090401-001
SampleType: Sample
: MV2Q31AC
Sample Collection Date: 8/3/2012 1:40:00PM

Spectrum #1 Analysis #1
Sample Volume : 0.5001L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226014
AnalysisID: 535615

Analyst: 60040

Tracer

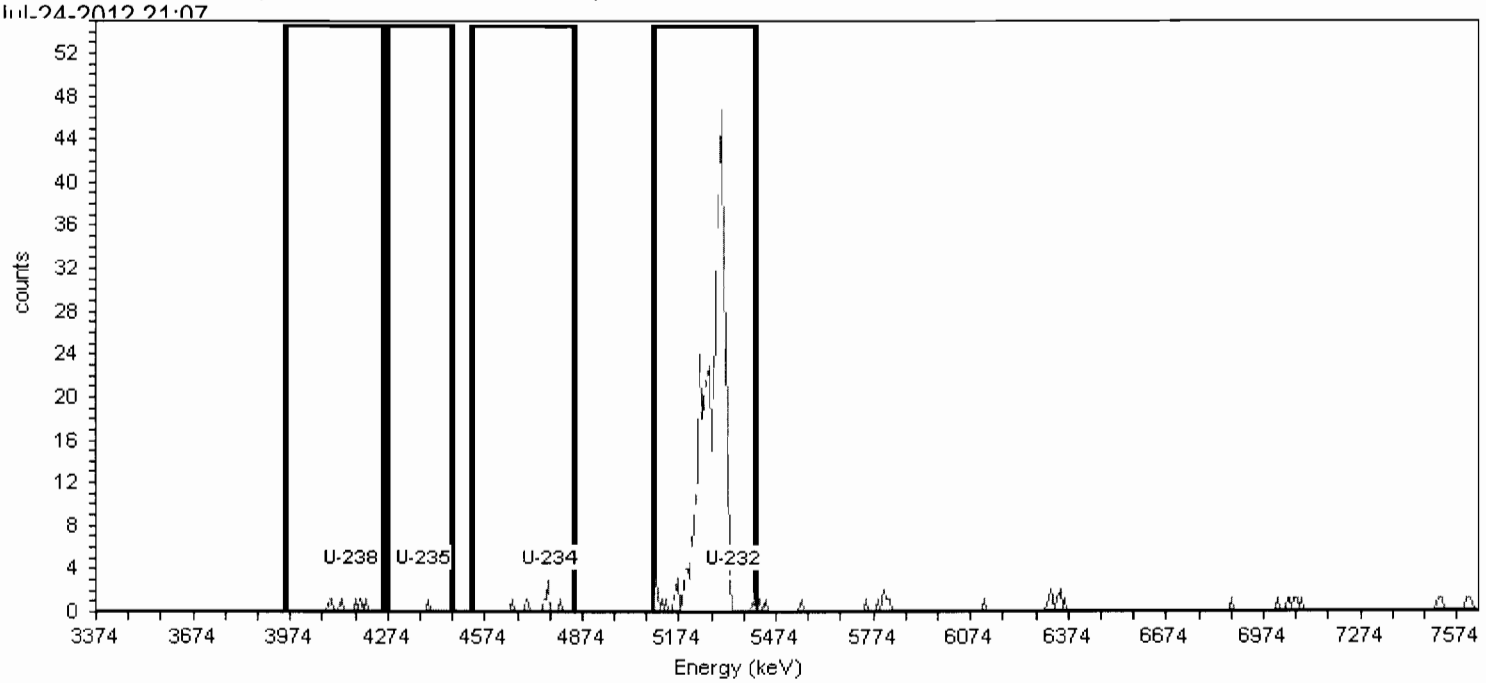
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 82.46%

Acquisition

Detector: AV43
Serial Number: 50-051c5
Acquisition Start Date: 8/15/2012 3:48:31PM
Live Time: 240.00 min.
Real Time: 240.04 min.
Background Date: 7/24/2012 9:07:02PM
Background Info: Sample: ICB;AV43; Det: AV43; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: IC-9794;AV43-20120607
Calibration Date: 6/7/2012 7:50:31PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.99% +/- 0.33% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 3:46:04PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	131.549	100.0	6	0.5000	5.50	**9.275E-002**	8.347E-002	8.38E-002	2.774E-002	8.950E-002
U-235	4381.179	4269.316	4470.670	18.260	80.2	1	0.2500	0.75	**1.577E-002**	4.335E-002	4.34E-002	2.446E-002	9.557E-002
U-234	4776.430	4530.331	4851.005	45.784	99.8	8	0.5000	7.50	**1.267E-001**	9.633E-002	9.69E-002	2.780E-002	8.967E-002
U-232	5343.203	5097.104	5410.321	85.213	100.1	380	1.5000	378.50	**5.755E+000**	6.573E-001	8.16E-001	4.801E-002	1.330E-001

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:49:14PM 8/15/2012

Sample

Sample Name: F2H090401-002
SampleType: Sample
: MV2Q41AC
Sample Collection Date: 8/3/2012 3:20:00PM

Spectrum #1 Analysis #1
Sample Volume : 0.5004L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226014
AnalysisID: 535616

Analyst: 60040

Tracer

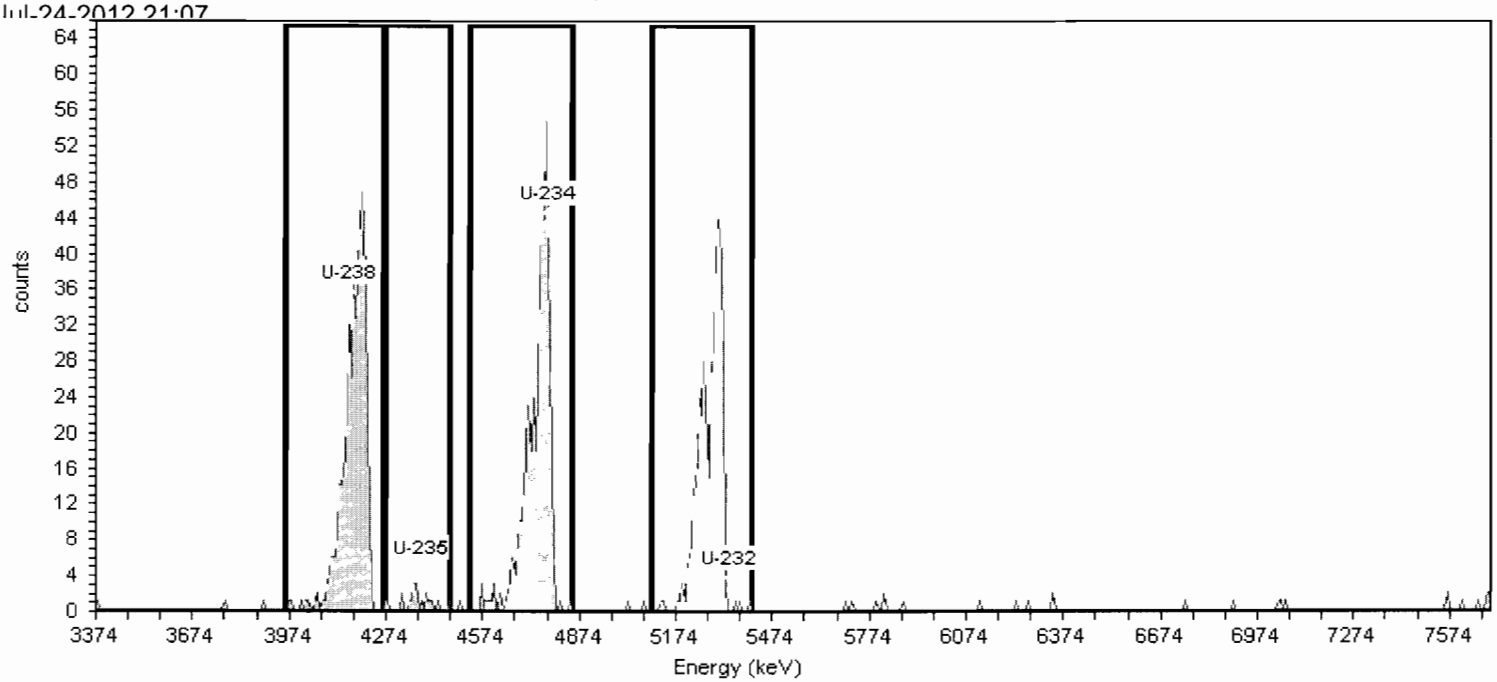
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 83.45%

Acquisition

Detector: AV44
Serial Number: 50-051JJ1
Acquisition Start Date: 8/15/2012 3:48:32PM
Live Time: 240.00 min.
Real Time: 240.04 min.
Background Date: 7/24/2012 9:07:03PM
Background Info: Sample: ICB;AV44; Det: AV44; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: IC-9795;AV44-20120610
Calibration Date: 6/11/2012 3:27:57PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²
Efficiency: 26.64% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 3:46:04PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	68.398	100.0	422	0.0000	422.00	**7.121E+000**	6.933E-001	9.16E-001	1.963E-002	4.566E-002
U-235	4381.179	4269.316	4470.670	22.149	80.2	19	0.0000	19.00	**3.998E-001**	1.834E-001	1.86E-001	2.447E-002	5.694E-002
U-234	4776.430	4530.331	4851.005	57.258	99.8	417	0.5000	416.50	**7.042E+000**	6.906E-001	9.09E-001	2.781E-002	8.973E-002
U-232	5343.203	5097.104	5410.321	87.616	100.1	379	1.0000	378.00	**5.820E+000**	6.567E-001	8.19E-001	3.922E-002	1.178E-001

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045

8:55:48AM 8/16/2012

Sample

Sample Name: F2H090401-003
SampleType: Sample
: MV2Q51AC
Sample Collection Date: 8/6/2012 9:20:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.1002L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226014
AnalysisID: 535788

Analyst: 60040

Tracer

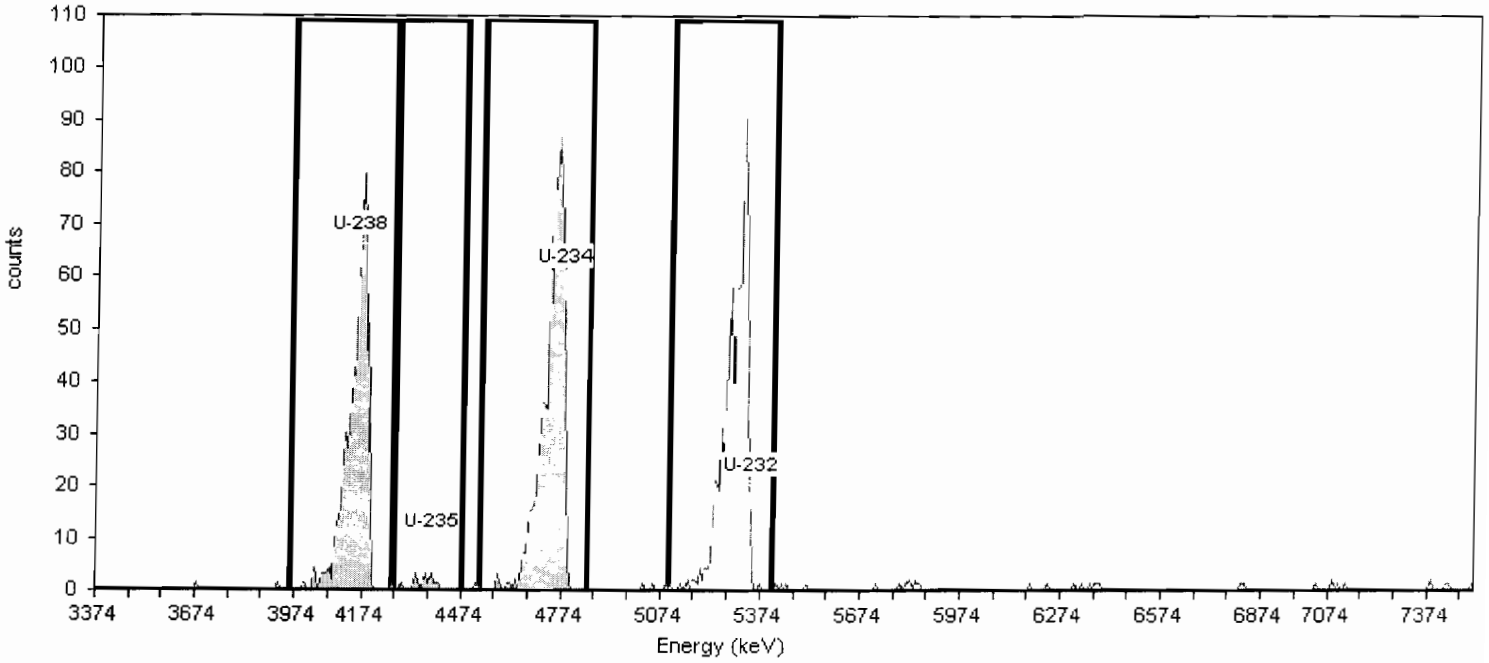
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 85.47%

Acquisition

Detector: AV49
Serial Number: 46-022AA3
Acquisition Start Date: 8/15/2012 11:46:28PM
Live Time: 400.00 min.
Real Time: 400.04 min.
Background Date: 7/24/2012 9:07:08PM
Background Info: Sample: ICB;AV49; Det: AV49; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: IC-7107;AV49-20120610
Calibration Date: 6/10/2012 8:17:41PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 29.27% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:44:31PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	59.971	100.0	583	2.0833	580.92	**2.609E+001**	2.170E+000	3.08E+000	1.508E-001	3.753E-001
U-235	4381.179	4269.316	4470.670	65.988	80.2	18	0.8333	17.17	**9.613E-001**	4.797E-001	4.86E-001	1.189E-001	3.517E-001
U-234	4776.430	4530.331	4851.005	61.224	99.8	728	0.4167	727.58	**3.274E+001**	2.429E+000	3.67E+000	6.757E-002	2.355E-001
U-232	5343.203	5097.104	5410.321	73.479	100.1	710	0.8333	709.17	**2.976E+001**	2.392E+000	3.46E+000	9.529E-002	3.084E-001

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:55:54AM 8/16/2012

Sample

Sample Name: F2H090401-004
SampleType: Sample
: MV2Q61AC
Sample Collection Date: 8/6/2012 10:05:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5003L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226014
AnalysisID: 535789

Analyst: 60040

Tracer

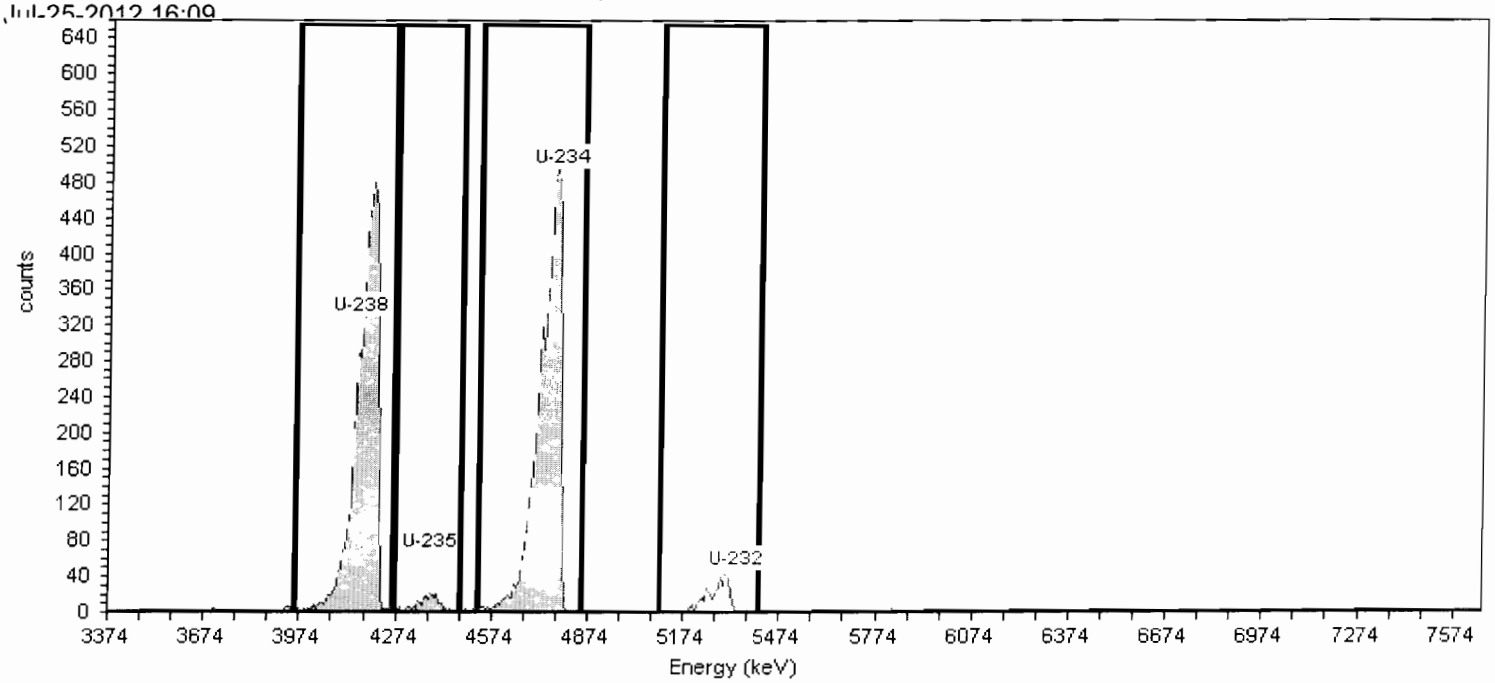
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 45.91%

Acquisition

Detector: AV50
Serial Number: 50-060W2
Acquisition Start Date: 8/15/2012 11:46:30PM
Live Time: 400.00 min.
Real Time: 400.04 min.
Background Date: 7/25/2012 4:09:54PM
Background Info: Sample: ICB;AV50; Det: AV50; Spectrum #1;
Jul-25-2012 16:09

Calibration Name: IC-8874;AV50-20120610
Calibration Date: 6/10/2012 8:17:58PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.54% +/- 0.39% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:44:31PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	68.722	100.0	4637	0.0000	4637.00	**8.256E+001**	2.425E+000	7.35E+000	2.674E-002	4.818E-002
U-235	4381.179	4269.316	4470.670	56.250	80.2	169	0.0000	169.00	**3.752E+000**	5.772E-001	6.58E-001	3.334E-002	6.007E-002
U-234	4776.430	4530.331	4851.005	75.076	99.8	4809	0.8333	4808.17	**8.577E+001**	2.474E+000	7.62E+000	3.789E-002	1.120E-001
U-232	5343.203	5097.104	5410.321	80.092	100.1	360	1.6667	358.33	**3.202E+000**	6.757E-001	7.27E-001	5.343E-002	1.511E-001

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045

8:56:00AM 8/16/2012

Sample

Sample Name: F2H090401-005
SampleType: Sample
: MV2Q71AC
Sample Collection Date: 8/6/2012 11:45:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5001L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226014
AnalysisID: 535790

Analyst: 60040

Tracer

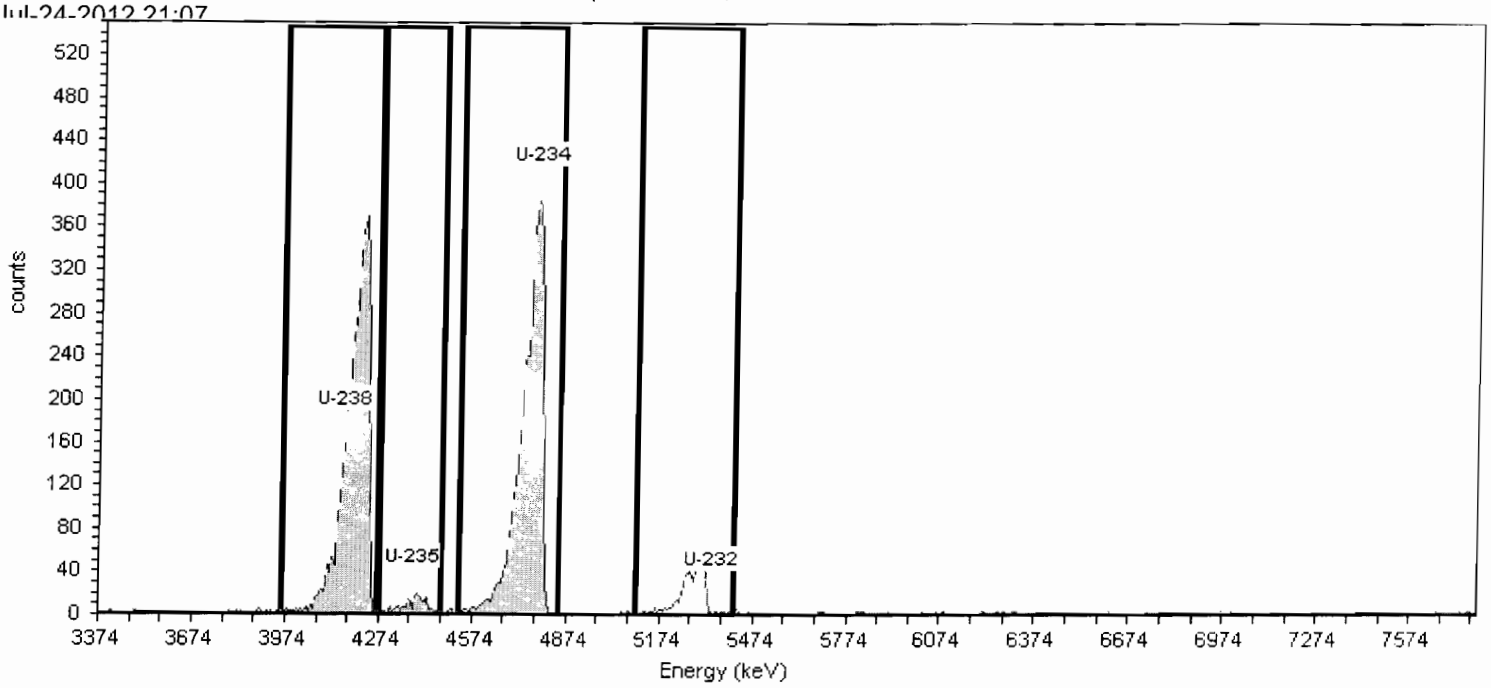
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 62.97%

Acquisition

Detector: AV51
Serial Number: 48-109I1
Acquisition Start Date: 8/15/2012 11:46:31PM
Live Time: 400.00 min.
Real Time: 400.03 min.
Background Date: 7/24/2012 9:07:10PM
Background Info: Sample: ICB;AV51; Det: AV51; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: IC-8875;AV51-20120610
Calibration Date: 6/10/2012 8:18:12PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 28.19% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:44:31PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	42.560	100.0	3752	0.4167	3751.58	**4.760E+001**	1.554E+000	4.29E+000	1.905E-002	6.640E-002
U-235	4381.179	4269.316	4470.670	69.998	80.2	157	0.4167	156.58	**2.477E+000**	3.967E-001	4.48E-001	2.376E-002	8.279E-002
U-234	4776.430	4530.331	4851.005	72.087	99.8	3856	0.0000	3856.00	**4.902E+001**	1.579E+000	4.41E+000	1.909E-002	3.440E-002
U-232	5343.203	5097.104	5410.321	77.873	100.1	506	2.9167	503.08	**4.395E+000**	5.710E-001	6.80E-001	5.037E-002	1.303E-001

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:56:06AM 8/16/2012

Sample

Sample Name: F2H090401-006
SampleType: Sample
: MV2Q81AC
Sample Collection Date: 8/6/2012 12:25:00PM

Spectrum #1 Analysis #1
Sample Volume : 0.5002L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226014
AnalysisID: 535791

Analyst: 60040

Tracer

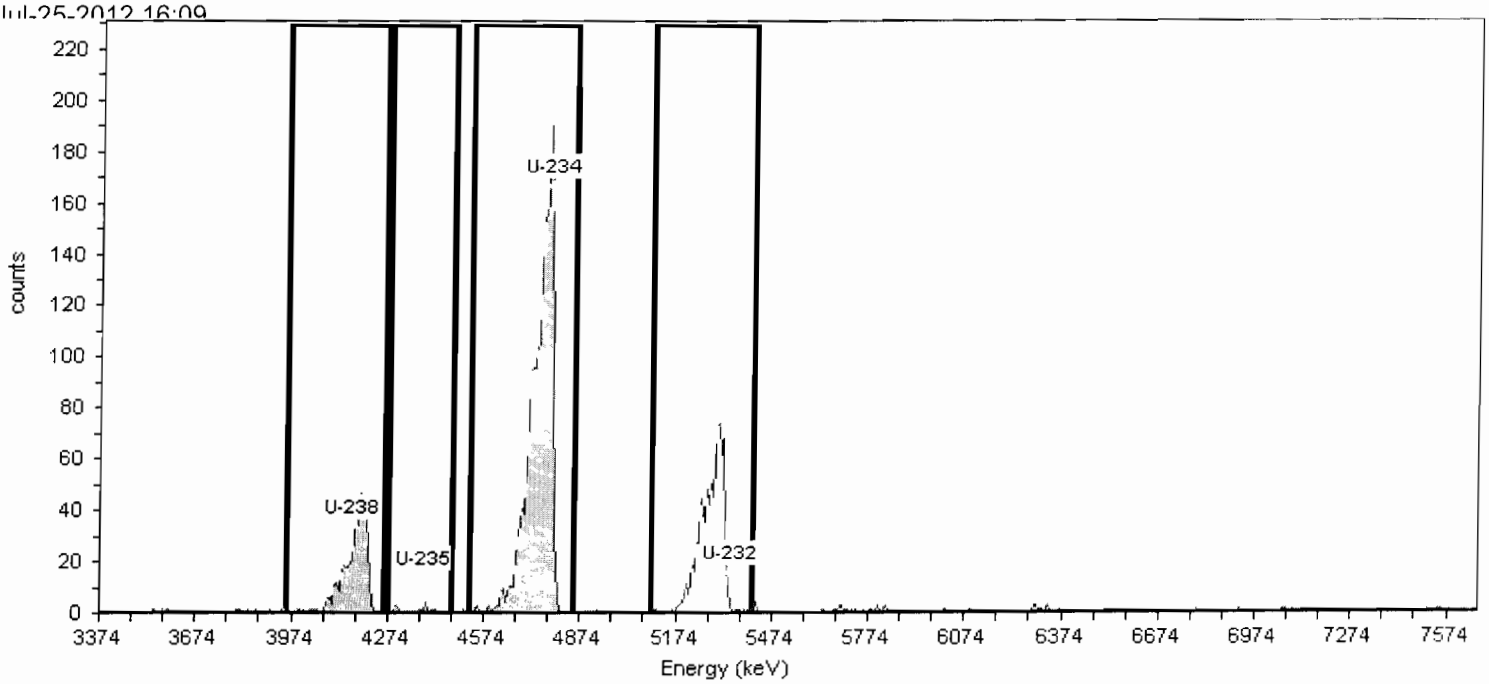
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 85.26%

Acquisition

Detector: AV52
Serial Number:
Acquisition Start Date: 8/15/2012 11:46:34PM
Live Time: 400.00 min.
Real Time: 400.03 min.
Background Date: 7/25/2012 4:09:55PM
Background Info: Sample: ICB;AV52; Det: AV52; Spectrum #1;
Jul-25-2012 16:09

Calibration Name: IC-8876;AV52-20120610
Calibration Date: 6/10/2012 8:18:26PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²
Efficiency: 29.11% +/- 0.33% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:44:31PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	62.186	100.0	396	5.0000	391.00	**3.547E+000**	3.620E-001	4.69E-001	4.719E-002	1.040E-001
U-235	4381.179	4269.316	4470.670	102.542	80.2	10	0.4167	9.58	**1.084E-001**	7.215E-002	7.27E-002	1.699E-002	5.920E-002
U-234	4776.430	4530.331	4851.005	70.454	99.8	1627	3.3333	1623.67	**1.476E+001**	7.336E-001	1.44E+000	3.861E-002	8.958E-002
U-232	5343.203	5097.104	5410.321	80.806	100.1	708	4.5833	703.42	**5.949E+000**	4.830E-001	6.95E-001	4.514E-002	1.100E-001

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:56:12AM 8/16/2012

Sample

Sample Name: F2H090401-007
SampleType: Sample
: MV2Q91AC
Sample Collection Date: 8/6/2012 12:00:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5003L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226014
AnalysisID: 535792

Analyst: 60040

Tracer

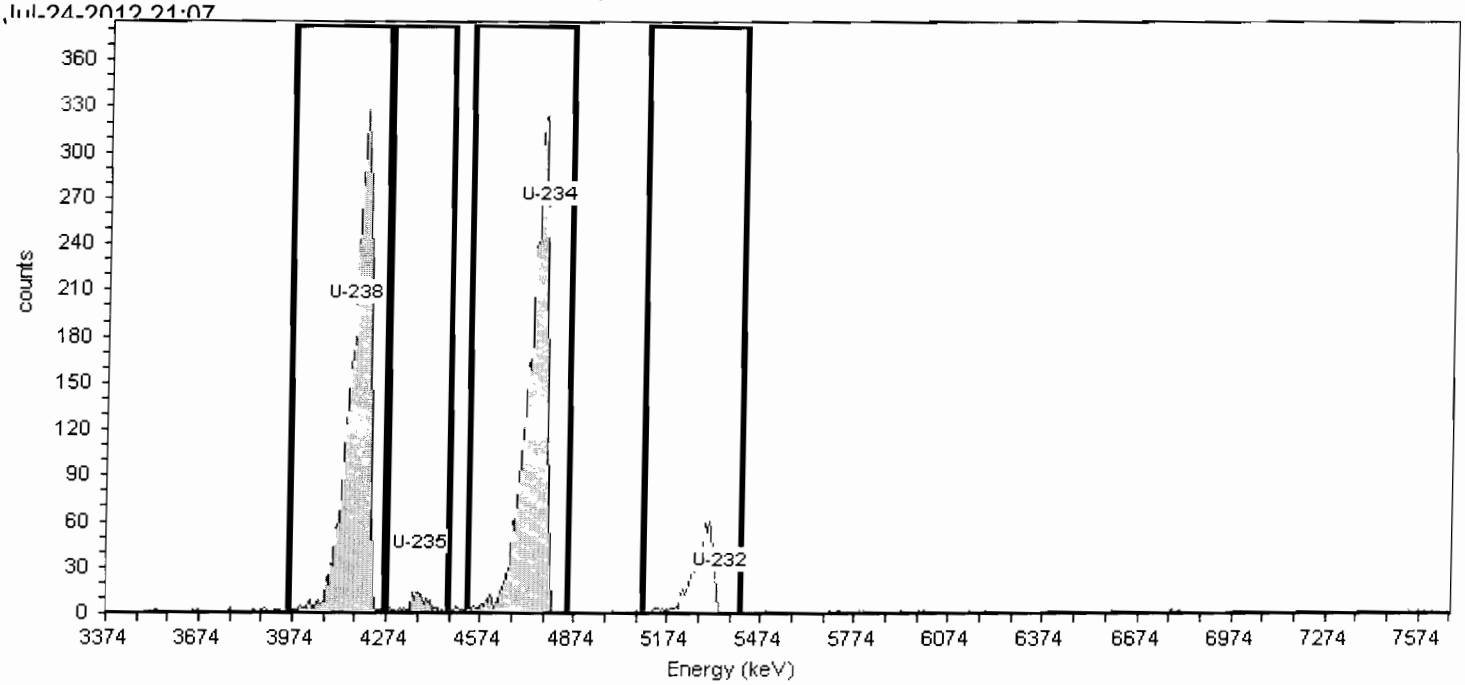
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 69.34%

Acquisition

Detector: AV53
Serial Number: 50-051A6
Acquisition Start Date: 8/15/2012 11:46:35PM
Live Time: 400.00 min.
Real Time: 400.03 min.
Background Date: 7/24/2012 9:07:12PM
Background Info: Sample: ICB;AV53; Det: AV53; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: IC-8877;AV53-20120610
Calibration Date: 6/10/2012 8:18:38PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²
Efficiency: 27.73% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:44:31PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	67.134	100.0	3007	0.8333	3006.17	**3.519E+001**	1.284E+000	3.22E+000	2.486E-002	7.351E-002
U-235	4381.179	4269.316	4470.670	57.930	80.2	103	0.0000	103.00	**1.503E+000**	2.962E-001	3.22E-001	2.192E-002	3.949E-002
U-234	4776.430	4530.331	4851.005	65.450	99.8	2998	4.5833	2993.42	**3.511E+001**	1.285E+000	3.22E+000	5.841E-002	1.301E-001
U-232	5343.203	5097.104	5410.321	65.289	100.1	545	0.0000	545.00	**4.836E+000**	5.461E-001	6.81E-001	1.756E-002	3.463E-002

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:56:18AM 8/16/2012

Sample

Sample Name: F2H090401-007D
SampleType: Sample
: MV2Q91AH
Sample Collection Date: 8/6/2012 12:00:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5004L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226014
AnalysisID: 535793

Analyst: 60040

Tracer

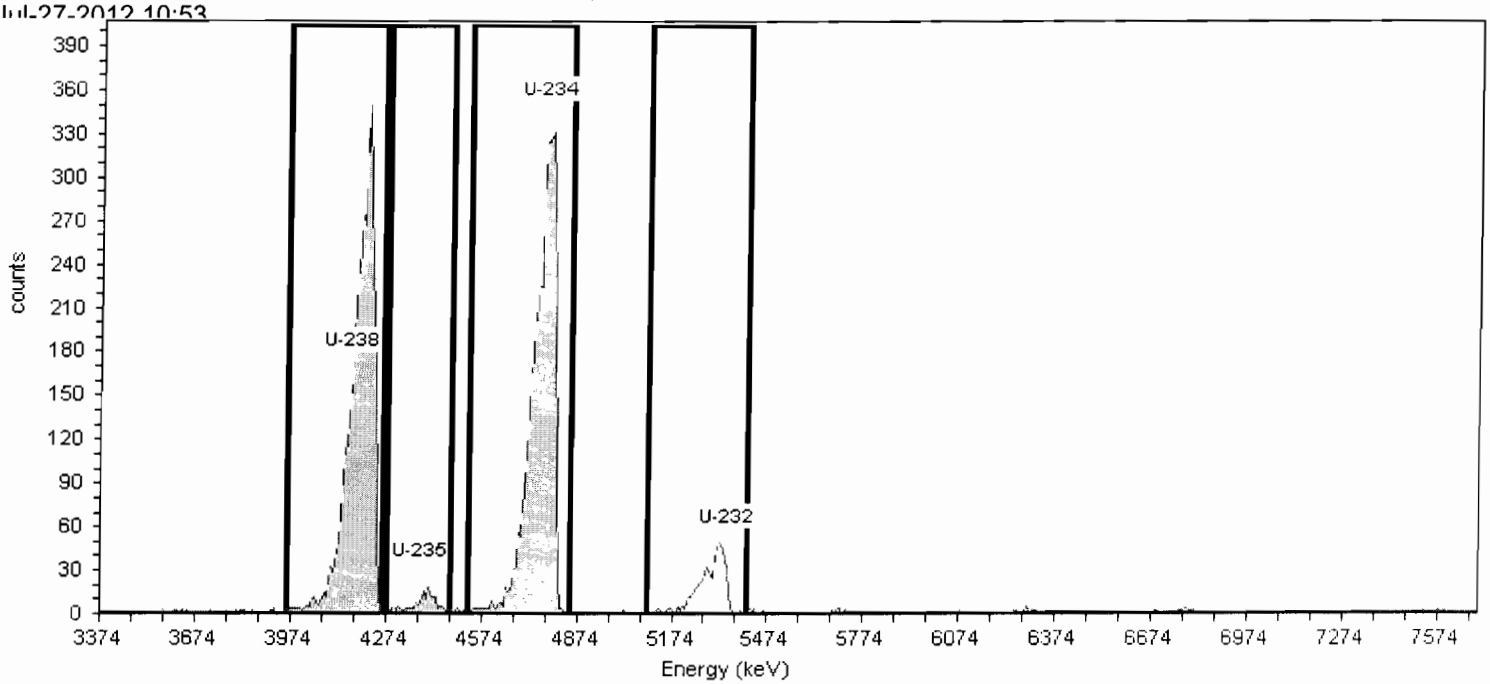
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 63.57%

Acquisition

Detector: AV54
Serial Number: 48-046II6
Acquisition Start Date: 8/15/2012 11:46:37PM
Live Time: 400.00 min.
Real Time: 400.03 min.
Background Date: 7/27/2012 10:53:52AM
Background Info: Sample: ICB;AV54; Det: AV54; Spectrum #1;
Jul-27-2012 10:53

Calibration Name: IC-9520;AV54-20120610
Calibration Date: 6/10/2012 8:18:52PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.98% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:44:31PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	58.001	100.0	3415	1.2500	3413.75	**4.320E+001**	1.479E+000	3.92E+000	3.291E-002	8.965E-002
U-235	4381.179	4269.316	4470.670	50.981	80.2	131	0.4167	130.58	**2.060E+000**	3.614E-001	4.01E-001	2.369E-002	8.258E-002
U-234	4776.430	4530.331	4851.005	73.766	99.8	3464	0.0000	3464.00	**4.392E+001**	1.493E+000	3.98E+000	1.904E-002	3.431E-002
U-232	5343.203	5097.104	5410.321	82.564	100.1	507	2.9167	504.08	**4.434E+000**	5.701E-001	6.81E-001	5.024E-002	1.300E-001

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:55:29AM 8/16/2012

Sample

Sample Name: F2H090401-007S
SampleType: Sample
: MV2Q91AG
Sample Collection Date: 8/6/2012 12:00:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5003L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226014
AnalysisID: 535785

Analyst: 60040

Tracer

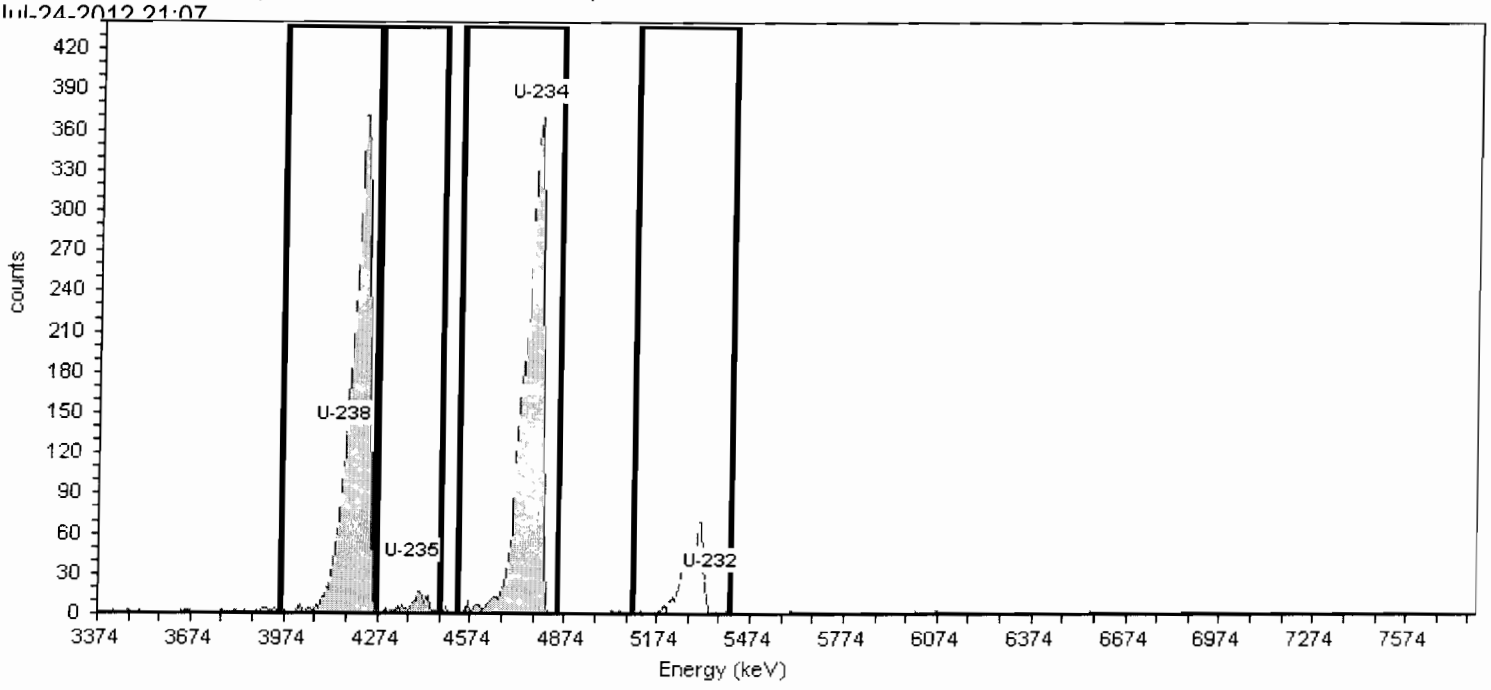
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 70.87%

Acquisition

Detector: AV55
Serial Number: 50-051C2
Acquisition Start Date: 8/15/2012 11:46:38PM
Live Time: 400.00 min.
Real Time: 400.03 min.
Background Date: 7/24/2012 9:07:13PM
Background Info: Sample: ICB;AV55; Det: AV55; Spectrum #1; Jul-24-2012 21:07

Calibration Name: IC-8879;AV55-20120610
Calibration Date: 6/10/2012 8:19:03PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²
Efficiency: 27.20% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:44:31PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	21.888	100.0	3314	3.3333	3310.67	**3.866E+001**	1.345E+000	3.52E+000	4.960E-002	1.151E-001
U-235	4381.179	4269.316	4470.670	56.426	80.2	117	0.8333	116.17	**1.692E+000**	3.155E-001	3.46E-001	3.092E-002	9.146E-002
U-234	4776.430	4530.331	4851.005	69.599	99.8	3283	2.0833	3280.92	**3.839E+001**	1.341E+000	3.49E+000	3.929E-002	9.780E-002
U-232	5343.203	5097.104	5410.321	79.368	100.1	548	1.6667	546.33	**4.944E+000**	5.467E-001	6.87E-001	3.505E-002	9.911E-002

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:50:02PM 8/15/2012

Sample

Sample Name: F2H090401-008

SampleType: Sample

: MV2RA1AC

Sample Collection Date: 8/6/2012 3:20:00PM

Spectrum #1 Analysis #1

Sample Volume : 0.5001L

Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226014

AnalysisID: 535624

Analyst: 60040

Tracer

Tracer Name: Rad11-0087_U232_Unclean

Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM

Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232

Tracer Recovery: 74.71%

Acquisition

Detector: AV57

Serial Number: 48-158EE3

Acquisition Start Date: 8/15/2012 3:48:39PM

Live Time: 240.00 min.

Real Time: 240.01 min.

Background Date: 7/24/2012 9:07:15PM

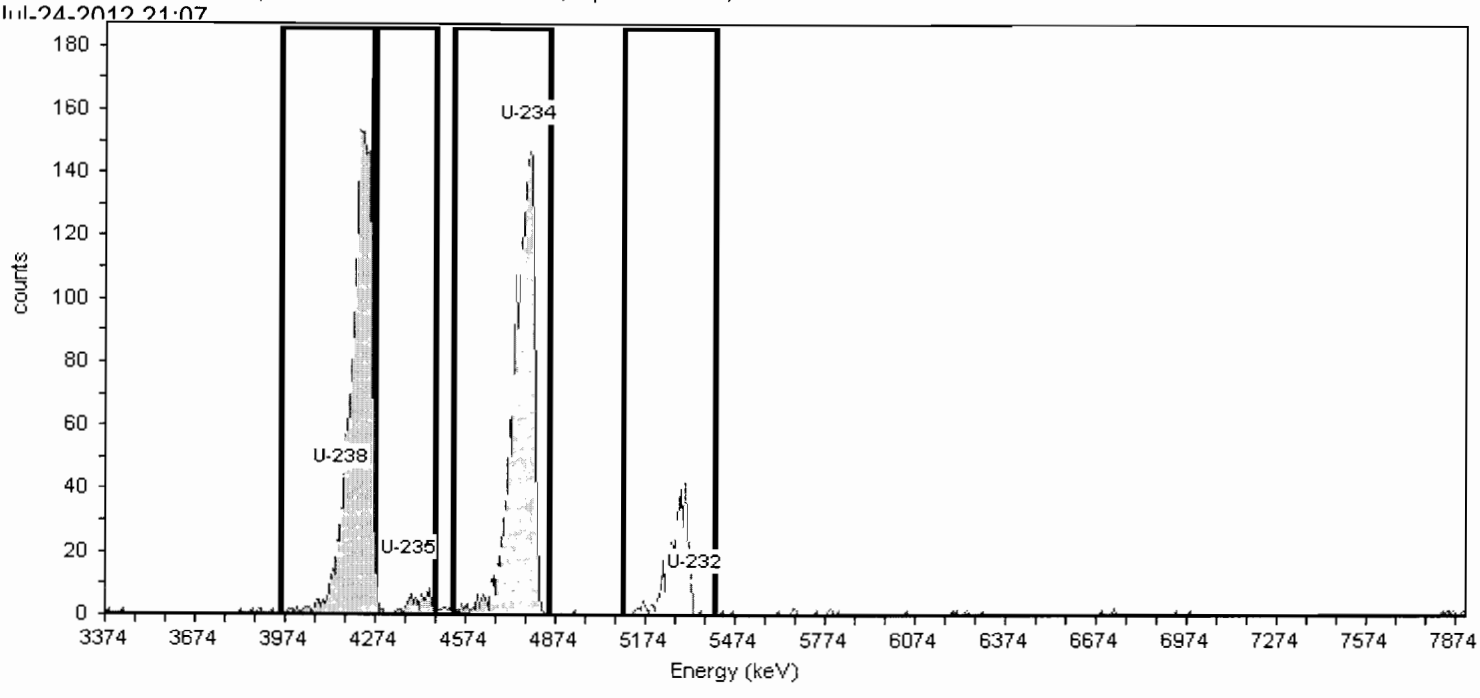
Background Info: Sample: ICB;AV57; Det: AV57; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: IC-9793;AV57-20120610

Calibration Date: 6/10/2012 8:19:29PM

Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 27.64% +/- 0.33% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI

Decay Correction: 8/15/2012 3:46:04PM

MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium

MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	38.636	100.0	1572	0.7500	1571.25	**2.855E+001**	1.441E+000	2.80E+000	3.661E-002	1.071E-001
U-235	4381.179	4269.316	4470.670	.000	80.2	81	0.2500	80.75	**1.830E+000**	4.080E-001	4.36E-001	2.635E-002	1.030E-001
U-234	4776.430	4530.331	4851.005	86.516	99.8	1562	0.5000	1561.50	**2.843E+001**	1.439E+000	2.79E+000	2.995E-002	9.663E-002
U-232	5343.203	5097.104	5410.321	69.106	100.1	354	2.7500	351.25	**5.214E+000**	6.839E-001	8.12E-001	7.004E-002	1.750E-001

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:50:10PM 8/15/2012

Sample

Sample Name: F2H090401-009
SampleType: Sample
: MV2RC1AC
Sample Collection Date: 8/6/2012 3:45:00PM

Spectrum #1 Analysis #1
Sample Volume : 0.5001L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226014
AnalysisID: 535625

Analyst: 60040

Tracer

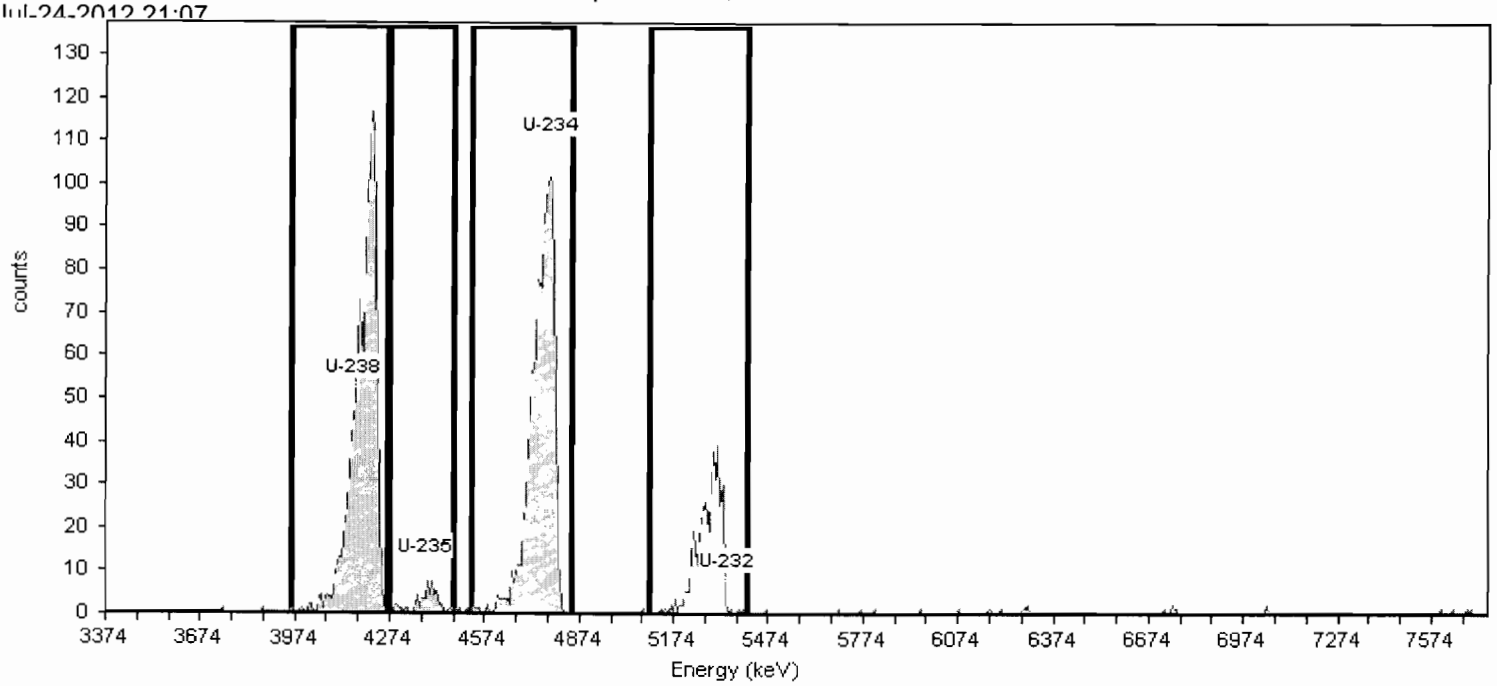
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 81.06%

Acquisition

Detector: AV60
Serial Number: 49-027117
Acquisition Start Date: 8/15/2012 3:48:40PM
Live Time: 240.00 min.
Real Time: 240.01 min.
Background Date: 7/24/2012 9:07:18PM
Background Info: Sample: ICB;AV60; Det: AV60; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: IC-9817;AV60-20120610
Calibration Date: 6/10/2012 8:19:43PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²
Efficiency: 26.82% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 3:46:04PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	42.715	100.0	1057	0.5000	1056.50	**1.824E+001**	1.122E+000	1.90E+000	2.840E-002	9.161E-002
U-235	4381.179	4269.316	4470.670	47.258	80.2	52	0.0000	52.00	**1.119E+000**	3.104E-001	3.24E-001	2.504E-002	5.824E-002
U-234	4776.430	4530.331	4851.005	78.977	99.8	1086	0.7500	1085.25	**1.877E+001**	1.140E+000	1.95E+000	3.485E-002	1.019E-001
U-232	5343.203	5097.104	5410.321	82.229	100.1	371	1.2500	369.75	**5.657E+000**	6.647E-001	8.17E-001	4.486E-002	1.287E-001

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:55:35AM 8/16/2012

Sample

Sample Name: F2H090401-010
SampleType: Sample
: MV2RD1AC
Sample Collection Date: 8/6/2012 3:55:00PM

Spectrum #1 Analysis #1
Sample Volume : 0.5001L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226014
AnalysisID: 535786

Analyst: 60040

Tracer

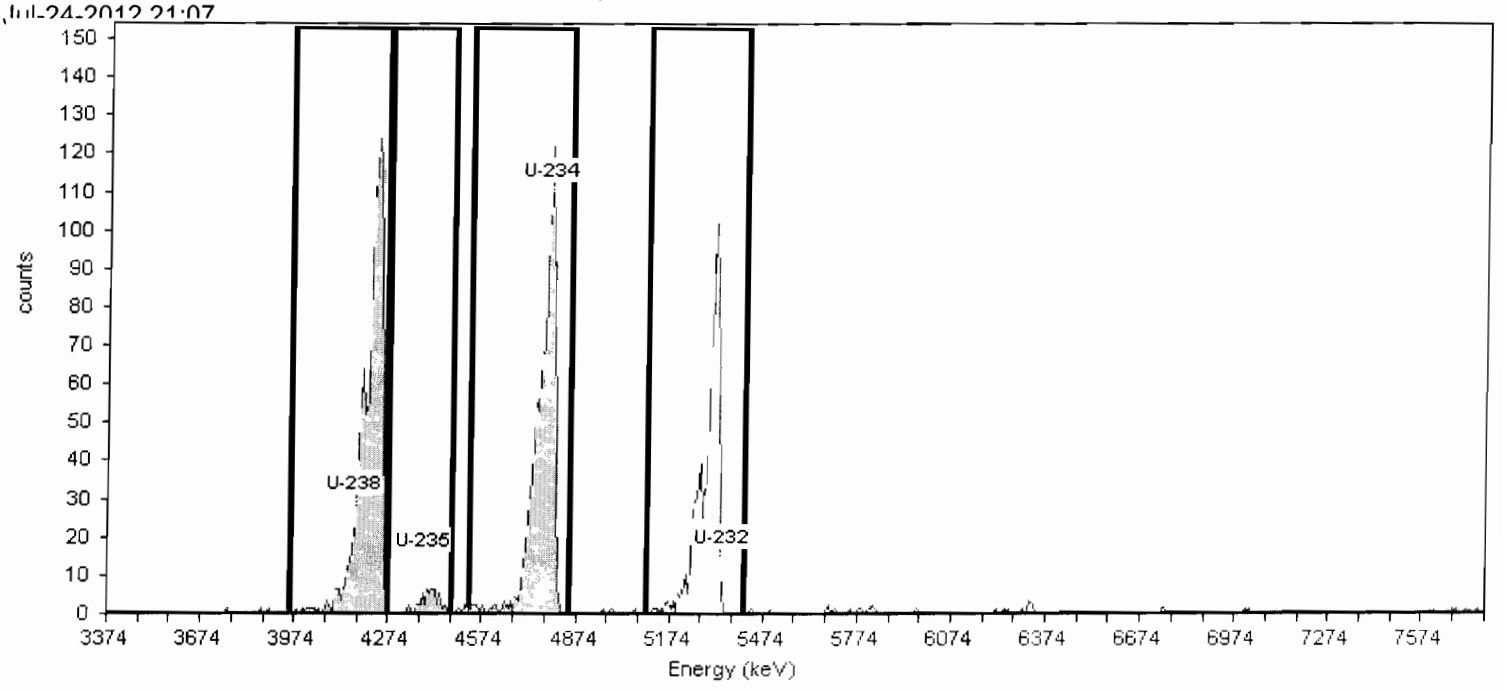
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 83.66%

Acquisition

Detector: AV61
Serial Number: 5-051JJ3
Acquisition Start Date: 8/15/2012 11:46:40PM
Live Time: 400.00 min.
Real Time: 400.04 min.
Background Date: 7/24/2012 9:07:19PM
Background Info: Sample: ICB;AV61; Det: AV61; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: IC-9884;AV61-20120610
Calibration Date: 6/10/2012 8:19:46PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.92% +/- 0.39% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:44:31PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	29.013	100.0	999	2.0833	996.92	**9.610E+000**	6.096E-001	1.01E+000	3.237E-002	8.057E-002
U-235	4381.179	4269.316	4470.670	68.037	80.2	50	1.2500	48.75	**5.859E-001**	1.709E-001	1.78E-001	3.126E-002	8.515E-002
U-234	4776.430	4530.331	4851.005	63.636	99.8	912	2.0833	909.92	**8.789E+000**	5.837E-001	9.41E-001	3.243E-002	8.073E-002
U-232	5343.203	5097.104	5410.321	52.389	100.1	665	2.9167	662.08	**5.838E+000**	4.972E-001	6.98E-001	3.827E-002	9.901E-002

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:55:42AM 8/16/2012

Sample

Sample Name: F2H090401-011
SampleType: Sample
: MV2RL1AC
Sample Collection Date: 8/6/2012 12:00:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5004L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226014
AnalysisID: 535787

Analyst: 60040

Tracer

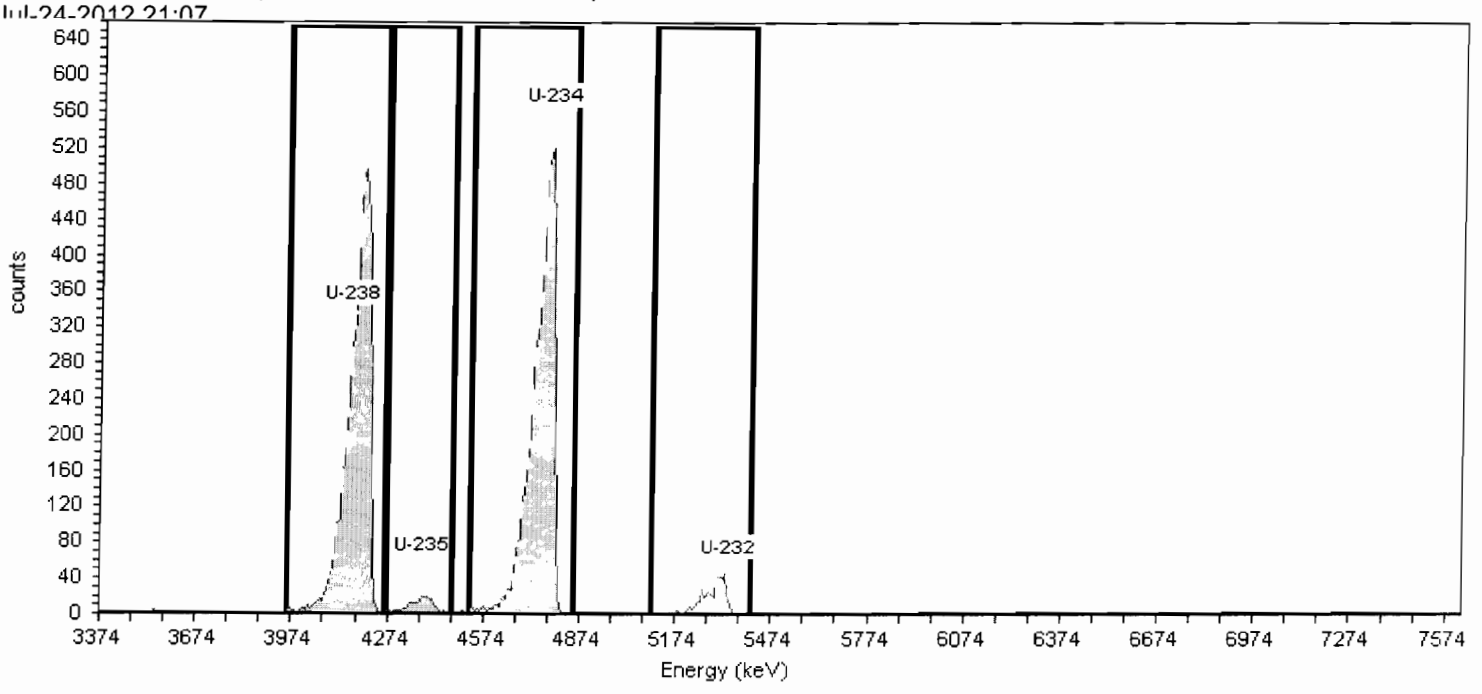
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 50.97%

Acquisition

Detector: AV63
Serial Number: 47-029ff2
Acquisition Start Date: 8/15/2012 11:46:41PM
Live Time: 400.00 min.
Real Time: 400.04 min.
Background Date: 7/24/2012 9:07:21PM
Background Info: Sample: ICB;AV63; Det: AV63; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: IC-9886;AV63-20120610
Calibration Date: 6/10/2012 8:19:57PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.07% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:44:31PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	66.505	100.0	4823	0.4167	4822.58	**7.866E+001**	2.265E+000	6.98E+000	2.449E-002	8.536E-002
U-235	4381.179	4269.316	4470.670	80.229	80.2	191	0.0000	191.00	**3.884E+000**	5.621E-001	6.50E-001	3.054E-002	5.503E-002
U-234	4776.430	4530.331	4851.005	70.453	99.8	4925	0.8333	4924.17	**8.048E+001**	2.294E+000	7.14E+000	3.471E-002	1.026E-001
U-232	5343.203	5097.104	5410.321	81.553	100.1	394	2.9167	391.08	**3.555E+000**	6.480E-001	7.13E-001	6.475E-002	1.675E-001

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045

7:48:11PM 8/15/2012

Sample

Sample Name: F2H130000-014B
SampleType: Blank
: MV35G1AA
Sample Collection Date: 8/3/2012 1:40:00PM

Spectrum #1 Analysis #1
Sample Volume : 1.0000L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226014
AnalysisID: 535613

Analyst: 60040

Tracer

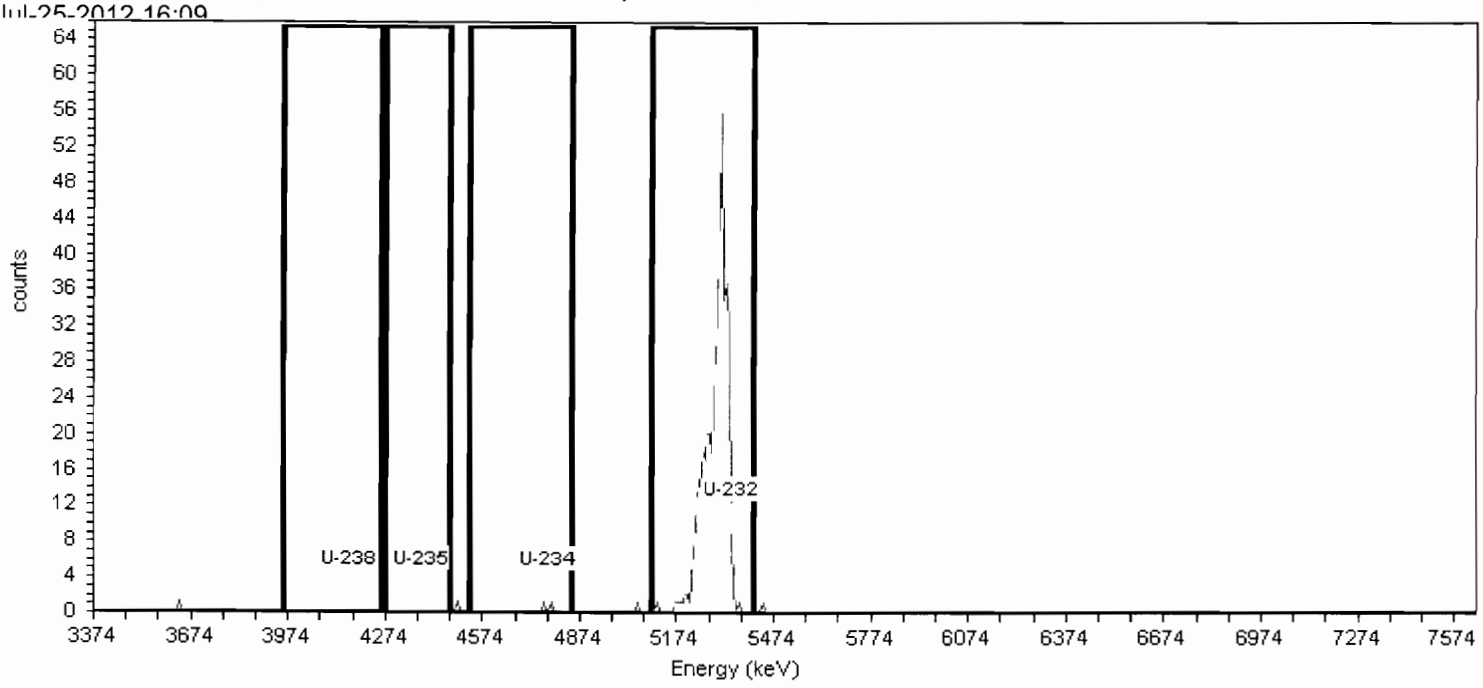
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 92.63%

Acquisition

Detector: AV119
Serial Number: 49-037G6
Acquisition Start Date: 8/15/2012 3:48:12PM
Live Time: 240.00 min.
Real Time: 240.00 min.
Background Date: 7/25/2012 4:09:51PM
Background Info: Sample: ICB;AV119; Det: AV119; Spectrum #1;
Jul-25-2012 16:09

Calibration Name: IC-9795;AV119-20120608
Calibration Date: 6/8/2012 8:47:13AM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²
Efficiency: 26.55% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 3:46:04PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	.000	100.0	0	0.0000	0.00	**0.000E+000**	7.631E-003	7.63E-003	8.877E-003	2.065E-002
U-235	4381.179	4269.316	4470.670	.000	80.2	0	0.2500	-0.25	**-2.379E-003**	4.758E-003	4.76E-003	1.107E-002	4.325E-002
U-234	4776.430	4530.331	4851.005	40.552	99.8	2	0.2500	1.75	**1.338E-002**	2.196E-002	2.20E-002	8.894E-003	3.476E-002
U-232	5343.203	5097.104	5410.321	59.832	100.1	419	0.7500	418.25	**3.233E+000**	3.122E-001	4.14E-001	1.536E-002	4.916E-002

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:48:17PM 8/15/2012

Sample

Sample Name: F2H130000-014C
SampleType: Control
: MV35G1AC
Sample Collection Date: 8/3/2012 1:40:00PM

Spectrum #1 Analysis #1
Sample Volume : 1.0000L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226014
AnalysisID: 535614

Analyst: 60040

Tracer

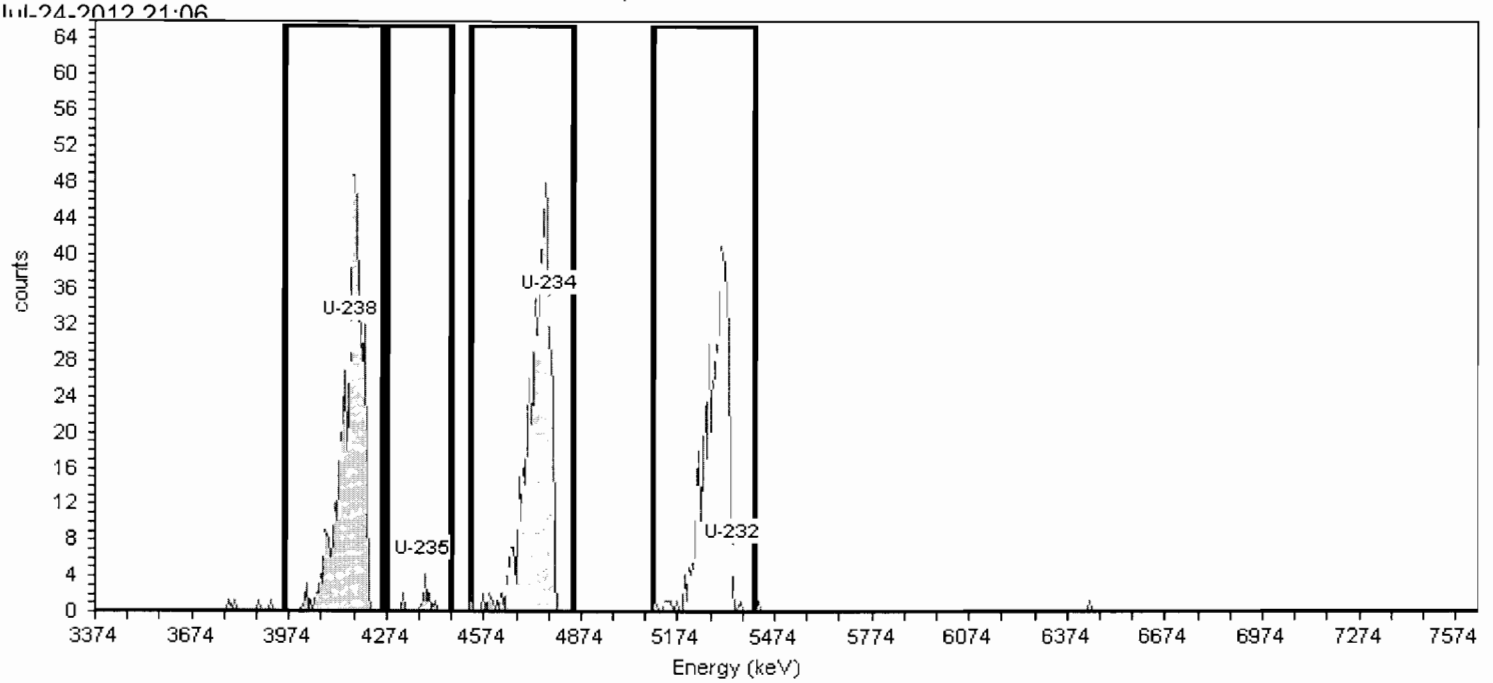
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 90.32%

Acquisition

Detector: AV120
Serial Number: 49-037W3
Acquisition Start Date: 8/15/2012 3:48:13PM
Live Time: 240.00 min.
Real Time: 240.00 min.
Background Date: 7/24/2012 9:06:31PM
Background Info: Sample: ICB;AV120; Det: AV120; Spectrum #1;
Jul-24-2012 21:06

Calibration Name: IC-9817;AV120-20120608
Calibration Date: 6/8/2012 8:47:18AM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²
Efficiency: 26.68% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 3:46:04PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	63.935	100.0	434	0.2500	433.75	**3.379E+000**	3.246E-001	4.31E-001	9.061E-003	3.541E-002
U-235	4381.179	4269.316	4470.670	21.923	80.2	11	0.2500	10.75	**1.044E-001**	6.461E-002	6.52E-002	1.130E-002	4.415E-002
U-234	4776.430	4530.331	4851.005	69.437	99.8	460	0.0000	460.00	**3.590E+000**	3.348E-001	4.51E-001	9.079E-003	2.112E-002
U-232	5343.203	5097.104	5410.321	82.711	100.1	410	0.2500	409.75	**3.152E+000**	3.152E-001	4.12E-001	9.054E-003	3.871E-002

24 hours LL

8/22/12

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Prep Report for Uranium, Isotopic by Alpha Spectroscopy

Batch: 2226014 **Prep Analyst:** 403651

SampID	WRKNO	Aliquot	X	Dilution	Adj Aliquot	TracerID	TracerAnalyte	TracerAliquot	Low Level
F2H090401-001	MV2Q31AC	5.0005E+002 mL	43	1.00	5.0005E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-002	MV2Q41AC	5.0040E+002 mL	44	1.00	5.0040E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-003	MV2Q51AC	1.0022E+002 mL	49	1.00	1.0022E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-004	MV2Q61AC	5.0030E+002 mL	50	1.00	5.0030E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-005	MV2Q71AC	5.0006E+002 mL	51	1.00	5.0006E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-006	MV2Q81AC	5.0020E+002 mL	52	1.00	5.0020E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-007	MV2Q91AC	5.0034E+002 mL	53	1.00	5.0034E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-007D	MV2Q91AH	5.0035E+002 mL	54	1.00	5.0035E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-007S	MV2Q91AG	5.0026E+002 mL	55	1.00	5.0026E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-008	MV2RA1AC	5.0008E+002 mL	57	1.00	5.0008E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-009	MV2RC1AC	5.0008E+002 mL	60	1.00	5.0008E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-010	MV2RD1AC	5.0010E+002 mL	61	1.00	5.0010E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-011	MV2RL1AC	5.0038E+002 mL	63	1.00	5.0038E+002 mL	Rad11-0087	U-232	0.10	N
F2H130000-014B	MV35G1AA	1.0000E+003 mL	119	1.00	1.0000E+003 mL	Rad11-0087	U-232	0.10	N
F2H130000-014C	MV35G1AC	1.0000E+003 mL	120	1.00	1.0000E+003 mL	Rad11-0087	U-232	0.10	N

400 min RC = 49

400 min RC = 50

400 min RC = 51

400 min RC = 52

400 min RC = 53

400 min RC = 54

400 min RC = 55

400 min RC = 61

400 min RC = 63

SampID	WRKNO	Aliquot	Dilution	Adj Aliquot	TracerID	TracerAnalyte	TracerAliquot	Low Level

Spike Information

Sample ID	Standard ID	Analyte	Std Conc	Aliquot	Ref Date	StdAdded
F2H090401-007D	Rad12-0005	U-234	7.249E+001 dpm/mL	0.10 mL	8/1/1997 12:00:00AM	6.526E+000 pCi/L
F2H090401-007D	Rad12-0005	U-238	7.526E+001 dpm/mL	0.10 mL	8/1/1997 12:00:00AM	6.775E+000 pCi/L
F2H090401-007S	Rad12-0005	U-234	7.249E+001 dpm/mL	0.10 mL	8/1/1997 12:00:00AM	6.527E+000 pCi/L
F2H090401-007S	Rad12-0005	U-238	7.526E+001 dpm/mL	0.10 mL	8/1/1997 12:00:00AM	6.777E+000 pCi/L
F2H130000-014C	Rad12-0005	U-234	7.249E+001 dpm/mL	0.10 mL	8/1/1997 12:00:00AM	3.265E+000 pCi/L
F2H130000-014C	Rad12-0005	U-238	7.526E+001 dpm/mL	0.10 mL	8/1/1997 12:00:00AM	3.390E+000 pCi/L

SUB — Spiked By

MM — Spike Verified By

8.13.12 — Spike Date

Standard Operating Procedures

	SOPNumber	Title	Revision
☐	ST-RC-0002	Planchet Preparation For Radiochemistry And Radiological Screening Analysis	10.00
☐	ST-RC-0003	Drying And Grinding Of Soil And Solid Samples	11.00
☐	ST-RC-0004	Preparation Of Soil, Sludge, Filter, Biota and Oil/Grease Samples For Radiochemical Analysis	19.00
☐	ST-RC-0014	Bulk Drying and Grinding of Soil and Solid Samples	0.00
☑	ST-RC-0100	Actinide Coprecipitation	14.00
☑	ST-RC-0238	Isotopic Uranium by Eichrom UTEVA Resin for Various Matrices	12.00
☐	ST-RC-0240	Isotopic Americium, Curium, Plutonium, Thorium, and Uranium in Various Matrices by Eichrom Separation Resin	12.00
☐	ST-RC-0241	Isotopic Americium, Plutonium, Curium, and Uranium in Various Matricesby Eichrom Uteva and Tru Resins (with V	9.00
☐	ST-RC-0242	Isotopic Thorium, Plutonium and Uranium in Various Matrices by Eichrome Separation Resin	14.00
☐	ST-RC-0246	Isotopic Americium, Curium and Uranium in Various Matrices by Eichrom Separation Resins	5.00
☑	ST-RD-0210	Alpha Spectroscopy Analysis	8.00

SUB — Column Analyst

8.15.12 — Date

SUB — Coprecipitated By

8.15.12 — Precip Date

RM — Reviewed By

8.20.12 — Review Date

SUB — Analyst/Relenquished By

8.15.12 — Release Date

Received By

8/15/12 — Receipt Date

1125353055 / SUB / 8.13.12 — Balance ID / Initials / Date

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Analysis Report for Alpha Spectroscopy

Batch: 2226015 **Operator:** 3166

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDurationTracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H090401-012	MV2RN1AA	500.1500 mL	1.00	2.00	AV64	8/15/12 15:53	240.00Rad11-0087	U-232	6.978E+000	74.63%	False	False

Analyte	Activity		CountUnc	TotalUnc	MDA	DLC
U-232	5.208E+000	pCi/L	6.635E-001	7.948E-001	1.596E-001	6.297E-002
U-234	1.330E-001	pCi/L	9.749E-002	9.812E-002	7.802E-002	1.997E-002
U-235	0.000E+000	pCi/L	1.068E-002	1.068E-002	5.780E-002	2.485E-002
U-238	3.426E-002	pCi/L	6.177E-002	6.184E-002	1.094E-001	3.986E-002

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDurationTracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H090401-013	MV2RP1AA	500.0700 mL	1.00	2.00	AV65	8/15/12 15:53	240.00Rad11-0087	U-232	6.979E+000	78.47%	False	False

Analyte	Activity		CountUnc	TotalUnc	MDA	DLC
U-232	5.476E+000	pCi/L	6.655E-001	8.090E-001	1.117E-001	3.489E-002
U-234	7.264E+000	pCi/L	7.112E-001	9.370E-001	1.023E-001	3.499E-002
U-235	2.701E-001	pCi/L	1.566E-001	1.582E-001	1.147E-001	3.555E-002
U-238	6.682E+000	pCi/L	6.812E-001	8.826E-001	9.198E-002	2.851E-002

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDurationTracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H090401-014	MV2RQ1AA	500.0300 mL	1.00	2.00	AV66	8/15/12 15:53	240.00Rad11-0087	U-232	6.979E+000	72.82%	False	False

Analyte	Activity		CountUnc	TotalUnc	MDA	DLC
U-232	5.083E+000	pCi/L	6.800E-001	8.029E-001	1.051E-001	2.976E-002
U-234	2.761E+001	pCi/L	1.416E+000	2.717E+000	8.247E-002	2.111E-002
U-235	8.128E-001	pCi/L	2.709E-001	2.794E-001	6.110E-002	2.626E-002
U-238	2.225E+001	pCi/L	1.270E+000	2.260E+000	8.231E-002	2.106E-002

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDurationTracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H090401-015	MV2RR1AA	500.1100 mL	1.00	2.00	AV67	8/15/12 23:44	400.00Rad11-0087	U-232	6.978E+000	47.10%	False	False

Analyte	Activity		CountUnc	TotalUnc	MDA	DLC
U-232	3.287E+000	pCi/L	6.466E-001	7.031E-001	1.821E-001	7.287E-002
U-234	7.865E+001	pCi/L	2.260E+000	6.982E+000	1.356E-001	5.447E-002
U-235	3.674E+000	pCi/L	5.446E-001	6.260E-001	5.462E-002	3.031E-002
U-238	7.753E+001	pCi/L	2.241E+000	6.887E+000	1.017E-001	3.438E-002

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDurationTracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H090401-016	MV2RT1AA	500.1400 mL	1.00	2.00	AV68	8/15/12 23:44	400.00Rad11-0087	U-232	6.978E+000	63.90%	False	False

Analyte	Activity		CountUnc	TotalUnc	MDA	DLC
U-232	4.459E+000	pCi/L	5.755E-001	6.867E-001	1.447E-001	5.789E-002
U-234	4.658E+001	pCi/L	1.550E+000	4.208E+000	1.270E-001	5.473E-002
U-235	1.869E+000	pCi/L	3.471E-001	3.810E-001	8.392E-002	2.408E-002
U-238	4.631E+001	pCi/L	1.544E+000	4.185E+000	9.110E-002	3.345E-002

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDurationTracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H090401-017	MV2RV1AA	500.1300 mL	1.00	2.00	AV69	8/15/12 15:53	240.00Rad11-0087	U-232	6.978E+000	91.88%	False	False

Analyte	Activity		CountUnc	TotalUnc	MDA	DLC
U-232	6.412E+000	pCi/L	6.144E-001	8.170E-001	8.582E-002	2.431E-002
U-234	9.018E+000	pCi/L	7.315E-001	1.053E+000	7.865E-002	2.438E-002
U-235	1.291E-001	pCi/L	9.758E-002	9.818E-002	4.990E-002	2.145E-002
U-238	2.725E+000	pCi/L	4.025E-001	4.631E-001	8.714E-002	2.980E-002

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDurationTracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
F2H090401-018	MV2RW1AA	500.3900	1.00	2.00	AV70	8 / 15 / 12 15:53	240.00Rad11-0087	U-232	6.974E+000	74.90%	False	False
	mL	*Analyte*		*Activity*			*CountUnc*	*TotalUnc*	*MDA*	*DLC*		
		U-232		**5.224E+000**	pCi/L		6.845E-001	8.131E-001	1.280E-001	4.261E-002		
		U-234		**3.448E+001**	pCi/L		1.592E+000	3.305E+000	9.747E-002	3.021E-002		
		U-235		**1.571E+000**	pCi/L		3.799E-001	4.021E-001	1.039E-001	2.658E-002		
		U-238		**3.346E+001**	pCi/L		1.567E+000	3.218E+000	9.727E-002	3.015E-002		
F2H090401-018D	MV2RW1AD	500.3500	1.00	2.00	AV71	8 / 15 / 12 23:44	400.00Rad11-0087	U-232	6.975E+000	70.66%	False	False
	mL	*Analyte*		*Activity*			*CountUnc*	*TotalUnc*	*MDA*	*DLC*		
		U-232		**4.928E+000**	pCi/L		5.431E-001	6.829E-001	9.784E-002	3.460E-002		
		U-234		**3.912E+001**	pCi/L		1.345E+000	3.551E+000	3.126E-002	1.735E-002		
		U-238		**3.941E+001**	pCi/L		1.349E+000	3.574E+000	8.948E-002	3.462E-002		
F2H090401-018S	MV2RW1AC	500.1200	1.00	2.00	AV74	8 / 15 / 12 23:44	400.00Rad11-0087	U-232	6.978E+000	71.10%	False	False
	mL	*Analyte*		*Activity*			*CountUnc*	*TotalUnc*	*MDA*	*DLC*		
		U-232		**4.961E+000**	pCi/L		5.478E-001	6.883E-001	9.950E-002	3.518E-002		
		U-234		**4.037E+001**	pCi/L		1.378E+000	3.660E+000	7.378E-002	2.495E-002		
		U-238		**4.087E+001**	pCi/L		1.384E+000	3.702E+000	3.173E-002	1.761E-002		
F2H090401-019	MV2RX1AA	500.0600	1.00	2.00	AV75	8 / 15 / 12 15:53	240.00Rad11-0087	U-232	6.979E+000	71.74%	False	False
	mL	*Analyte*		*Activity*			*CountUnc*	*TotalUnc*	*MDA*	*DLC*		
		U-232		**5.007E+000**	pCi/L		7.100E-001	8.252E-001	1.375E-001	4.579E-002		
		U-234		**2.872E+001**	pCi/L		1.506E+000	2.844E+000	8.972E-002	2.296E-002		
		U-235		**1.664E+000**	pCi/L		4.053E-001	4.287E-001	1.116E-001	2.857E-002		
		U-238		**2.940E+001**	pCi/L		1.522E+000	2.901E+000	1.045E-001	3.241E-002		
F2H090401-020	MV2R11AA	500.2400	1.00	2.00	AV76	8 / 15 / 12 23:44	400.00Rad11-0087	U-232	6.976E+000	72.60%	False	False
	mL	*Analyte*		*Activity*			*CountUnc*	*TotalUnc*	*MDA*	*DLC*		
		U-232		**5.065E+000**	pCi/L		5.398E-001	6.873E-001	9.663E-002	3.417E-002		
		U-234		**1.990E+001**	pCi/L		9.541E-001	1.925E+000	1.072E-001	4.533E-002		
		U-235		**1.083E+000**	pCi/L		2.565E-001	2.721E-001	1.461E-001	6.396E-002		
		U-238		**2.001E+001**	pCi/L		9.553E-001	1.933E+000	8.838E-002	3.420E-002		
F2H090401-021	MV2R21AA	500.0500	1.00	2.00	AV77	8 / 15 / 12 23:44	400.00Rad11-0087	U-232	6.979E+000	80.60%	False	False
	mL	*Analyte*		*Activity*			*CountUnc*	*TotalUnc*	*MDA*	*DLC*		
		U-232		**5.625E+000**	pCi/L		5.173E-001	7.006E-001	9.548E-002	3.505E-002		
		U-234		**9.276E+000**	pCi/L		6.247E-001	9.987E-001	9.834E-002	4.159E-002		
		U-235		**4.299E-001**	pCi/L		1.497E-001	1.540E-001	3.525E-002	1.956E-002		
		U-238		**9.503E+000**	pCi/L		6.304E-001	1.017E+000	5.468E-002	1.569E-002		
F2H090401-022	MV2R41AA	500.0600	1.00	2.00	AV78	8 / 15 / 12 23:44	400.00Rad11-0087	U-232	6.979E+000	42.90%	False	False
	mL	*Analyte*		*Activity*			*CountUnc*	*TotalUnc*	*MDA*	*DLC*		
		U-232		**2.994E+000**	pCi/L		6.979E-001	7.419E-001	1.092E-001	2.862E-002		
		U-234		**9.133E+001**	pCi/L		2.643E+000	8.115E+000	1.201E-001	4.059E-002		
		U-235		**4.581E+000**	pCi/L		6.612E-001	7.650E-001	1.245E-001	3.572E-002		
		U-238		**8.981E+001**	pCi/L		2.618E+000	7.985E+000	1.351E-001	4.962E-002		
F2H130000-015B	MV35H1AA	1000.0000	1.00	2.00	AV121	8 / 15 / 12 15:52	240.00Rad11-0087	U-232	3.490E+000	86.74%	False	False
	mL	*Analyte*		*Activity*			*CountUnc*	*TotalUnc*	*MDA*	*DLC*		

LOT # F2H090401-REV
141 of 672
TestAmerica St. Louis

Sample ID	Work Order #	Aliquot	Dilution	Sigma	Instrument	RunDateTime	RunDuration	TracerID	TracerAnalyte	TracerAdded	TracerYield	TruncYld	Decay
				U-232		3.027E+000	pCi/L	3.126E-001	4.029E-001	3.806E-002	8.901E-003		
				U-234		5.756E-003	pCi/L	1.582E-002	1.583E-002	3.488E-002	8.926E-003		
				U-235		0.000E+000	pCi/L	4.775E-003	4.775E-003	2.584E-002	1.111E-002		
				U-238		5.744E-003	pCi/L	1.579E-002	1.580E-002	3.481E-002	8.909E-003		
F2H130000-015C	MV35H1AC	1000.0000	1.00	2.00	AV122	8/15/12 15:52	240.00	Rad11-0087	U-232	3.490E+000	91.95%	False	False
		mL		*Analyte*		*Activity*		*CountUnc*	*TotalUnc*	*MDA*	*DLC*		
				U-232		3.209E+000	pCi/L	3.118E-001	4.122E-001	3.788E-002	8.859E-003		
				U-234		3.288E+000	pCi/L	3.172E-001	4.206E-001	4.053E-002	1.256E-002		
				U-238		3.236E+000	pCi/L	3.143E-001	4.155E-001	4.045E-002	1.254E-002		

Laboratory Control Sample Information

Sample ID	WRKNO	Analyte	Activity	StdAdded	Recovery	LCL	UCL	ZFactor
F2H130000-015C	MV35H1AC	U-234	3.288E+000	3.265E+000	100.69%	84.00	120.00	0.0764
	MV35H1AC	U-238	3.236E+000	3.390E+000	95.44%	83.00	121.00	-0.5134

Sample Duplicate Information

Sample ID	Analyte	Sample Activity	Dup Sample ID	Dup Activity	RPD	RER	DER	Qualifier	ZFactor
F2H090401-018S	U-234	4.037E+001	F2H090401-018D	3.912E+001	3.13%	1.723E-001	4.874E-001		0.4874
F2H090401-018S	U-238	4.087E+001	F2H090401-018D	3.941E+001	3.65%	2.011E-001	5.687E-001		0.5687

Matrix Spike Information

SampID	SampMSID	Analyte	Sample Activity	MS Activity	StdAdded	MSRecovery
F2H090401-018	F2H090401-018S	U-238	3.346E+001	4.087E+001	6.779E+000	109.33% 68-143
F2H090401-018	F2H090401-018D	U-234	3.448E+001	3.912E+001	6.526E+000	71.14% 65-146
F2H090401-018	F2H090401-018D	U-238	3.346E+001	3.941E+001	6.775E+000	87.78% 68-143
F2H090401-018	F2H090401-018S	U-234	3.448E+001	4.037E+001	6.529E+000	90.14% 65-146

Blanks Information

SampID	WRKNO	Analyte	Activity	UncTotal	ZFactor
F2H130000-015B	MV35H1AA	U-234	5.756E-003	1.583E-002	0.7273
F2H130000-015B	MV35H1AA	U-235	0.000E+000	4.775E-003	0.0000
F2H130000-015B	MV35H1AA	U-238	5.744E-003	1.580E-002	0.7273

LOT # F2H090401-REV

142 of 672

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Comments for Batch: 2226015

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045

Lot ID: F2H090401 **PM:** LMF
Client: 522706 Shaw Environmental & Infrastructure Inc
QuoteNo: 89251 **Site:** Guterl Steel
RcptDate: 20120808 **TICFlag:** N
AnalDueDate: 20120822 **QualFlag:** Y
RptDueDate: 20120822
Report Type: D Expanded Deliverable

F2H090401012

Extraction: H& Extraction Chromatography, Sequential Actinides (Dissolved)

WRKNO	Analyte	RL	Method	MDL
MV2RN1AA	Uranium 234	1E-01 pCi/L	2M A-01-R	
MV2RN1AA	Uranium 235/236	1E-01 pCi/L	2M A-01-R	
MV2RN1AA	Uranium 238	1E-01 pCi/L	2M A-01-R	

F2H090401013

Extraction: H& Extraction Chromatography, Sequential Actinides (Dissolved)

WRKNO	Analyte	RL	Method	MDL
MV2RP1AA	Uranium 234	1E-01 pCi/L	2M A-01-R	
MV2RP1AA	Uranium 235/236	1E-01 pCi/L	2M A-01-R	
MV2RP1AA	Uranium 238	1E-01 pCi/L	2M A-01-R	

F2H090401014

Extraction: H& Extraction Chromatography, Sequential Actinides (Dissolved)

WRKNO	Analyte	RL	Method	MDL
MV2RQ1AA	Uranium 234	1E-01 pCi/L	2M A-01-R	
MV2RQ1AA	Uranium 235/236	1E-01 pCi/L	2M A-01-R	
MV2RQ1AA	Uranium 238	1E-01 pCi/L	2M A-01-R	

F2H090401015

Extraction: H& Extraction Chromatography, Sequential Actinides (Dissolved)

WRKNO	Analyte	RL	Method	MDL
MV2RR1AA	Uranium 234	1E-01 pCi/L	2M A-01-R	
MV2RR1AA	Uranium 235/236	1E-01 pCi/L	2M A-01-R	
MV2RR1AA	Uranium 238	1E-01 pCi/L	2M A-01-R	

F2H090401016

Extraction: H& Extraction Chromatography, Sequential Actinides (Dissolved)

WRKNO	Analyte	RL	Method	MDL
MV2RT1AA	Uranium 234	1E-01 pCi/L	2M A-01-R	
MV2RT1AA	Uranium 235/236	1E-01 pCi/L	2M A-01-R	
MV2RT1AA	Uranium 238	1E-01 pCi/L	2M A-01-R	

F2H090401017

Extraction: H& Extraction Chromatography, Sequential Actinides (Dissolved)

WRKNO	Analyte	RL	Method	MDL
MV2RV1AA	Uranium 234	1E-01 pCi/L	2M A-01-R	
MV2RV1AA	Uranium 235/236	1E-01 pCi/L	2M A-01-R	
MV2RV1AA	Uranium 238	1E-01 pCi/L	2M A-01-R	

F2H090401018

Extraction: H& Extraction Chromatography, Sequential Actinides (Dissolved)

WRKNO	Analyte	RL	Method	MDL
MV2RW1AA	Uranium 234	1E-01 pCi/L	2M A-01-R	
MV2RW1AA	Uranium 235/236	1E-01 pCi/L	2M A-01-R	
MV2RW1AA	Uranium 238	1E-01 pCi/L	2M A-01-R	

F2H090401019

Extraction: H& Extraction Chromatography, Sequential Actinides (Dissolved)

WRKNO	Analyte	RL	Method	MDL
MV2RX1AA	Uranium 234	1E-01 pCi/L	2M A-01-R	
MV2RX1AA	Uranium 235/236	1E-01 pCi/L	2M A-01-R	
MV2RX1AA	Uranium 238	1E-01 pCi/L	2M A-01-R	

F2H090401020

Extraction: H& Extraction Chromatography, Sequential Actinides (Dissolved)

WRKNO	Analyte	RL	Method	MDL
MV2R11AA	Uranium 234	1E-01 pCi/L	2M A-01-R	
MV2R11AA	Uranium 235/236	1E-01 pCi/L	2M A-01-R	
MV2R11AA	Uranium 238	1E-01 pCi/L	2M A-01-R	

F2H090401021

Extraction: H& Extraction Chromatography, Sequential Actinides (Dissolved)

WRKNO	Analyte	RL	Method	MDL
MV2R21AA	Uranium 234	1E-01 pCi/L	2M A-01-R	
MV2R21AA	Uranium 235/236	1E-01 pCi/L	2M A-01-R	
MV2R21AA	Uranium 238	1E-01 pCi/L	2M A-01-R	

F2H090401022

Extraction: H& Extraction Chromatography, Sequential Actinides (Dissolved)

WRKNO	Analyte	RL	Method	MDL
MV2R41AA	Uranium 234	1E-01 pCi/L	2M A-01-R	
MV2R41AA	Uranium 235/236	1E-01 pCi/L	2M A-01-R	
MV2R41AA	Uranium 238	1E-01 pCi/L	2M A-01-R	

Comments

DoD QSM 4.1
please use 6020 for total uranium istead of 200.8

Sample Comments

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:53:01PM 8/15/2012

Sample

Sample Name: F2H090401-012
SampleType: Sample
: MV2RN1AA
Sample Collection Date: 8/3/2012 1:40:00PM

Spectrum #1 Analysis #1
Sample Volume : 0.5002L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226015
AnalysisID: 535628

Analyst: 60040

Tracer

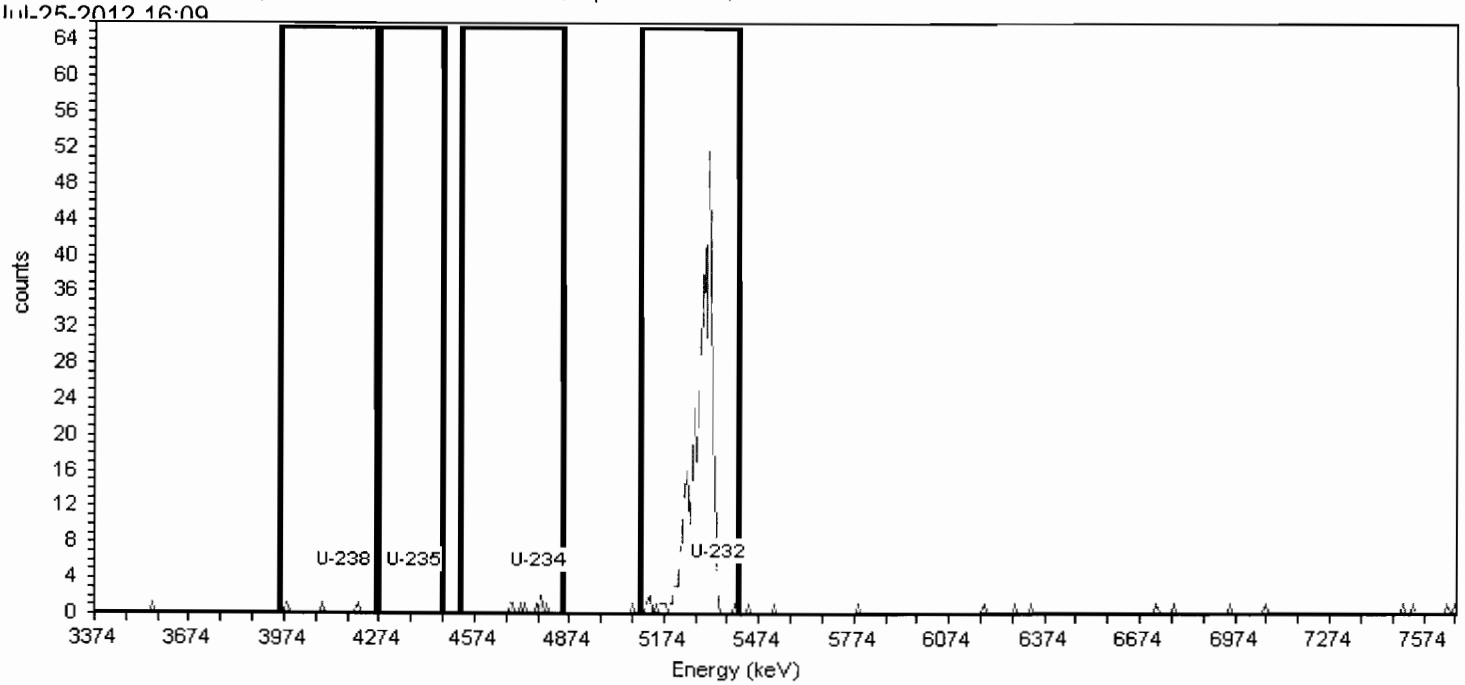
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 74.63%

Acquisition

Detector: AV64
Serial Number: 47-029ee4
Acquisition Start Date: 8/15/2012 3:53:25PM
Live Time: 240.00 min.
Real Time: 240.01 min.
Background Date: 7/25/2012 4:09:57PM
Background Info: Sample: ICB;AV64; Det: AV64; Spectrum #1;
Jul-25-2012 16:09

Calibration Name: IC-7107;AV64-20120610
Calibration Date: 6/11/2012 3:30:09PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²
Efficiency: 29.35% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 3:50:52PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	28.500	100.0	3	1.0000	2.00	**3.426E-002**	6.177E-002	6.18E-002	3.986E-002	1.094E-001
U-235	4381.179	4269.316	4470.670	.000	80.2	0	0.0000	0.00	**0.000E+000**	2.136E-002	2.14E-002	2.485E-002	5.780E-002
U-234	4776.430	4530.331	4851.005	120.223	99.8	8	0.2500	7.75	**1.330E-001**	9.749E-002	9.81E-002	1.997E-002	7.802E-002
U-232	5343.203	5097.104	5410.321	59.407	100.1	375	2.5000	372.50	**5.208E+000**	6.635E-001	7.95E-001	6.297E-002	1.596E-001

TestAmerica St. Louis
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:53:32PM 8/15/2012

Sample

Sample Name: F2H090401-013
SampleType: Sample
: MV2RP1AA
Sample Collection Date: 8/3/2012 3:20:00PM

Spectrum #1 Analysis #1
Sample Volume : 0.5001L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226015
AnalysisID: 535629

Analyst: 60040

Tracer

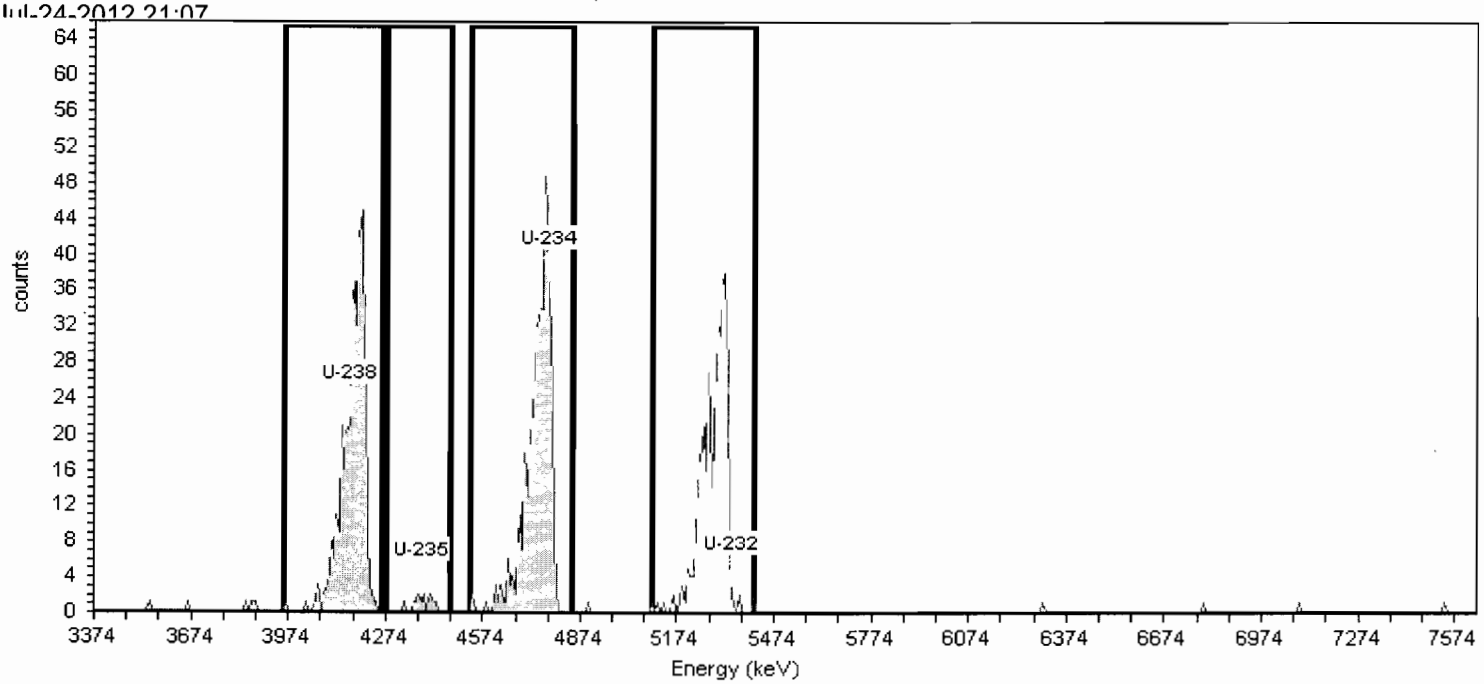
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 78.47%

Acquisition

Detector: AV65
Serial Number: 44-049JJ1
Acquisition Start Date: 8/15/2012 3:53:26PM
Live Time: 240.00 min.
Real Time: 240.01 min.
Background Date: 7/24/2012 9:07:24PM
Background Info: Sample: ICB;AV65; Det: AV65; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: IC-8874;AV65-20120610
Calibration Date: 6/11/2012 3:30:33PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²
Efficiency: 27.59% +/- 0.39% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 3:50:52PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	67.032	100.0	386	0.5000	385.50	**6.682E+000**	6.812E-001	8.83E-001	2.851E-002	9.198E-002
U-235	4381.179	4269.316	4470.670	30.295	80.2	13	0.5000	12.50	**2.701E-001**	1.566E-001	1.58E-001	3.555E-002	1.147E-001
U-234	4776.430	4530.331	4851.005	65.486	99.8	419	0.7500	418.25	**7.264E+000**	7.112E-001	9.37E-001	3.499E-002	1.023E-001
U-232	5343.203	5097.104	5410.321	87.804	100.1	369	0.7500	368.25	**5.476E+000**	6.655E-001	8.09E-001	3.489E-002	1.117E-001

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:53:38PM 8/15/2012

Sample

Sample Name: F2H090401-014
SampleType: Sample
: MV2RQ1AA
Sample Collection Date: 8/6/2012 9:20:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5000L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226015
AnalysisID: 535630

Analyst: 60040

Tracer

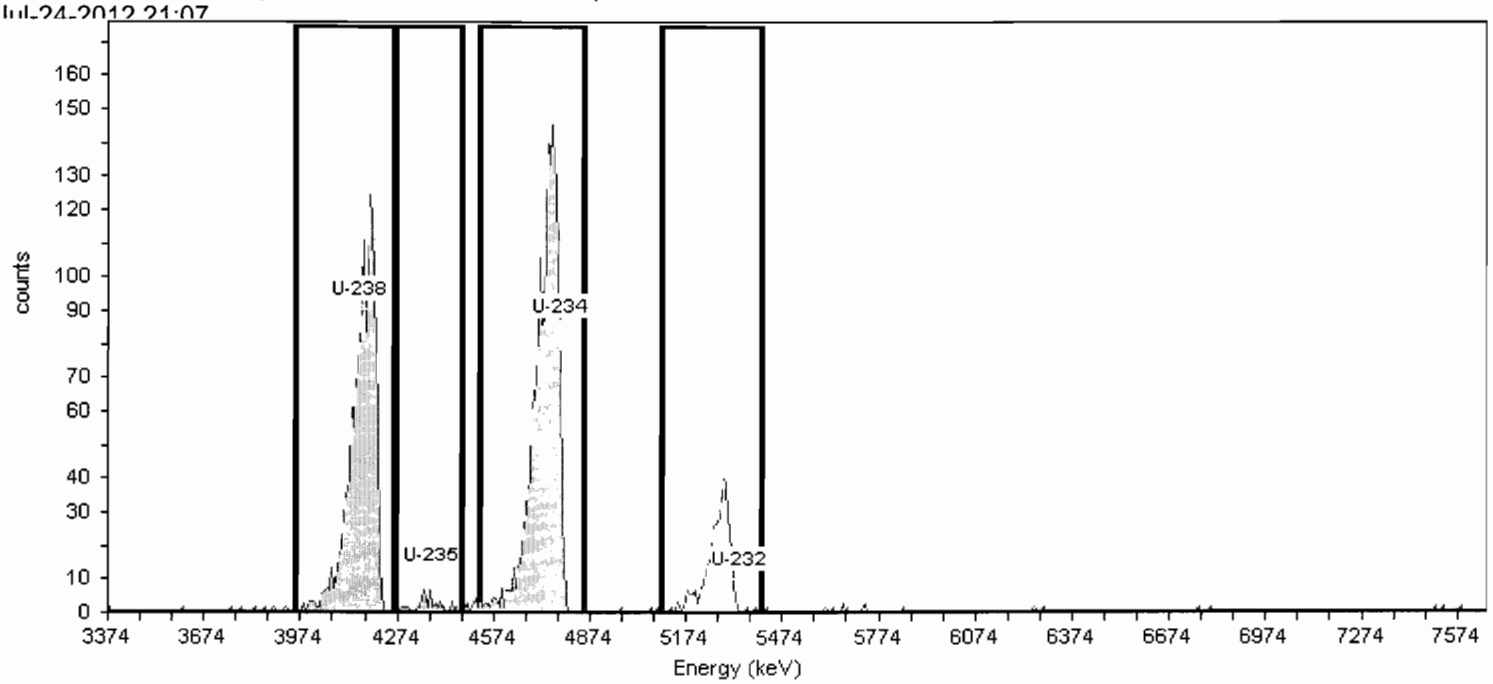
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 72.82%

Acquisition

Detector: AV66
Serial Number: 48-158EE2
Acquisition Start Date: 8/15/2012 3:53:27PM
Live Time: 240.00 min.
Real Time: 240.01 min.
Background Date: 7/24/2012 9:07:26PM
Background Info: Sample: ICB;AV66; Det: AV66; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: IC-8875;AV66-20120610
Calibration Date: 6/11/2012 3:30:58PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²
Efficiency: 28.46% +/- 0.39% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 3:50:52PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	78.952	100.0	1229	0.2500	1228.75	**2.225E+001**	1.270E+000	2.26E+000	2.106E-002	8.231E-002
U-235	4381.179	4269.316	4470.670	40.831	80.2	36	0.0000	36.00	**8.128E-001**	2.709E-001	2.79E-001	2.626E-002	6.110E-002
U-234	4776.430	4530.331	4851.005	75.352	99.8	1522	0.2500	1521.75	**2.761E+001**	1.416E+000	2.72E+000	2.111E-002	8.247E-002
U-232	5343.203	5097.104	5410.321	65.165	100.1	353	0.5000	352.50	**5.083E+000**	6.800E-001	8.03E-001	2.976E-002	1.051E-001

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045

8:54:47AM 8/16/2012

Sample

Sample Name: F2H090401-015
SampleType: Sample
: MV2RR1AA
Sample Collection Date: 8/6/2012 10:05:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5001L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226015
AnalysisID: 535778

Analyst: 60040

Tracer

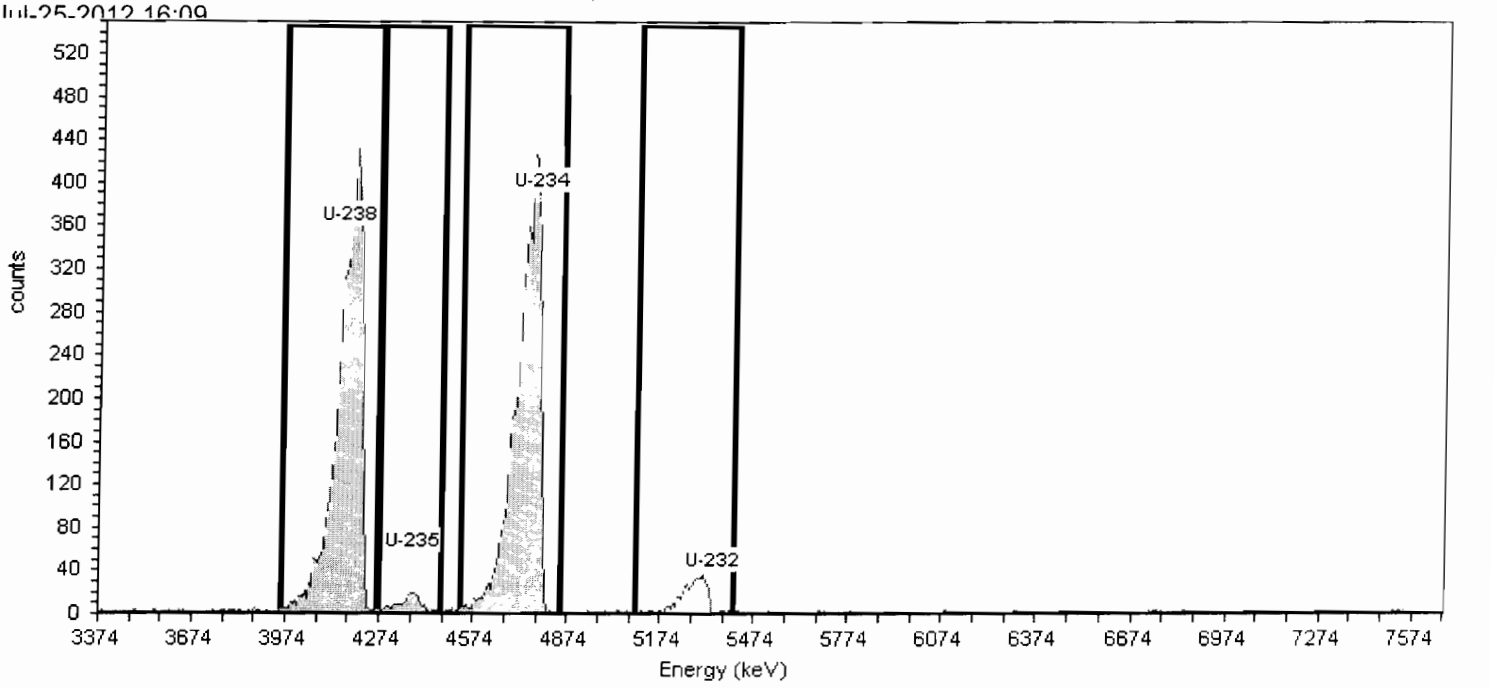
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 47.10%

Acquisition

Detector: AV67
Serial Number: 48-046II7
Acquisition Start Date: 8/15/2012 11:44:20PM
Live Time: 400.00 min.
Real Time: 400.05 min.
Background Date: 7/25/2012 4:09:59PM
Background Info: Sample: ICB;AV67; Det: AV67; Spectrum #1;
Jul-25-2012 16:09

Calibration Name: IC-8876;AV67-20120610
Calibration Date: 6/11/2012 3:31:27PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 29.53% +/- 0.33% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:42:50PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	78.222	100.0	4790	0.8333	4789.17	**7.753E+001**	2.241E+000	6.89E+000	3.438E-002	1.017E-001
U-235	4381.179	4269.316	4470.670	51.582	80.2	182	0.0000	182.00	**3.674E+000**	5.446E-001	6.26E-001	3.031E-002	5.462E-002
U-234	4776.430	4530.331	4851.005	80.866	99.8	4851	2.0833	4848.92	**7.865E+001**	2.260E+000	6.98E+000	5.447E-002	1.356E-001
U-232	5343.203	5097.104	5410.321	85.030	100.1	398	3.7500	394.25	**3.287E+000**	6.466E-001	7.03E-001	7.287E-002	1.821E-001

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:54:52AM 8/16/2012

Sample

Sample Name: F2H090401-016

SampleType: Sample
: MV2RT1AA
Sample Collection Date: 8/6/2012 11:45:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5001L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226015
AnalysisID: 535779

Analyst: 60040

Tracer

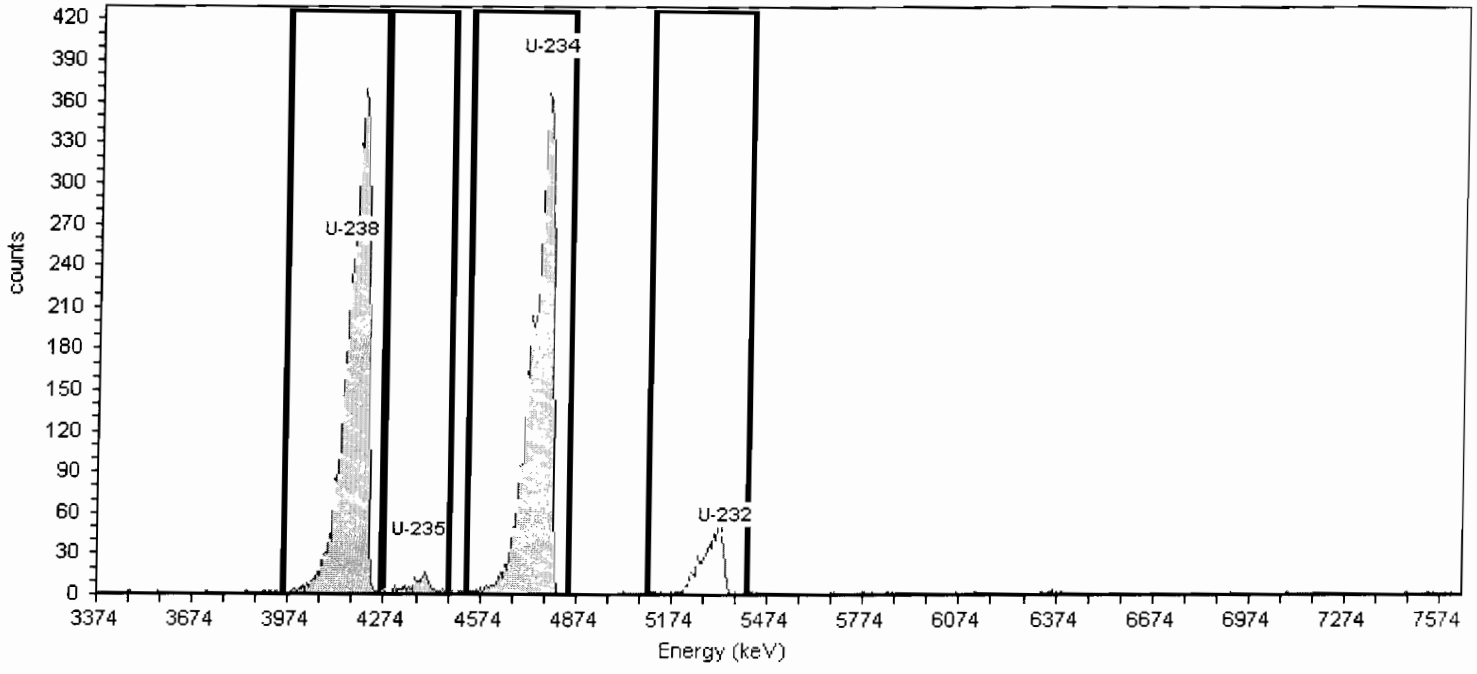
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 63.90%

Acquisition

Detector: AV68
Serial Number: 48-45884
Acquisition Start Date: 8/15/2012 11:44:22PM
Live Time: 400.00 min.
Real Time: 400.05 min.
Background Date: 7/24/2012 9:07:30PM
Background Info: Sample: ICB;AV68; Det: AV68; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: IC-8877;AV68-20120610
Calibration Date: 6/11/2012 3:31:53PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.40% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:42:50PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	71.633	100.0	3602	1.2500	3600.75	**4.631E+001**	1.544E+000	4.18E+000	3.345E-002	9.110E-002
U-235	4381.179	4269.316	4470.670	51.664	80.2	117	0.4167	116.58	**1.869E+000**	3.471E-001	3.81E-001	2.408E-002	8.392E-002
U-234	4776.430	4530.331	4851.005	75.188	99.8	3618	3.3333	3614.67	**4.658E+001**	1.550E+000	4 21E+000	5.473E-002	1.270E-001
U-232	5343.203	5097.104	5410.321	80.600	100.1	500	3.7500	496.25	**4.459E+000**	5.755E-001	6.87E-001	5.789E-002	1.447E-001

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045

7:54:04PM 8/15/2012

Sample

Sample Name: F2H090401-017
SampleType: Sample
: MV2RV1AA
Sample Collection Date: 8/6/2012 12:25:00PM

Spectrum #1 Analysis #1
Sample Volume : 0.5001L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226015
AnalysisID: 535633

Analyst: 60040

Tracer

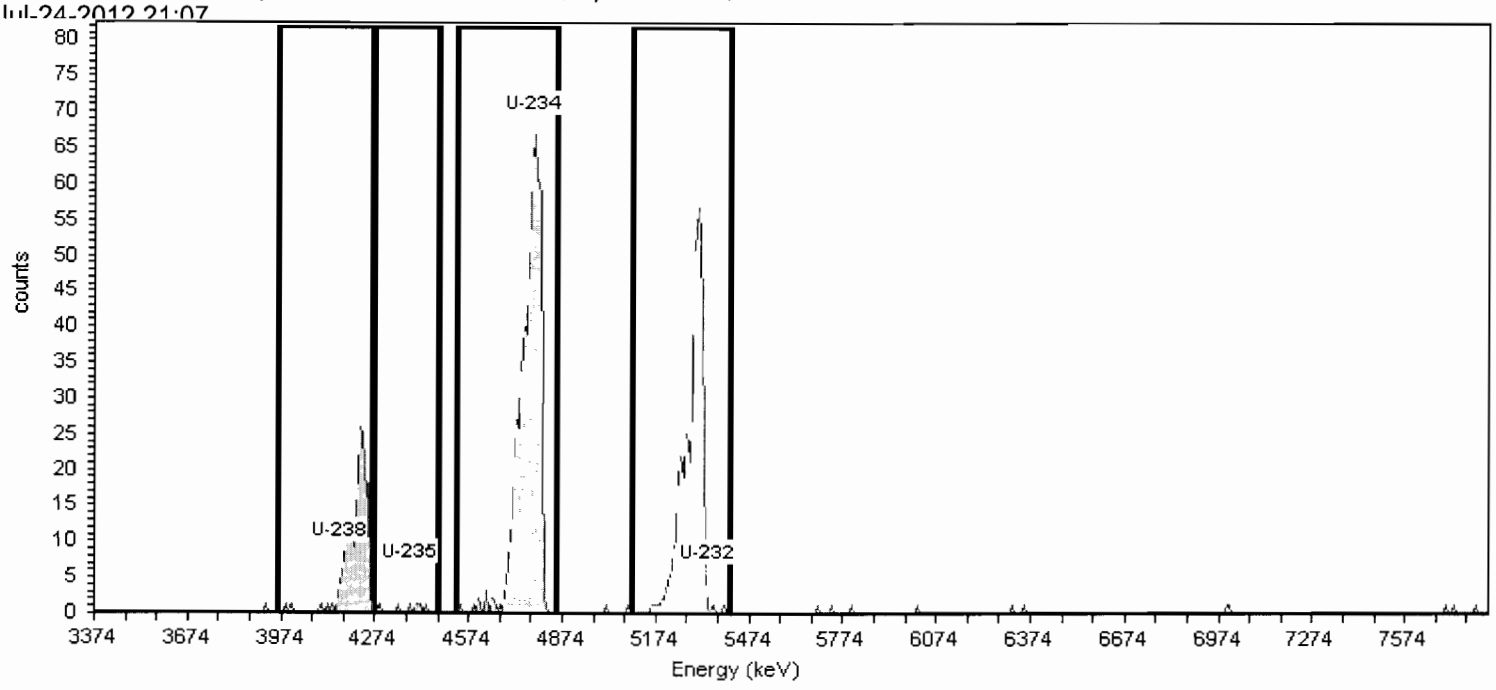
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 91.88%

Acquisition

Detector: AV69
Serial Number: 49-155DD5
Acquisition Start Date: 8/15/2012 3:53:32PM
Live Time: 240.00 min.
Real Time: 240.01 min.
Background Date: 7/24/2012 9:07:31PM
Background Info: Sample: ICB;AV69; Det: AV69; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: ICV-8877;AV69-20120611a
Calibration Date: 6/11/2012 4:44:35PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²
Efficiency: 27.62% +/- 0.44% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 3:50:52PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	30.290	100.0	185	0.7500	184.25	**2.725E+000**	4.025E-001	4.63E-001	2.980E-002	8.714E-002
U-235	4381.179	4269.316	4470.670	24.729	80.2	7	0.0000	7.00	**1.291E-001**	9.758E-002	9.82E-002	2.145E-002	4.990E-002
U-234	4776.430	4530.331	4851.005	69.424	99.8	609	0.5000	608.50	**9.018E+000**	7.315E-001	1.05E+000	2.438E-002	7.865E-002
U-232	5343.203	5097.104	5410.321	58.160	100.1	432	0.5000	431.50	**6.412E+000**	6.144E-001	8.17E-001	2.431E-002	8.582E-002

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:54:12PM 8/15/2012

Sample

Sample Name: F2H090401-018
SampleType: Sample
: MV2RW1AA
Sample Collection Date: 8/6/2012 12:00:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5004L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226015
AnalysisID: 535634

Analyst: 60040

Tracer

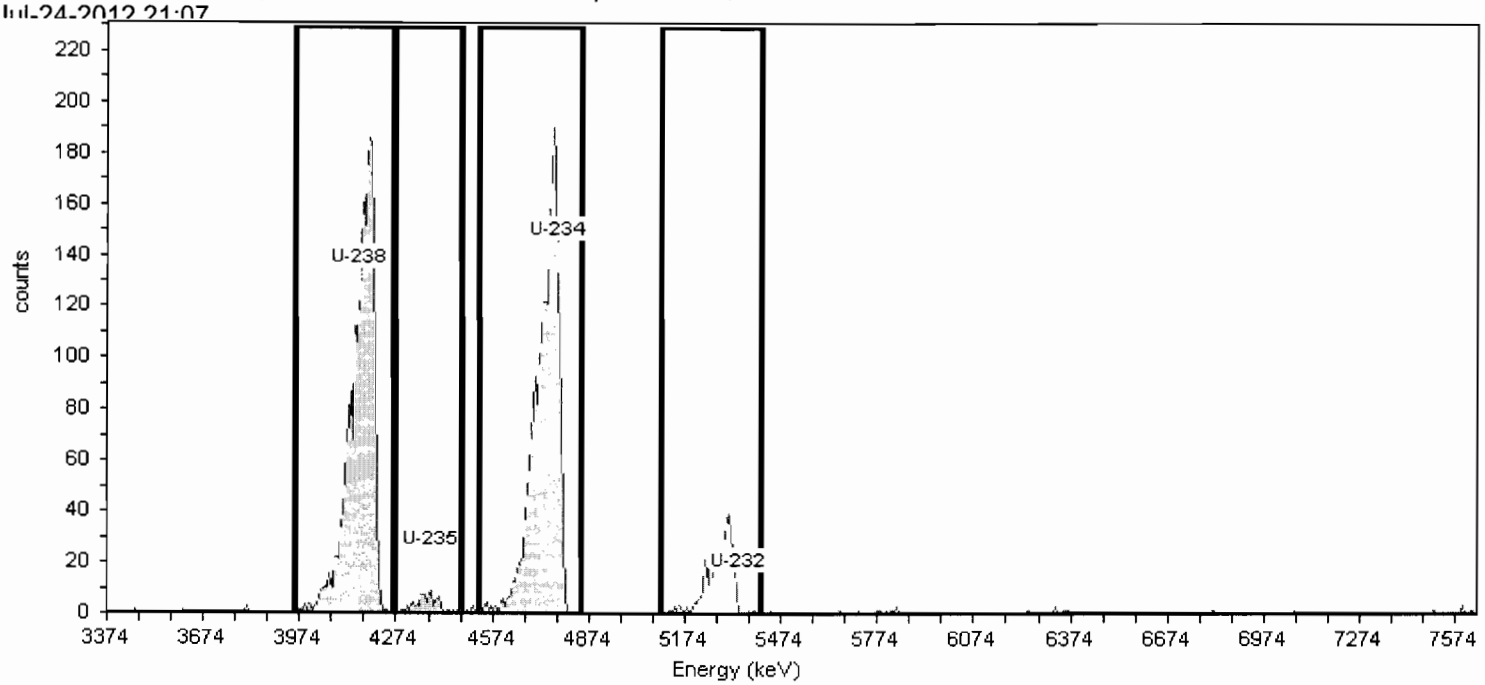
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 74.90%

Acquisition

Detector: AV70
Serial Number: 48-158FF1
Acquisition Start Date: 8/15/2012 3:53:33PM
Live Time: 240.00 min.
Real Time: 240.01 min.
Background Date: 7/24/2012 9:07:33PM
Background Info: Sample: ICB;AV70; Det: AV70; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: IC-8879;AV70-20120610
Calibration Date: 6/11/2012 3:32:41PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.32% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 3:50:52PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	70.942	100.0	1826	0.5000	1825.50	**3.346E+001**	1.567E+000	3.22E+000	3.015E-002	9.727E-002
U-235	4381.179	4269.316	4470.670	66.891	80.2	69	0.2500	68.75	**1.571E+000**	3.799E-001	4.02E-001	2.658E-002	1.039E-001
U-234	4776.430	4530.331	4851.005	79.345	99.8	1878	0.5000	1877.50	**3.448E+001**	1.592E+000	3.31E+000	3.021E-002	9.747E-002
U-232	5343.203	5097.104	5410.321	84.752	100.1	349	1.0000	348.00	**5.224E+000**	6.845E-001	8.13E-001	4.261E-002	1.280E-001

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:54:58AM 8/16/2012

Sample

Sample Name: F2H090401-018D
SampleType: Sample
: MV2RW1AD
Sample Collection Date: 8/6/2012 12:00:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5004L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226015
AnalysisID: 535780

Analyst: 60040

Tracer

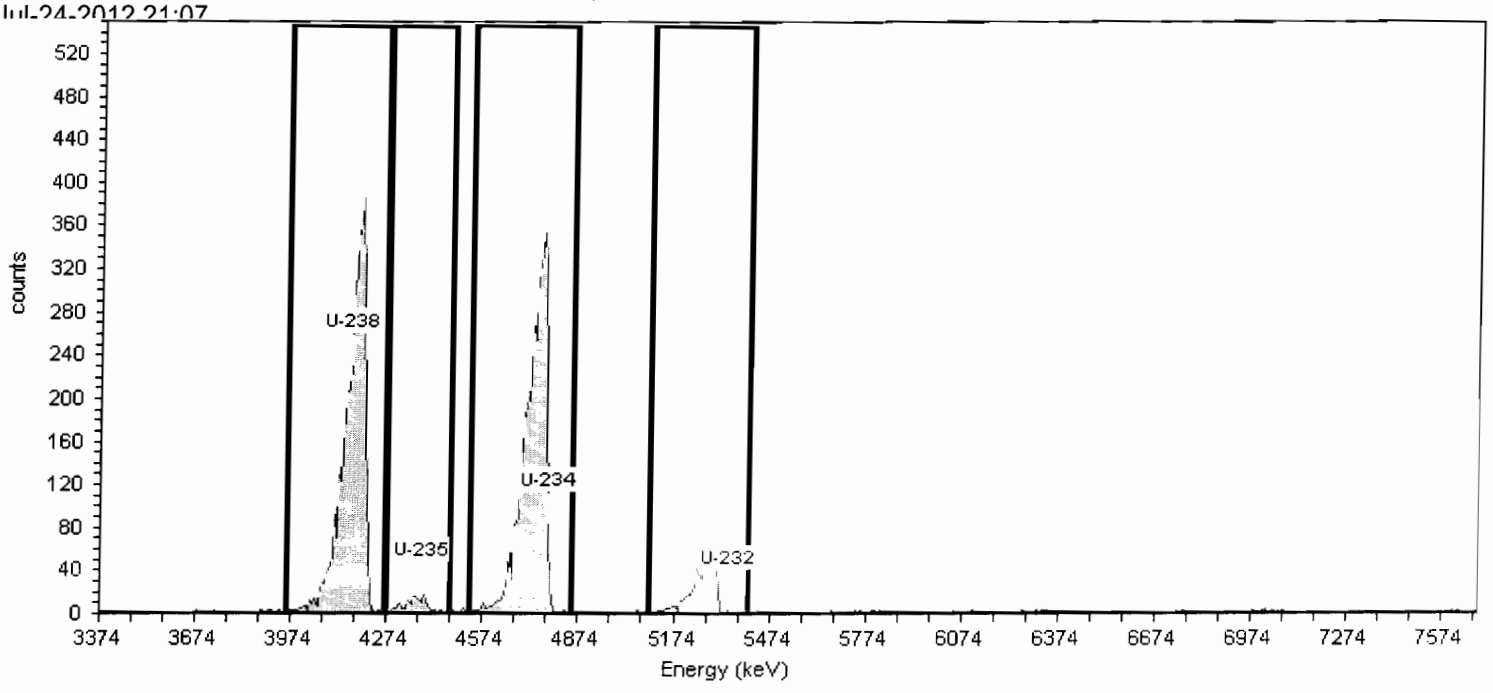
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 70.66%

Acquisition

Detector: AV71
Serial Number: 48-158EE6
Acquisition Start Date: 8/15/2012 11:44:23PM
Live Time: 400.00 min.
Real Time: 400.05 min.
Background Date: 7/24/2012 9:07:35PM
Background Info: Sample: ICB;AV71; Det: AV71; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: IC-9792;AV71-20120610
Calibration Date: 6/11/2012 3:33:08PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.63% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:42:50PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	64.950	100.0	3420	1.6667	3418.33	**3.941E+001**	1.349E+000	3.57E+000	3.462E-002	8.948E-002
U-235	4381.179	4269.316	4470.670	67.824	80.2	143	0.0000	143.00	**2.056E+000**	3.438E-001	3.85E-001	2.159E-002	3.890E-002
U-234	4776.430	4530.331	4851.005	73.692	99.8	3387	0.0000	3387.00	**3.912E+001**	1.345E+000	3.55E+000	1.735E-002	3.126E-002
U-232	5343.203	5097.104	5410.321	74.289	100.1	555	1.6667	553.33	**4.928E+000**	5.431E-001	6.83E-001	3.460E-002	9.784E-002

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:55:04AM 8/16/2012

Sample

Sample Name: F2H090401-018S

SampleType: Sample
: MV2RW1AC
Sample Collection Date: 8/6/2012 12:00:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5001L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226015
AnalysisID: 535781

Analyst: 60040

Tracer

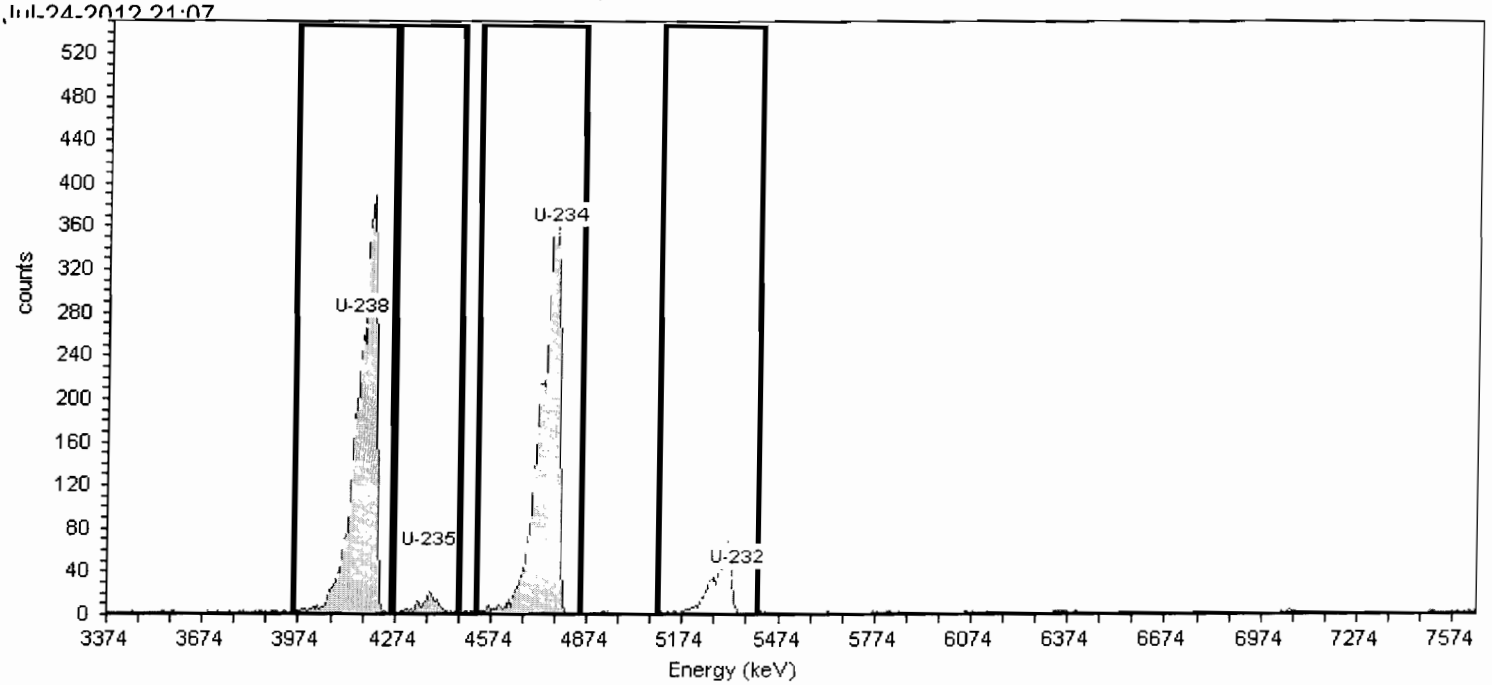
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 71.10%

Acquisition

Detector: AV74
Serial Number: 50-051C6
Acquisition Start Date: 8/15/2012 11:44:24PM
Live Time: 400.00 min.
Real Time: 400.05 min.
Background Date: 7/24/2012 9:07:39PM
Background Info: Sample: ICB;AV74; Det: AV74; Spectrum #1;
Jul-24-2012 21:07

Calibration Name: IC-9795;AV74-20120611a
Calibration Date: 6/12/2012 1:04:18AM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.01% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:42:50PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	68.675	100.0	3486	0.0000	3486.00	**4.087E+001**	1.384E+000	3.70E+000	1.761E-002	3.173E-002
U-235	4381.179	4269.316	4470.670	50.362	80.2	138	0.0000	138.00	**2.017E+000**	3.435E-001	3.83E-001	2.195E-002	3.956E-002
U-234	4776.430	4530.331	4851.005	69.664	99.8	3437	0.8333	3436.17	**4.037E+001**	1.378E+000	3.66E+000	2.495E-002	7.378E-002
U-232	5343.203	5097.104	5410.321	73.968	100.1	546	1.6667	544.33	**4.961E+000**	5.478E-001	6.88E-001	3.518E-002	9.950E-002

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:54:30PM 8/15/2012

Sample

Sample Name: F2H090401-019
SampleType: Sample
: MV2RX1AA
Sample Collection Date: 8/6/2012 3:20:00PM

Spectrum #1 Analysis #1
Sample Volume : 0.5001L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226015
AnalysisID: 535637

Analyst: 60040

Tracer

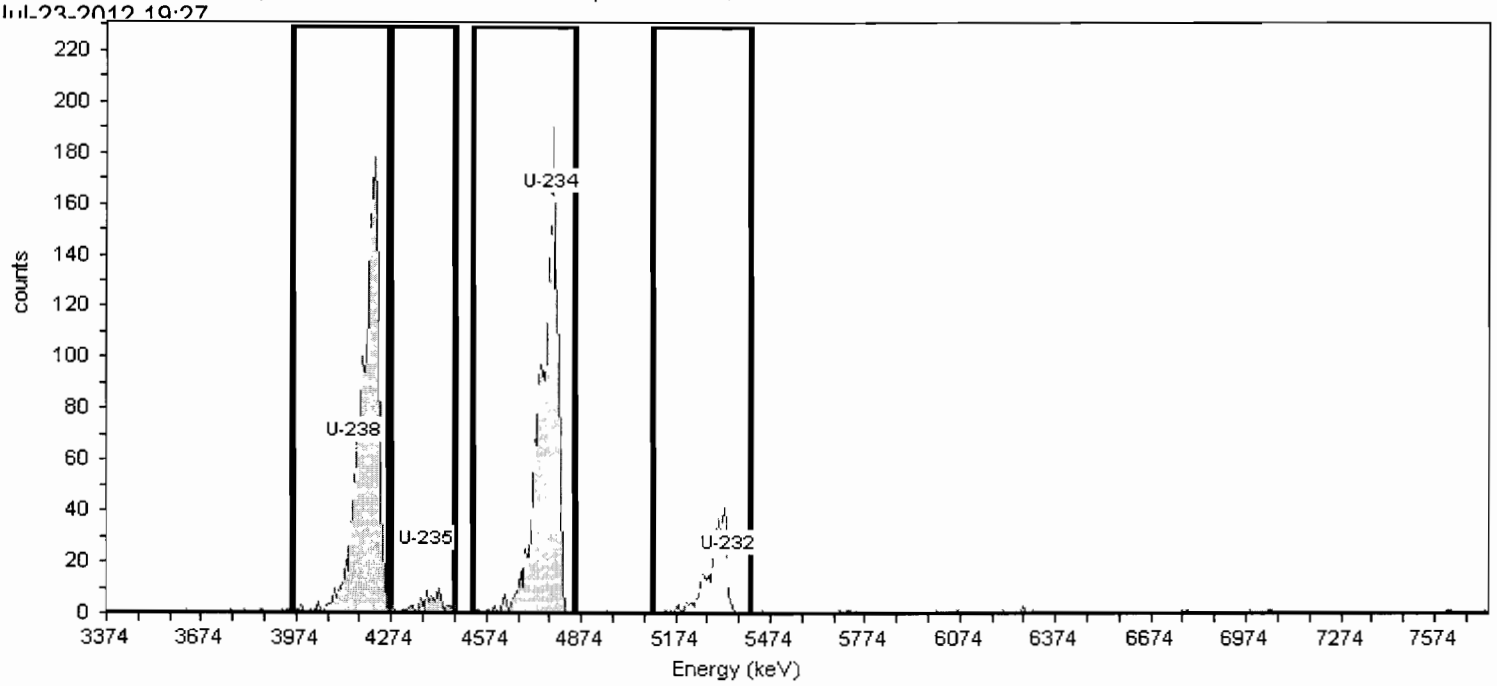
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 71.74%

Acquisition

Detector: AV75
Serial Number: 46-033P6
Acquisition Start Date: 8/15/2012 3:53:40PM
Live Time: 240.00 min.
Real Time: 240.01 min.
Background Date: 7/23/2012 7:27:05PM
Background Info: Sample: ICB;AV75; Det: AV75; Spectrum #1;
Jul-23-2012 19:27

Calibration Name: IC-9817;AV75-20120611a
Calibration Date: 6/12/2012 1:04:21AM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²
Efficiency: 26.56% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 3:50:52PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	33.125	100.0	1493	0.5000	1492.50	**2.940E+001**	1.522E+000	2.90E+000	3.241E-002	1.045E-001
U-235	4381.179	4269.316	4470.670	60.405	80.2	68	0.2500	67.75	**1.664E+000**	4.053E-001	4.29E-001	2.857E-002	1.116E-001
U-234	4776.430	4530.331	4851.005	69.691	99.8	1455	0.2500	1454.75	**2.872E+001**	1.506E+000	2.84E+000	2.296E-002	8.972E-002
U-232	5343.203	5097.104	5410.321	56.680	100.1	325	1.0000	324.00	**5.007E+000**	7.100E-001	8.25E-001	4.579E-002	1.375E-001

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:55:11AM 8/16/2012

Sample

Sample Name: F2H090401-020
SampleType: Sample
: MV2R11AA
Sample Collection Date: 8/6/2012 3:45:00PM

Spectrum #1 Analysis #1
Sample Volume : 0.5002L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226015
AnalysisID: 535782

Analyst: 60040

Tracer

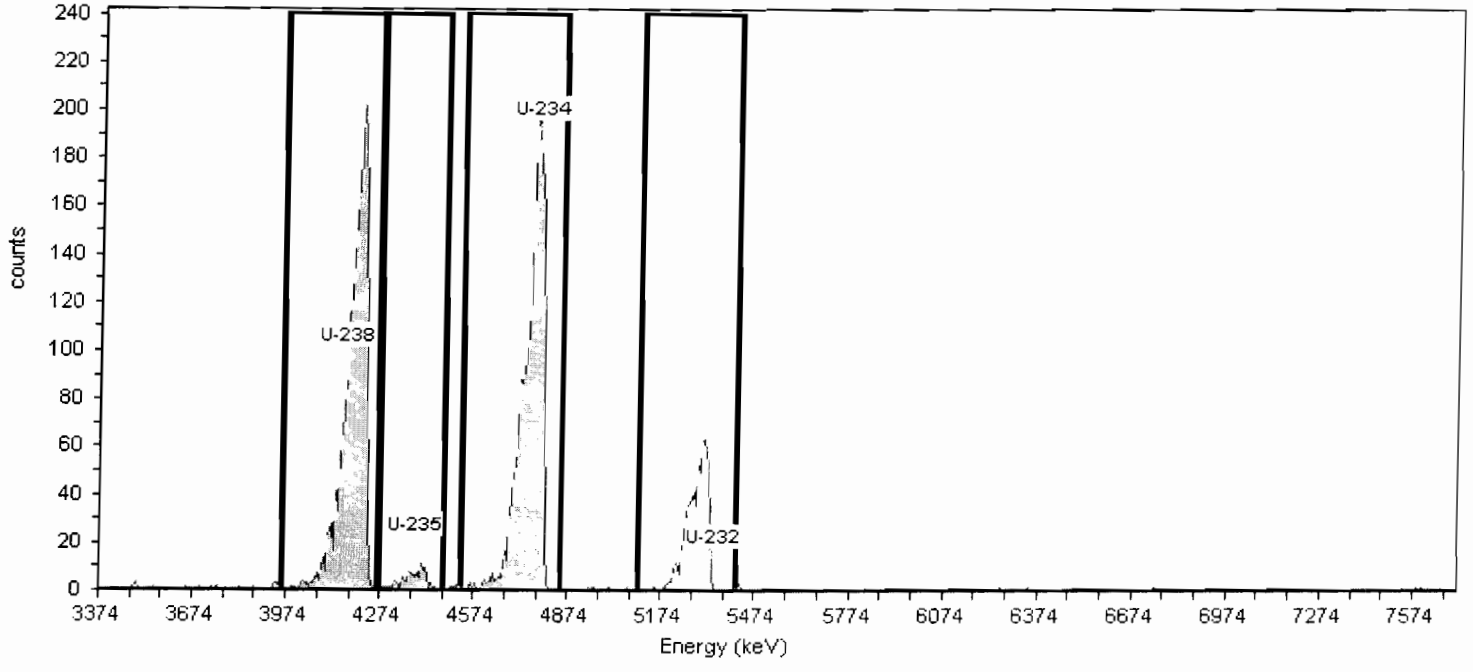
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 72.60%

Acquisition

Detector: AV76
Serial Number: 49-155N6
Acquisition Start Date: 8/15/2012 11:44:25PM
Live Time: 400.00 min.
Real Time: 400.02 min.
Background Date: 7/23/2012 7:27:06PM
Background Info: Sample: ICB;AV76; Det: AV76; Spectrum #1;
Jul-23-2012 19:27

Calibration Name: IC-9884;AV76-20120611a
Calibration Date: 6/12/2012 1:04:24AM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 27.23% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:42:50PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	67.481	100.0	1759	1.6667	1757.33	**2.001E+001**	9.553E-001	1.93E+000	3.420E-002	8.838E-002
U-235	4381.179	4269.316	4470.670	59.275	80.2	80	3.7500	76.25	**1.083E+000**	2.565E-001	2.72E-001	6.396E-002	1.461E-001
U-234	4776.430	4530.331	4851.005	61.884	99.8	1747	2.9167	1744.08	**1.990E+001**	9.541E-001	1.92E+000	4.533E-002	1.072E-001
U-232	5343.203	5097.104	5410.321	73.071	100.1	562	1.6667	560.33	**5.065E+000**	5.398E-001	6.87E-001	3.417E-002	9.663E-002

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:55:16AM 8/16/2012

Sample

Sample Name: F2H090401-021
SampleType: Sample
: MV2R21AA
Sample Collection Date: 8/6/2012 3:55:00PM

Spectrum #1 Analysis #1
Sample Volume : 0.5001L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226015
AnalysisID: 535783

Analyst: 60040

Tracer

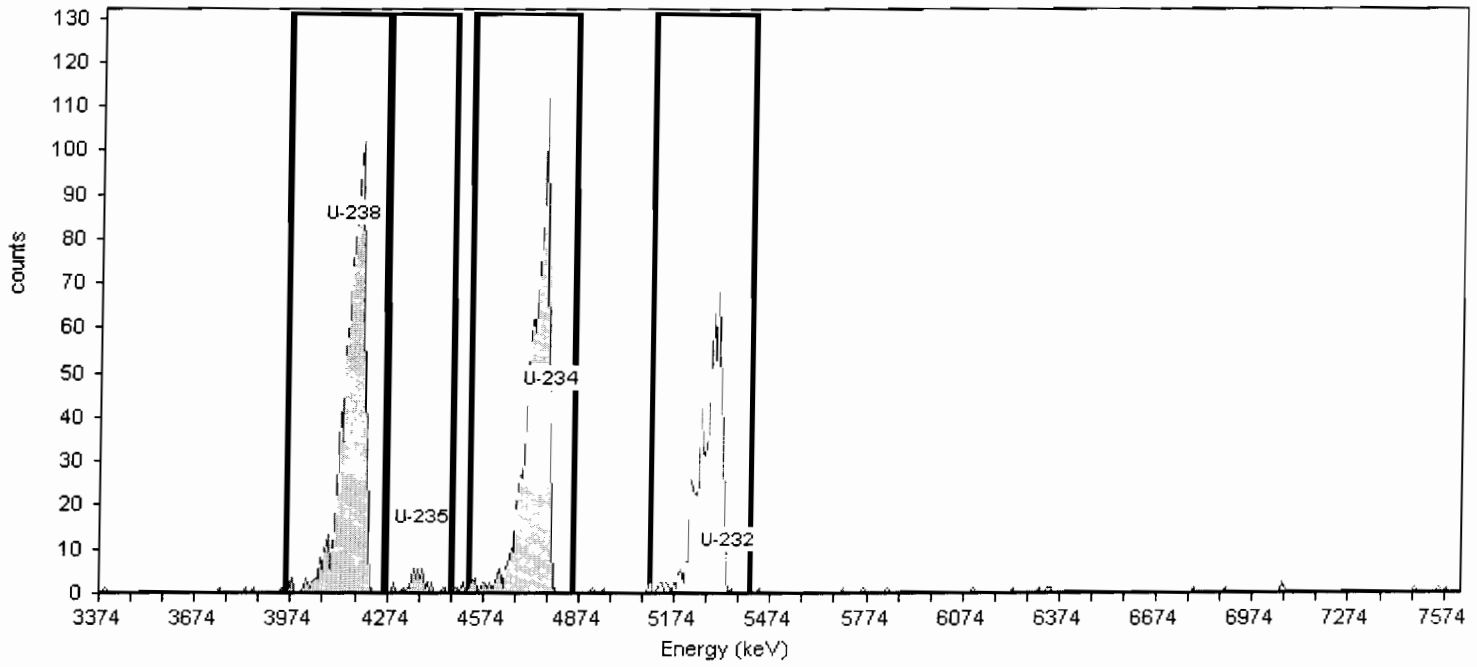
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 80.60%

Acquisition

Detector: AV77
Serial Number: 49-155N7
Acquisition Start Date: 8/15/2012 11:44:26PM
Live Time: 400.00 min.
Real Time: 400.02 min.
Background Date: 7/23/2012 7:27:07PM
Background Info: Sample: ICB;AV77; Det: AV77; Spectrum #1;
Jul-23-2012 19:27

Calibration Name: IC-9885;AV77-20120612
Calibration Date: 6/12/2012 10:16:22PM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 26.74% +/- 0.39% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:42:50PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	69.282	100.0	910	0.4167	909.58	**9.503E+000**	6.304E-001	1.02E+000	1.569E-002	5.468E-002
U-235	4381.179	4269.316	4470.670	46.237	80.2	33	0.0000	33.00	**4.299E-001**	1.497E-001	1.54E-001	1.956E-002	3.525E-002
U-234	4776.430	4530.331	4851.005	71.110	99.8	889	2.9167	886.08	**9.276E+000**	6.247E-001	9.99E-001	4.159E-002	9.834E-002
U-232	5343.203	5097.104	5410.321	74.409	100.1	613	2.0833	610.92	**5.625E+000**	5.173E-001	7.01E-001	3.505E-002	9.548E-002

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
8:55:23AM 8/16/2012

Sample

Sample Name: F2H090401-022
SampleType: Sample
: MV2R41AA
Sample Collection Date: 8/6/2012 12:00:00AM

Spectrum #1 Analysis #1
Sample Volume : 0.5001L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226015
AnalysisID: 535784

Analyst: 60040

Tracer

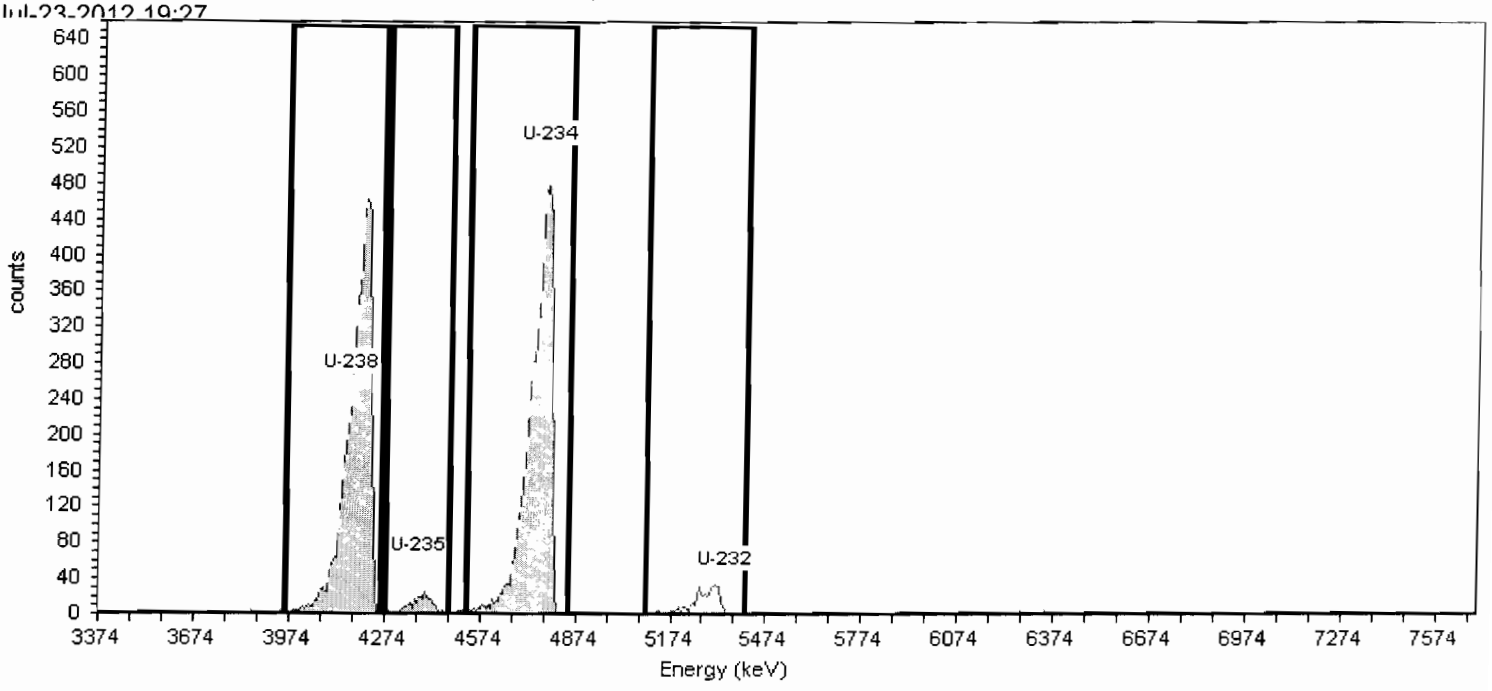
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 42.90%

Acquisition

Detector: AV78
Serial Number: 46-033FF4
Acquisition Start Date: 8/15/2012 11:44:28PM
Live Time: 400.00 min.
Real Time: 400.02 min.
Background Date: 7/23/2012 7:27:09PM
Background Info: Sample: ICB;AV78; Det: AV78; Spectrum #1;
Jul-23-2012 19:27

Calibration Name: IC-9886;AV78-20120611a
Calibration Date: 6/12/2012 1:04:27AM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²
Efficiency: 27.51% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 11:42:50PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	67.491	100.0	4709	1.2500	4707.75	**8.981E+001**	2.618E+000	7.99E+000	4.962E-002	1.351E-001
U-235	4381.179	4269.316	4470.670	57.325	80.2	193	0.4167	192.58	**4.581E+000**	6.612E-001	7.65E-001	3.572E-002	1.245E-001
U-234	4776.430	4530.331	4851.005	72.807	99.8	4779	0.8333	4778.17	**9.133E+001**	2.643E+000	8.11E+000	4.059E-002	1.201E-001
U-232	5343.203	5097.104	5410.321	82.679	100.1	335	0.4167	334.58	**2.994E+000**	6.979E-001	7.42E-001	2.862E-002	1.092E-001

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Analysis Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
7:54:54PM 8/15/2012

Sample

Sample Name: F2H130000-015B
SampleType: Blank
: MV35H1AA
Sample Collection Date: 8/3/2012 1:40:00PM

Spectrum #1 Analysis #1
Sample Volume : 1.0000L
Aliquot: N/A Aliquot Fraction: N/A

Batch

Batch Name: 2226015
AnalysisID: 535641

Analyst: 60040

Tracer

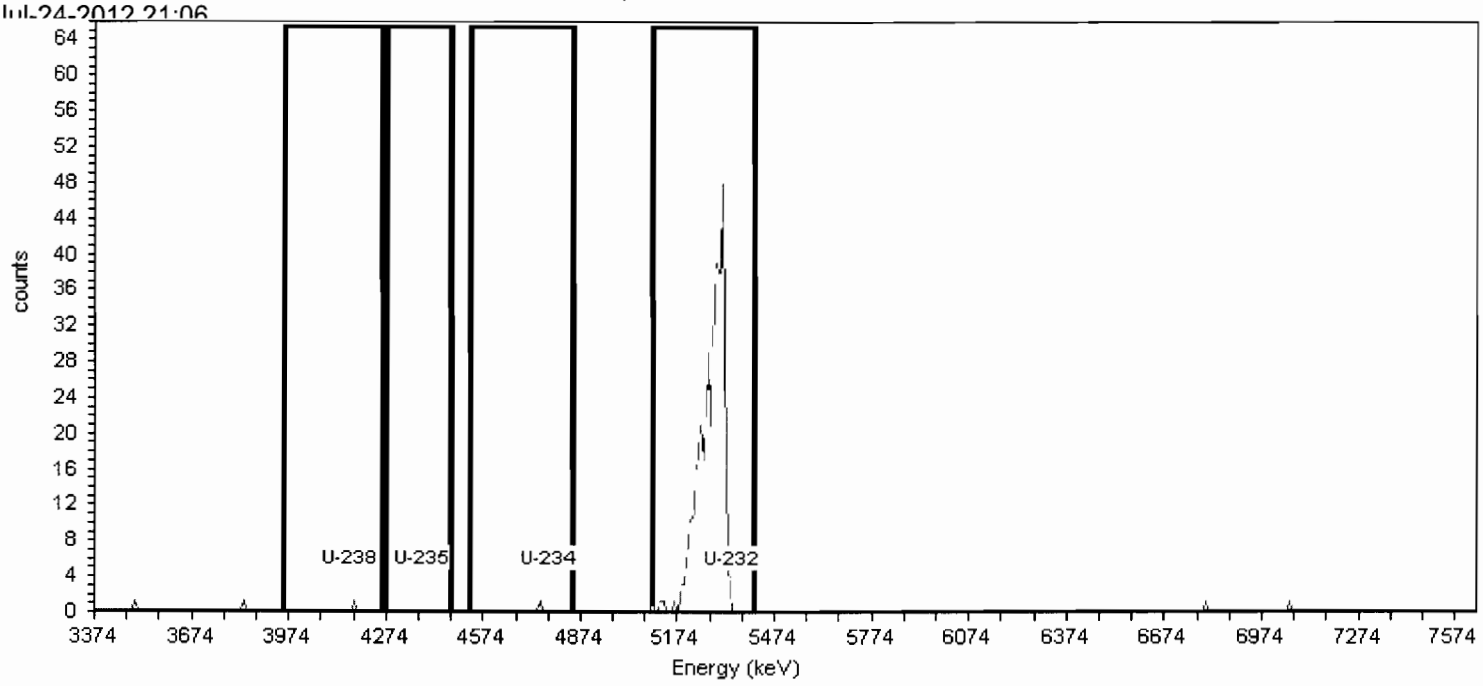
Tracer Name: Rad11-0087_U232_Unclean
Tracer Activity: 77.48 DPM/mL x (Vol.)0.10 mL = 7.75 DPM
Tracer Ref. Date: 4/7/2003 11:00:15AM

Tracer Nuclide: U-232
Tracer Recovery: 86.74%

Acquisition

Detector: AV121
Serial Number: 49-037W2
Acquisition Start Date: 8/15/2012 3:52:47PM
Live Time: 240.00 min.
Real Time: 240.00 min.
Background Date: 7/24/2012 9:06:32PM
Background Info: Sample: ICB;AV121; Det: AV121; Spectrum #1;
Jul-24-2012 21:06

Calibration Name: IC-9884;AV121-20120608
Calibration Date: 6/8/2012 8:54:38AM
Energy Cal: Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²
Efficiency: 28.25% +/- 0.39% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = UROI
Decay Correction: 8/15/2012 3:50:52PM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Uranium
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity pCi/L	2.00 Sigma UncCount pCi/L	2.00 Sigma TPU pCi/L	Critical Level pCi/L	MDA pCi/L
U-238	4157.453	3956.099	4261.858	44.465	100.0	1	0.2500	0.75	**5.744E-003**	1.579E-002	1.58E-002	8.909E-003	3.481E-002
U-235	4381.179	4269.316	4470.670	.000	80.2	0	0.0000	0.00	**0.000E+000**	9.550E-003	9.55E-003	1.111E-002	2.584E-002
U-234	4776.430	4530.331	4851.005	44.465	99.8	1	0.2500	0.75	**5.756E-003**	1.582E-002	1.58E-002	8.926E-003	3.488E-002
U-232	5343.203	5097.104	5410.321	72.840	100.1	417	0.2500	416.75	**3.027E+000**	3.126E-001	4.03E-001	8.901E-003	3.806E-002

SampID	WRKNO	Aliquot	Dilution	Adj Aliquot	TracerID	TracerAnalyte	TracerAliquot	Low Level

Spike Information

Sample ID	Standard ID	Analyte	Std Conc		Aliquot		Ref Date	StdAdded	
F2H090401-018D	Rad12-0005	U-234	7.249E+001	dpm/mL	0.10	mL	8/1/1997 12:00:00AM	6.526E+000	pCi/L
F2H090401-018D	Rad12-0005	U-238	7.526E+001	dpm/mL	0.10	mL	8/1/1997 12:00:00AM	6.775E+000	pCi/L
F2H090401-018S	Rad12-0005	U-234	7.249E+001	dpm/mL	0.10	mL	8/1/1997 12:00:00AM	6.529E+000	pCi/L
F2H090401-018S	Rad12-0005	U-238	7.526E+001	dpm/mL	0.10	mL	8/1/1997 12:00:00AM	6.779E+000	pCi/L
F2H130000-015C	Rad12-0005	U-234	7.249E+001	dpm/mL	0.10	mL	8/1/1997 12:00:00AM	3.265E+000	pCi/L
F2H130000-015C	Rad12-0005	U-238	7.526E+001	dpm/mL	0.10	mL	8/1/1997 12:00:00AM	3.390E+000	pCi/L

SLB — Spiked By

MM — Spike Verified By

8.13.12 — Spike Date

Standard Operating Procedures

	SOPNumber	Title	Revision
☐	ST-RC-0002	Planchet Preparation For Radiochemistry And Radiological Screening Analysis	10.00
☐	ST-RC-0003	Drying And Grinding Of Soil And Solid Samples	11.00
☐	ST-RC-0004	Preparation Of Soil, Sludge, Filter, Biota and Oil/Grease Samples For Radiochemical Analysis	19.00
☐	ST-RC-0014	Bulk Drying and Grinding of Soil and Solid Samples	0.00
☑	ST-RC-0100	Actinide Coprecipitation	14.00
☑	ST-RC-0238	Isotopic Uranium by Eichrom UTEVA Resin for Various Matrices	12.00
☐	ST-RC-0240	Isotopic Americium, Curium, Plutonium, Thorium, and Uranium in Various Matrices by Eichrom Separation Resin	12.00
☐	ST-RC-0241	Isotopic Americium, Plutonium, Curium, and Uranium in Various Matricesby Eichrom Uteva and Tru Resins (with V	9.00
☐	ST-RC-0242	Isotopic Thorium, Plutonium and Uranium in Various Matrices by Eichrome Separation Resin	14.00
☐	ST-RC-0246	Isotopic Americium, Curium and Uranium in Various Matrices by Eichrom Separation Resins	5.00
☑	ST-RD-0210	Alpha Spectroscopy Analysis	8.00

SLB — Column Analyst

8.15.12 — Date

MM — Coprecipitated By

8-15-12 — Precip Date

RM — Reviewed By

8.20.12 — Review Date

MM — Analyst/Relenquished By

8.15.12 — Release Date

WW — Received By

8/15/12 — Receipt Date

1125352055 / SLB / 8.13.12 — Balance ID / Initials / Date

240mins LL 8/22

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Prep Report for Uranium, Isotopic by Alpha Spectroscopy

Batch: 2226015 **Prep Analyst:** 403651

SampID	WRKNO	Aliquot		Dilution	Adj Aliquot	TracerID	TracerAnalyte	TracerAliquot	Low Level
F2H090401-012	MV2RN1AA	5.0015E+002	mL 64	1.00	5.0015E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-013	MV2RP1AA	5.0007E+002	mL 65	1.00	5.0007E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-014	MV2RQ1AA	5.0003E+002	mL 66	1.00	5.0003E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-015	MV2RR1AA	5.0011E+002	mL 67	1.00	5.0011E+002 mL	Rad11-0087	U-232 400min RC=67	0.10	N
F2H090401-016	MV2RT1AA	5.0014E+002	mL 68	1.00	5.0014E+002 mL	Rad11-0087	U-232 400min RC=68	0.10	N
F2H090401-017	MV2RV1AA	5.0013E+002	mL 69	1.00	5.0013E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-018	MV2RW1AA	5.0039E+002	mL 70	1.00	5.0039E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-018D	MV2RW1AD	5.0035E+002	mL 71	1.00	5.0035E+002 mL	Rad11-0087	U-232 spike RC=71	0.10	N
F2H090401-018S	MV2RW1AC	5.0012E+002	mL 74	1.00	5.0012E+002 mL	Rad11-0087	U-232 spike RC=74	0.10	N
F2H090401-019	MV2RX1AA	5.0006E+002	mL 75	1.00	5.0006E+002 mL	Rad11-0087	U-232	0.10	N
F2H090401-020	MV2R11AA	5.0024E+002	mL 76	1.00	5.0024E+002 mL	Rad11-0087	U-232 400min RC=76	0.10	N
F2H090401-021	MV2R21AA	5.0005E+002	mL 77	1.00	5.0005E+002 mL	Rad11-0087	U-232 400min RC=77	0.10	N
F2H090401-022	MV2R41AA	5.0006E+002	mL 78	1.00	5.0006E+002 mL	Rad11-0087	U-232 400min RC=78	0.10	N
F2H130000-015B	MV35H1AA	1.0000E+003	mL 121	1.00	1.0000E+003 mL	Rad11-0087	U-232	0.10	N
F2H130000-015C	MV35H1AC	1.0000E+003	mL 122	1.00	1.0000E+003 mL	Rad11-0087	U-232	0.10	N

SampID	WRKNO	Aliquot	Dilution	Adj Aliquot	TracerID	TracerAnalyte	TracerAliquot	Low Level

Spike Information

Sample ID	Standard ID	Analyte	Std Conc		Aliquot		Ref Date	StdAdded	
F2H090401-018D	Rad12-0005	U-234	7.249E+001	dpm/mL	0.10	mL	8/1/1997 12:00:00AM	6.526E+000	pCi/L
F2H090401-018D	Rad12-0005	U-238	7.526E+001	dpm/mL	0.10	mL	8/1/1997 12:00:00AM	6.775E+000	pCi/L
F2H090401-018S	Rad12-0005	U-234	7.249E+001	dpm/mL	0.10	mL	8/1/1997 12:00:00AM	6.529E+000	pCi/L
F2H090401-018S	Rad12-0005	U-238	7.526E+001	dpm/mL	0.10	mL	8/1/1997 12:00:00AM	6.779E+000	pCi/L
F2H130000-015C	Rad12-0005	U-234	7.249E+001	dpm/mL	0.10	mL	8/1/1997 12:00:00AM	3.265E+000	pCi/L
F2H130000-015C	Rad12-0005	U-238	7.526E+001	dpm/mL	0.10	mL	8/1/1997 12:00:00AM	3.390E+000	pCi/L

SLB — Spiked By

MM — Spike Verified By

8.13.12 — Spike Date

Standard Operating Procedures

SOPNumber	Title	Revision
☐ ST-RC-0002	Planchet Preparation For Radiochemistry And Radiological Screening Analysis	10.00
☐ ST-RC-0003	Drying And Grinding Of Soil And Solid Samples	11.00
☐ ST-RC-0004	Preparation Of Soil, Sludge, Filter, Biota and Oil/Grease Samples For Radiochemical Analysis	19.00
☐ ST-RC-0014	Bulk Drying and Grinding of Soil and Solid Samples	0.00
☑ ST-RC-0100	Actinide Coprecipitation	14.00
☑ ST-RC-0238	Isotopic Uranium by Eichrom UTEVA Resin for Various Matrices	12.00
☐ ST-RC-0240	Isotopic Americium, Curium, Plutonium, Thorium, and Uranium in Various Matrices by Eichrom Separation Resin	12.00
☐ ST-RC-0241	Isotopic Americium, Plutonium, Curium, and Uranium in Various Matricesby Eichrom Uteva and Tru Resins (with V	9.00
☐ ST-RC-0242	Isotopic Thorium, Plutonium and Uranium in Various Matrices by Eichrome Separation Resin	14.00
☐ ST-RC-0246	Isotopic Americium, Curium and Uranium in Various Matrices by Eichrom Separation Resins	5.00
☑ ST-RD-0210	Alpha Spectroscopy Analysis	8.00

SLB — Column Analyst

8.15.12 — Date

MM — Coprecipitated By

8.15.12 — Precip Date

RM, um — Reviewed By

8.20.12, 9/10/12 — Review Date

MM — Analyst/Relenquished By

8.15.12 — Release Date

um — Received By

9/15/12 — Receipt Date

11253530055 / SLB / 8.13.12 — Balance ID / Initials / Date

Alpha Spectrsocopy

Daily Checks and Run Logs

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

AlphaVision Daily Pulser Check for: 8/15/2012

LOT # F2H090401-REV

Detector	Date/Time	Gross Counts Result	Gross Counts Criteria		Gross Counts P/F	FWHM (keV) Result	FWHM (keV) Criteria	FWHM (keV) P/F	Pulser Center Result	Pulser Center Criteria		Pulser Center P/F	Energy (keV) Result	Energy (keV) Criteria		Energy (keV) P/F
AV1	08/15/2012 0:41	7384	7412.2	+/- 5%	Pass	15.1	10 - 20	Pass	222.0	223.4	+/- 5 ch	Pass	5023	5032.6	+/- 40keV	Pass
AV3	08/15/2012 0:41	7375	7431.5	+/- 5%	Pass	14.8	10 - 20	Pass	227.2	227.1	+/- 5 ch	Pass	5061	5060.9	+/- 40keV	Pass
AV4	08/15/2012 0:41	7383	7450.2	+/- 5%	Pass	13.7	10 - 20	Pass	223.9	225.4	+/- 5 ch	Pass	5037	5048.2	+/- 40keV	Pass
AV6	08/15/2012 0:41	7379	7349.4	+/- 5%	Pass	14.3	10 - 20	Pass	218.0	219.1	+/- 5 ch	Pass	4993	5001.2	+/- 40keV	Pass
AV7	08/15/2012 0:41	7362	7427.2	+/- 5%	Pass	16.2	10 - 20	Pass	226.1	225.5	+/- 5 ch	Pass	5053	5048.9	+/- 40keV	Pass
AV8	08/15/2012 0:41	7373	7429.3	+/- 5%	Pass	13.8	10 - 20	Pass	221.1	221.2	+/- 5 ch	Pass	5016	5016.8	+/- 40keV	Pass
AV9	08/15/2012 0:41	7658	7739.2	+/- 5%	Pass	14.1	10 - 20	Pass	220.1	221.3	+/- 5 ch	Pass	5008	5017.6	+/- 40keV	Pass
AV10	08/15/2012 0:41	7614	7612.6	+/- 5%	Pass	16.3	10 - 20	Pass	221.9	222.0	+/- 5 ch	Pass	5022	5022.7	+/- 40keV	Pass
AV11	08/15/2012 0:41	7551	7589.5	+/- 5%	Pass	11.7	10 - 20	Pass	223.0	224.3	+/- 5 ch	Pass	5030	5039.9	+/- 40keV	Pass
AV12	08/15/2012 0:41	7519	7546.0	+/- 5%	Pass	11.6	10 - 20	Pass	220.0	220.1	+/- 5 ch	Pass	5007	5008.2	+/- 40keV	Pass
AV13	08/15/2012 0:41	7574	7703.7	+/- 5%	Pass	16.7	10 - 20	Pass	218.0	218.8	+/- 5 ch	Pass	4992	4999.0	+/- 40keV	Pass
AV14	08/15/2012 0:41	7516	7562.7	+/- 5%	Pass	11.6	10 - 20	Pass	223.0	224.4	+/- 5 ch	Pass	5030	5040.6	+/- 40keV	Pass
AV15	08/15/2012 0:41	7245	7704.9	+/- 5%	FAIL	13.3	10 - 20	Pass	222.9	225.0	+/- 5 ch	Pass	5030	5044.6	+/- 40keV	Pass
AV15	08/15/2012 1:23	7198	7704.9	+/- 5%	FAIL	13.0	10 - 20	Pass	222.9	225.0	+/- 5 ch	Pass	5029	5044.6	+/- 40keV	Pass
AV16	08/15/2012 0:41	7302	7461.8	+/- 5%	Pass	12.9	10 - 20	Pass	217.9	221.2	+/- 5 ch	Pass	4992	5016.7	+/- 40keV	Pass
AV17	08/15/2012 0:41	7578	7615.7	+/- 5%	Pass	11.3	10 - 20	Pass	226.0	226.0	+/- 5 ch	Pass	5053	5052.4	+/- 40keV	Pass
AV18	08/15/2012 0:41	7557	7601.2	+/- 5%	Pass	11.5	10 - 20	Pass	224.0	225.1	+/- 5 ch	Pass	5037	5045.3	+/- 40keV	Pass
AV19	08/15/2012 0:41	7597	7560.2	+/- 5%	Pass	11.1	10 - 20	Pass	226.0	226.3	+/- 5 ch	Pass	5052	5054.4	+/- 40keV	Pass
AV20	08/15/2012 0:41	7640	7736.8	+/- 5%	Pass	14.0	10 - 20	Pass	220.9	222.3	+/- 5 ch	Pass	5014	5025.0	+/- 40keV	Pass
AV21	08/15/2012 0:41	7283	7736.0	+/- 5%	FAIL	13.2	10 - 20	Pass	223.0	223.0	+/- 5 ch	Pass	5030	5029.9	+/- 40keV	Pass
AV21	08/15/2012 1:23	7217	7736.0	+/- 5%	FAIL	13.1	10 - 20	Pass	223.1	223.0	+/- 5 ch	Pass	5030	5029.9	+/- 40keV	Pass
AV22	08/15/2012 0:41	7522	7612.1	+/- 5%	Pass	11.7	10 - 20	Pass	223.0	224.0	+/- 5 ch	Pass	5030	5037.4	+/- 40keV	Pass
AV23	08/15/2012 0:41	7631	7705.4	+/- 5%	Pass	14.6	10 - 20	Pass	224.0	224.0	+/- 5 ch	Pass	5038	5037.7	+/- 40keV	Pass
AV24	08/15/2012 0:41	7626	7696.9	+/- 5%	Pass	14.4	10 - 20	Pass	215.9	217.1	+/- 5 ch	Pass	4977	4986.1	+/- 40keV	Pass
AV43	08/15/2012 0:48	7502	7571.0	+/- 5%	Pass	11.6	10 - 20	Pass	222.9	224.1	+/- 5 ch	Pass	5030	5038.2	+/- 40keV	Pass
AV44	08/15/2012 0:48	7587	7537.4	+/- 5%	Pass	11.4	10 - 20	Pass	221.0	222.0	+/- 5 ch	Pass	5015	5022.3	+/- 40keV	Pass
AV45	08/15/2012 0:48	7620	7611.7	+/- 5%	Pass	14.1	10 - 20	Pass	219.0	219.9	+/- 5 ch	Pass	5000	5007.1	+/- 40keV	Pass
AV46	08/15/2012 0:48	7540	7580.2	+/- 5%	Pass	11.9	10 - 20	Pass	224.0	223.5	+/- 5 ch	Pass	5037	5033.4	+/- 40keV	Pass
AV47	08/15/2012 0:48	7586	7458.5	+/- 5%	Pass	15.6	10 - 20	Pass	223.2	223.4	+/- 5 ch	Pass	5031	5032.6	+/- 40keV	Pass
AV48	08/15/2012 0:48	7472	7590.7	+/- 5%	Pass	11.8	10 - 20	Pass	102.1	224.9	+/- 5 ch	FAIL	4128	5044.0	+/- 40keV	FAIL
AV48	08/15/2012 1:23	7262	7590.7	+/- 5%	Pass	12.3	10 - 20	Pass	225.9	224.9	+/- 5 ch	Pass	5052	5044.0	+/- 40keV	Pass
AV49	08/15/2012 0:48	7608	7623.0	+/- 5%	Pass	14.7	10 - 20	Pass	220.0	220.9	+/- 5 ch	Pass	5008	5014.1	+/- 40keV	Pass

TestAmerica St. Louis

LOT # F2H090401-R

Detector	Date/Time	Gross Counts Result	Gross Counts Criteria	Gross Counts P/F	FWHM (keV) Result	FWHM (keV) Criteria	FWHM (keV) P/F	Pulser Center Result	Pulser Center Criteria	Pulser Center P/F	Energy (keV) Result	Energy (keV) Criteria	Energy (keV) P/F
AV50	08/15/2012 0:48	7519	7466.2 +/- 5%	Pass	12.0	10 - 20	Pass	222.0	222.1 +/- 5 ch	Pass	5022	5023.4 +/- 40keV	Pass
AV51	08/15/2012 0:48	7045	7258.3 +/- 5%	Pass	12.6	10 - 20	Pass	222.0	223.0 +/- 5 ch	Pass	5022	5030.2 +/- 40keV	Pass
AV52	08/15/2012 0:48	7271	7272.2 +/- 5%	Pass	14.2	10 - 20	Pass	224.0	224.6 +/- 5 ch	Pass	5038	5041.9 +/- 40keV	Pass
AV53	08/15/2012 0:49	7231	7204.6 +/- 5%	Pass	10.7	10 - 20	Pass	221.0	222.1 +/- 5 ch	Pass	5015	5023.1 +/- 40keV	Pass
AV54	08/15/2012 0:49	7263	6921.8 +/- 5%	Pass	14.4	10 - 20	Pass	226.0	224.4 +/- 5 ch	Pass	5052	5040.4 +/- 40keV	Pass
AV55	08/15/2012 0:49	7068	7202.5 +/- 5%	Pass	12.3	10 - 20	Pass	251.0	251.1 +/- 5 ch	Pass	5238	5239.7 +/- 40keV	Pass
AV56	08/15/2012 0:49	7591	7232.1 +/- 5%	Pass	845.2	10 - 20	FAIL	162.1	222.7 +/- 5 ch	FAIL	4576	5027.7 +/- 40keV	FAIL
AV57	08/15/2012 0:49	7235	6885.7 +/- 5%	FAIL	16.3	10 - 20	Pass	229.0	228.4 +/- 5 ch	Pass	5075	5070.5 +/- 40keV	Pass
AV57	08/15/2012 1:24	7139	6885.7 +/- 5%	Pass	16.3	10 - 20	Pass	229.0	228.4 +/- 5 ch	Pass	5075	5070.5 +/- 40keV	Pass
AV59	08/15/2012 0:49	7201	7144.9 +/- 5%	Pass	15.2	10 - 20	Pass	222.9	225.2 +/- 5 ch	Pass	5030	5046.1 +/- 40keV	Pass
AV60	08/15/2012 0:49	7203	6875.4 +/- 5%	Pass	14.1	10 - 20	Pass	221.0	220.4 +/- 5 ch	Pass	5015	5010.4 +/- 40keV	Pass
AV61	08/15/2012 0:49	7158	7120.3 +/- 5%	Pass	11.5	10 - 20	Pass	223.0	223.6 +/- 5 ch	Pass	5030	5034.4 +/- 40keV	Pass
AV63	08/15/2012 0:49	7197	7235.6 +/- 5%	Pass	14.0	10 - 20	Pass	223.0	224.1 +/- 5 ch	Pass	5030	5038.5 +/- 40keV	Pass
AV64	08/15/2012 0:49	6998	7084.6 +/- 5%	Pass	13.0	10 - 20	Pass	224.0	224.8 +/- 5 ch	Pass	5038	5043.1 +/- 40keV	Pass
AV65	08/15/2012 0:49	7189	7229.4 +/- 5%	Pass	14.5	10 - 20	Pass	222.0	223.2 +/- 5 ch	Pass	5022	5031.4 +/- 40keV	Pass
AV66	08/15/2012 0:49	7190	7203.8 +/- 5%	Pass	18.3	10 - 20	Pass	223.0	223.7 +/- 5 ch	Pass	5030	5034.9 +/- 40keV	Pass
AV67	08/15/2012 0:49	7342	7434.3 +/- 5%	Pass	17.1	10 - 20	Pass	214.9	217.9 +/- 5 ch	Pass	4969	4992.0 +/- 40keV	Pass
AV68	08/15/2012 0:49	7409	7428.4 +/- 5%	Pass	15.7	10 - 20	Pass	223.0	223.8 +/- 5 ch	Pass	5030	5036.3 +/- 40keV	Pass
AV69	08/15/2012 0:49	7316	7318.7 +/- 5%	Pass	12.1	10 - 20	Pass	223.0	222.4 +/- 5 ch	Pass	5030	5025.6 +/- 40keV	Pass
AV70	08/15/2012 0:49	7377	7411.6 +/- 5%	Pass	16.3	10 - 20	Pass	221.1	221.4 +/- 5 ch	Pass	5016	5018.0 +/- 40keV	Pass
AV71	08/15/2012 1:24	7318	7445.6 +/- 5%	Pass	13.8	10 - 20	Pass	220.1	220.9 +/- 5 ch	Pass	5008	5014.2 +/- 40keV	Pass
AV71	08/15/2012 0:49	7016	7445.6 +/- 5%	FAIL	13.5	10 - 20	Pass	220.1	220.9 +/- 5 ch	Pass	5008	5014.2 +/- 40keV	Pass
AV72	08/15/2012 1:24	7031	7422.1 +/- 5%	FAIL	13.0	10 - 20	Pass	218.0	221.6 +/- 5 ch	Pass	4992	5019.8 +/- 40keV	Pass
AV72	08/15/2012 0:49	6898	7422.1 +/- 5%	FAIL	13.7	10 - 20	Pass	217.9	221.6 +/- 5 ch	Pass	4992	5019.8 +/- 40keV	Pass
AV73	08/15/2012 0:49	7229	7324.4 +/- 5%	Pass	12.1	10 - 20	Pass	223.0	224.2 +/- 5 ch	Pass	5030	5039.0 +/- 40keV	Pass
AV74	08/15/2012 0:49	7232	7234.2 +/- 5%	Pass	12.2	10 - 20	Pass	229.0	229.9 +/- 5 ch	Pass	5075	5081.1 +/- 40keV	Pass
AV75	08/15/2012 10:42	7221	7498.8 +/- 5%	Pass	13.3	10 - 20	Pass	221.9	222.3 +/- 5 ch	Pass	5022	5024.6 +/- 40keV	Pass
AV76	08/15/2012 10:41	7387	7452.6 +/- 5%	Pass	12.4	10 - 20	Pass	233.0	232.8 +/- 5 ch	Pass	5105	5103.4 +/- 40keV	Pass
AV77	08/15/2012 10:41	7550	7562.1 +/- 5%	Pass	15.1	10 - 20	Pass	223.2	223.0 +/- 5 ch	Pass	5031	5030.2 +/- 40keV	Pass
AV78	08/15/2012 10:41	7558	7589.4 +/- 5%	Pass	14.8	10 - 20	Pass	223.9	224.9 +/- 5 ch	Pass	5037	5044.4 +/- 40keV	Pass
AV79	08/15/2012 10:41	7560	7567.7 +/- 5%	Pass	13.3	10 - 20	Pass	222.0	222.0 +/- 5 ch	Pass	5023	5022.4 +/- 40keV	Pass
AV80	08/15/2012 10:41	7558	7587.5 +/- 5%	Pass	13.7	10 - 20	Pass	224.0	224.0 +/- 5 ch	Pass	5038	5037.5 +/- 40keV	Pass
AV81	08/15/2012 10:42	7538	7512.5 +/- 5%	Pass	15.1	10 - 20	Pass	223.2	222.0 +/- 5 ch	Pass	5031	5022.5 +/- 40keV	Pass
AV82	08/15/2012 10:42	7544	7582.2 +/- 5%	Pass	14.1	10 - 20	Pass	222.1	222.1 +/- 5 ch	Pass	5023	5023.2 +/- 40keV	Pass
AV83	08/15/2012 0:57	7509	7790.4 +/- 5%	Pass	13.2	10 - 20	Pass	223.0	223.5 +/- 5 ch	Pass	5030	5033.4 +/- 40keV	Pass
AV84	08/15/2012 0:56	7452	7782.0 +/- 5%	Pass	12.4	10 - 20	Pass	225.0	226.9 +/- 5 ch	Pass	5045	5058.9 +/- 40keV	Pass

Detector	Date/Time	Gross Counts Result	Gross Counts Criteria	Gross Counts P/F	FWHM (keV) Result	FWHM (keV) Criteria	FWHM (keV) P/F	Pulser Center Result	Pulser Center Criteria	Pulser Center P/F	Energy (keV) Result	Energy (keV) Criteria	Energy (keV) P/F
AV85	08/15/2012 1:24	7309	7804.7 +/- 5%	FAIL	12.5	10 - 20	Pass	215.0	219.7 +/- 5 ch	Pass	4970	5005.4 +/- 40keV	Pass
AV85	08/15/2012 0:56	7302	7804.7 +/- 5%	FAIL	13.0	10 - 20	Pass	214.9	219.7 +/- 5 ch	Pass	4970	5005.4 +/- 40keV	Pass
AV86	08/15/2012 0:56	7441	7778.6 +/- 5%	Pass	13.3	10 - 20	Pass	225.0	225.0 +/- 5 ch	Pass	5045	5044.7 +/- 40keV	Pass
AV87	08/15/2012 0:56	7629	7675.1 +/- 5%	Pass	11.5	10 - 20	Pass	225.0	227.5 +/- 5 ch	Pass	5045	5063.8 +/- 40keV	Pass
AV88	08/15/2012 0:56	7663	7805.9 +/- 5%	Pass	13.4	10 - 20	Pass	224.0	226.6 +/- 5 ch	Pass	5037	5056.7 +/- 40keV	Pass
AV89	08/15/2012 0:56	7435	7760.2 +/- 5%	Pass	13.1	10 - 20	Pass	222.0	222.9 +/- 5 ch	Pass	5023	5029.2 +/- 40keV	Pass
AV90	08/15/2012 0:57	7657	7797.3 +/- 5%	Pass	13.7	10 - 20	Pass	223.1	223.8 +/- 5 ch	Pass	5030	5035.6 +/- 40keV	Pass
AV91	08/15/2012 0:57	7507	7447.4 +/- 5%	Pass	12.9	10 - 20	Pass	222.0	223.6 +/- 5 ch	Pass	5023	5034.1 +/- 40keV	Pass
AV92	08/15/2012 0:57	7528	7334.7 +/- 5%	Pass	12.6	10 - 20	Pass	222.0	223.9 +/- 5 ch	Pass	5023	5036.8 +/- 40keV	Pass
AV93	08/15/2012 0:57	7507	7529.6 +/- 5%	Pass	12.8	10 - 20	Pass	222.0	223.1 +/- 5 ch	Pass	5022	5030.4 +/- 40keV	Pass
AV94	08/15/2012 0:57	7513	7618.5 +/- 5%	Pass	13.0	10 - 20	Pass	221.0	221.7 +/- 5 ch	Pass	5015	5020.5 +/- 40keV	Pass
AV95	08/15/2012 0:57	7251	7434.0 +/- 5%	Pass	13.4	10 - 20	Pass	222.9	222.3 +/- 5 ch	Pass	5029	5024.6 +/- 40keV	Pass
AV97	08/15/2012 0:58	7544	7629.3 +/- 5%	Pass	13.9	10 - 20	Pass	222.9	224.0 +/- 5 ch	Pass	5029	5037.6 +/- 40keV	Pass
AV98	08/15/2012 0:58	7351	7570.0 +/- 5%	Pass	13.0	10 - 20	Pass	224.0	224.5 +/- 5 ch	Pass	5037	5041.4 +/- 40keV	Pass
AV101	08/15/2012 1:02	7192	7561.2 +/- 5%	Pass	13.2	10 - 20	Pass	221.1	221.0 +/- 5 ch	Pass	5015	5015.3 +/- 40keV	Pass
AV102	08/15/2012 1:02	7509	7575.1 +/- 5%	Pass	13.7	10 - 20	Pass	223.1	223.3 +/- 5 ch	Pass	5030	5032.5 +/- 40keV	Pass
AV103	08/15/2012 1:02	7501	7537.7 +/- 5%	Pass	14.0	10 - 20	Pass	221.0	221.9 +/- 5 ch	Pass	5015	5021.7 +/- 40keV	Pass
AV106	08/15/2012 1:02	7499	7525.6 +/- 5%	Pass	13.5	10 - 20	Pass	222.0	222.1 +/- 5 ch	Pass	5023	5022.9 +/- 40keV	Pass
AV107	08/15/2012 1:02	7573	7588.5 +/- 5%	Pass	13.7	10 - 20	Pass	221.0	221.3 +/- 5 ch	Pass	5015	5017.6 +/- 40keV	Pass
AV108	08/15/2012 1:02	7371	7570.4 +/- 5%	Pass	13.0	10 - 20	Pass	222.0	222.8 +/- 5 ch	Pass	5023	5028.7 +/- 40keV	Pass
AV109	08/15/2012 1:02	7569	7592.9 +/- 5%	Pass	13.6	10 - 20	Pass	217.0	218.0 +/- 5 ch	Pass	4985	4992.6 +/- 40keV	Pass
AV111	08/15/2012 1:02	7335	7552.4 +/- 5%	Pass	13.2	10 - 20	Pass	221.0	221.4 +/- 5 ch	Pass	5015	5018.4 +/- 40keV	Pass
AV112	08/15/2012 1:02	7562	7475.3 +/- 5%	Pass	13.9	10 - 20	Pass	219.9	221.0 +/- 5 ch	Pass	5007	5015.1 +/- 40keV	Pass
AV113	08/15/2012 1:02	7560	7549.4 +/- 5%	Pass	13.9	10 - 20	Pass	220.9	222.0 +/- 5 ch	Pass	5015	5022.3 +/- 40keV	Pass
AV114	08/15/2012 1:02	7558	7576.7 +/- 5%	Pass	13.2	10 - 20	Pass	222.0	223.0 +/- 5 ch	Pass	5023	5029.7 +/- 40keV	Pass
AV115	08/15/2012 1:02	7666	7681.7 +/- 5%	Pass	13.3	10 - 20	Pass	222.0	223.0 +/- 5 ch	Pass	5023	5029.7 +/- 40keV	Pass
AV116	08/15/2012 1:02	7661	7697.2 +/- 5%	Pass	13.6	10 - 20	Pass	221.0	221.8 +/- 5 ch	Pass	5015	5021.0 +/- 40keV	Pass
AV117	08/15/2012 1:02	7661	7694.4 +/- 5%	Pass	13.2	10 - 20	Pass	222.0	222.9 +/- 5 ch	Pass	5022	5029.5 +/- 40keV	Pass
AV118	08/15/2012 1:02	7658	7691.2 +/- 5%	Pass	13.3	10 - 20	Pass	222.0	222.9 +/- 5 ch	Pass	5022	5029.2 +/- 40keV	Pass
AV119	08/15/2012 1:02	7655	7663.6 +/- 5%	Pass	14.0	10 - 20	Pass	223.9	217.3 +/- 5 ch	FAIL	5037	4987.8 +/- 40keV	FAIL
AV119	08/15/2012 1:24	7540	7663.6 +/- 5%	Pass	14.1	10 - 20	Pass	219.9	217.3 +/- 5 ch	Pass	5007	4987.8 +/- 40keV	Pass
AV120	08/15/2012 1:02	7651	7684.0 +/- 5%	Pass	14.1	10 - 20	Pass	221.1	221.4 +/- 5 ch	Pass	5016	5018.1 +/- 40keV	Pass
AV121	08/15/2012 1:02	7650	7681.7 +/- 5%	Pass	13.7	10 - 20	Pass	221.0	221.6 +/- 5 ch	Pass	5015	5019.5 +/- 40keV	Pass
AV122	08/15/2012 1:02	7644	7674.3 +/- 5%	Pass	13.4	10 - 20	Pass	219.0	219.9 +/- 5 ch	Pass	5000	5006.9 +/- 40keV	Pass
AV124	08/15/2012 1:02	7475	7504.3 +/- 5%	Pass	11.5	10 - 20	Pass	221.0	222.1 +/- 5 ch	Pass	5015	5023.1 +/- 40keV	Pass
AV125	08/15/2012 1:02	7508	7533.9 +/- 5%	Pass	11.4	10 - 20	Pass	221.0	221.9 +/- 5 ch	Pass	5015	5021.7 +/- 40keV	Pass

TestAmerica St. Louis

Detector	Date/Time	Gross Counts Result	Gross Counts Criteria	P/F	FWHM (keV) Result	FWHM (keV) Criteria	P/F	Pulser Center Result	Pulser Center Criteria	P/F	Energy (keV) Result	Energy (keV) Criteria	P/F
AV126	08/15/2012 1:02	7440	7556.1 +/- 5%	Pass	11.6	10 - 20	Pass	224.1	224.7 +/- 5 ch	Pass	5038	5042.8 +/- 40keV	Pass
AV129	08/15/2012 1:02	7457	7455.1 +/- 5%	Pass	12.1	10 - 20	Pass	222.0	222.0 +/- 5 ch	Pass	5022	5022.5 +/- 40keV	Pass
AV130	08/15/2012 1:02	7245	7519.9 +/- 5%	Pass	12.9	10 - 20	Pass	224.9	226.7 +/- 5 ch	Pass	5044	5057.4 +/- 40keV	Pass
AV131	08/15/2012 1:02	7495	7423.7 +/- 5%	Pass	12.6	10 - 20	Pass	223.0	224.1 +/- 5 ch	Pass	5030	5038.2 +/- 40keV	Pass
AV132	08/15/2012 1:02	7401	7600.9 +/- 5%	Pass	13.3	10 - 20	Pass	224.0	224.6 +/- 5 ch	Pass	5038	5042.2 +/- 40keV	Pass
AV133	08/15/2012 1:02	7441	7501.0 +/- 5%	Pass	12.3	10 - 20	Pass	221.9	223.4 +/- 5 ch	Pass	5022	5032.8 +/- 40keV	Pass
AV134	08/15/2012 1:02	7496	7441.4 +/- 5%	Pass	12.5	10 - 20	Pass	224.0	225.0 +/- 5 ch	Pass	5037	5044.7 +/- 40keV	Pass
AV135	08/15/2012 1:02	7641	7675.8 +/- 5%	Pass	13.7	10 - 20	Pass	218.9	220.4 +/- 5 ch	Pass	5000	5010.5 +/- 40keV	Pass
AV136	08/15/2012 1:02	7234	7461.4 +/- 5%	Pass	13.2	10 - 20	Pass	221.1	221.6 +/- 5 ch	Pass	5016	5019.6 +/- 40keV	Pass
AV137	08/15/2012 1:02	7266	7444.4 +/- 5%	Pass	13.2	10 - 20	Pass	221.1	222.2 +/- 5 ch	Pass	5016	5024.0 +/- 40keV	Pass
AV138	08/15/2012 1:02	7410	7513.7 +/- 5%	Pass	12.2	10 - 20	Pass	448.9	450.3 +/- 5 ch	Pass	6714	6725.2 +/- 40keV	Pass
AV147	08/15/2012 0:42	5989	6019.0 +/- 5%	Pass	15.7	10 - 20	Pass	223.1	224.2 +/- 5 ch	Pass	5031	5038.6 +/- 40keV	Pass
AV148	08/15/2012 0:42	6017	5976.5 +/- 5%	Pass	14.3	10 - 20	Pass	223.0	222.6 +/- 5 ch	Pass	5030	5027.1 +/- 40keV	Pass
AV149	08/15/2012 0:42	5896	5944.2 +/- 5%	Pass	11.6	10 - 20	Pass	225.1	223.9 +/- 5 ch	Pass	5046	5036.7 +/- 40keV	Pass
AV150	08/15/2012 0:42	5978	5967.4 +/- 5%	Pass	16.6	10 - 20	Pass	222.9	223.0 +/- 5 ch	Pass	5029	5029.7 +/- 40keV	Pass
AV151	08/15/2012 0:42	5988	5866.8 +/- 5%	Pass	15.8	10 - 20	Pass	222.0	221.6 +/- 5 ch	Pass	5022	5019.3 +/- 40keV	Pass
AV152	08/15/2012 0:42	5977	6012.2 +/- 5%	Pass	11.2	10 - 20	Pass	224.0	223.9 +/- 5 ch	Pass	5038	5036.8 +/- 40keV	Pass
AV153	08/15/2012 0:42	5993	5986.2 +/- 5%	Pass	15.8	10 - 20	Pass	223.0	223.0 +/- 5 ch	Pass	5030	5029.9 +/- 40keV	Pass
AV154	08/15/2012 0:42	5707	5786.0 +/- 5%	Pass	13.2	10 - 20	Pass	220.9	221.7 +/- 5 ch	Pass	5014	5020.2 +/- 40keV	Pass
AV155	08/15/2012 0:42	5905	5904.6 +/- 5%	Pass	11.8	10 - 20	Pass	222.0	222.0 +/- 5 ch	Pass	5022	5022.6 +/- 40keV	Pass
AV156	08/15/2012 0:42	5937	5967.6 +/- 5%	Pass	11.8	10 - 20	Pass	224.0	223.9 +/- 5 ch	Pass	5038	5036.5 +/- 40keV	Pass
AV157	08/15/2012 0:42	6005	5882.0 +/- 5%	Pass	23.7	10 - 20	FAIL	222.0	222.0 +/- 5 ch	Pass	5022	5022.2 +/- 40keV	Pass
AV158	08/15/2012 0:42	6006	5929.1 +/- 5%	Pass	23.3	10 - 20	FAIL	225.9	225.8 +/- 5 ch	Pass	5051	5050.5 +/- 40keV	Pass
AV159	08/15/2012 0:42	6014	6003.9 +/- 5%	Pass	14.5	10 - 20	Pass	229.1	226.3 +/- 5 ch	Pass	5075	5054.8 +/- 40keV	Pass
AV160	08/15/2012 0:42	6027	6002.5 +/- 5%	Pass	14.0	10 - 20	Pass	223.0	223.0 +/- 5 ch	Pass	5030	5029.9 +/- 40keV	Pass
AV161	08/15/2012 0:42	5886	5912.9 +/- 5%	Pass	13.1	10 - 20	Pass	231.0	230.6 +/- 5 ch	Pass	5090	5086.8 +/- 40keV	Pass
AV162	08/15/2012 0:42	6014	5928.3 +/- 5%	Pass	15.4	10 - 20	Pass	224.0	223.1 +/- 5 ch	Pass	5037	5030.6 +/- 40keV	Pass
AV163	08/15/2012 0:42	6003	6002.8 +/- 5%	Pass	14.4	10 - 20	Pass	224.0	224.0 +/- 5 ch	Pass	5037	5037.5 +/- 40keV	Pass
AV164	08/15/2012 0:42	5843	5806.4 +/- 5%	Pass	12.5	10 - 20	Pass	223.0	222.0 +/- 5 ch	Pass	5030	5022.5 +/- 40keV	Pass
AV165	08/15/2012 0:42	5897	5907.4 +/- 5%	Pass	12.6	10 - 20	Pass	224.0	223.8 +/- 5 ch	Pass	5037	5036.1 +/- 40keV	Pass
AV166	08/15/2012 0:42	6021	5999.7 +/- 5%	Pass	13.9	10 - 20	Pass	222.1	221.7 +/- 5 ch	Pass	5023	5020.6 +/- 40keV	Pass
AV167	08/15/2012 0:42	6002	5955.7 +/- 5%	Pass	14.4	10 - 20	Pass	225.2	224.9 +/- 5 ch	Pass	5046	5044.0 +/- 40keV	Pass
AV168	08/15/2012 0:42	5861	5886.9 +/- 5%	Pass	12.2	10 - 20	Pass	222.9	223.0 +/- 5 ch	Pass	5030	5029.8 +/- 40keV	Pass
AV169	08/15/2012 0:42	5894	5889.8 +/- 5%	Pass	12.0	10 - 20	Pass	223.0	223.0 +/- 5 ch	Pass	5030	5030.0 +/- 40keV	Pass
AV170	08/15/2012 0:42	6031	5977.2 +/- 5%	Pass	13.5	10 - 20	Pass	223.9	224.0 +/- 5 ch	Pass	5037	5037.2 +/- 40keV	Pass
AV171	08/15/2012 0:42	5711	5885.7 +/- 5%	Pass	12.9	10 - 20	Pass	225.1	224.0 +/- 5 ch	Pass	5046	5037.2 +/- 40keV	Pass

Detector	Date/Time	Gross Counts Result	Gross Counts Criteria	Gross Counts P/F	FWHM (keV) Result	FWHM (keV) Criteria	FWHM (keV) P/F	Pulser Center Result	Pulser Center Criteria	Pulser Center P/F	Energy (keV) Result	Energy (keV) Criteria	Energy (keV) P/F
AV172	08/15/2012 0:42	6034	5833.5 +/- 5%	Pass	13.6	10 - 20	Pass	224.1	223.8 +/- 5 ch	Pass	5038	5035.9 +/- 40keV	Pass
AV173	08/15/2012 0:42	5777	5822.9 +/- 5%	Pass	13.1	10 - 20	Pass	222.1	221.1 +/- 5 ch	Pass	5023	5015.7 +/- 40keV	Pass
AV174	08/15/2012 0:42	6034	6009.2 +/- 5%	Pass	13.3	10 - 20	Pass	225.0	224.8 +/- 5 ch	Pass	5045	5043.2 +/- 40keV	Pass
AV175	08/15/2012 0:42	6006	5996.5 +/- 5%	Pass	22.7	10 - 20	FAIL	221.0	221.6 +/- 5 ch	Pass	5015	5019.6 +/- 40keV	Pass
AV176	08/15/2012 0:42	5657	6001.3 +/- 5%	FAIL	13.6	10 - 20	Pass	223.1	222.0 +/- 5 ch	Pass	5031	5022.5 +/- 40keV	Pass
AV177	08/15/2012 0:42	5803	5916.6 +/- 5%	Pass	12.7	10 - 20	Pass	225.2	224.0 +/- 5 ch	Pass	5046	5037.4 +/- 40keV	Pass
AV178	08/15/2012 0:42	5997	5971.5 +/- 5%	Pass	14.7	10 - 20	Pass	223.0	218.5 +/- 5 ch	Pass	5030	4996.3 +/- 40keV	Pass
AV179	08/15/2012 0:42	5909	5932.8 +/- 5%	Pass	11.7	10 - 20	Pass	220.9	221.0 +/- 5 ch	Pass	5015	5015.1 +/- 40keV	Pass
AV180	08/15/2012 0:42	5904	5837.1 +/- 5%	Pass	12.3	10 - 20	Pass	223.0	222.8 +/- 5 ch	Pass	5030	5028.4 +/- 40keV	Pass
AV181	08/15/2012 0:42	6029	5985.0 +/- 5%	Pass	13.5	10 - 20	Pass	222.9	223.0 +/- 5 ch	Pass	5029	5029.9 +/- 40keV	Pass
AV182	08/15/2012 0:42	5939	5616.1 +/- 5%	FAIL	11.9	10 - 20	Pass	231.0	229.3 +/- 5 ch	Pass	5090	5077.2 +/- 40keV	Pass
AV183	08/15/2012 0:42	5967	5790.1 +/- 5%	Pass	11.6	10 - 20	Pass	223.0	222.8 +/- 5 ch	Pass	5030	5028.1 +/- 40keV	Pass
AV184	08/15/2012 0:42	6003	5998.2 +/- 5%	Pass	26.6	10 - 20	FAIL	221.9	222.1 +/- 5 ch	Pass	5022	5023.1 +/- 40keV	Pass
AV185	08/15/2012 0:42	5966	5934.7 +/- 5%	Pass	11.3	10 - 20	Pass	222.0	222.0 +/- 5 ch	Pass	5022	5022.6 +/- 40keV	Pass
AV186	08/15/2012 0:42	5750	5893.0 +/- 5%	Pass	12.8	10 - 20	Pass	222.9	223.0 +/- 5 ch	Pass	5029	5030.1 +/- 40keV	Pass
AV187	08/15/2012 0:42	5977	5814.7 +/- 5%	Pass	11.3	10 - 20	Pass	224.0	223.0 +/- 5 ch	Pass	5037	5030.3 +/- 40keV	Pass
AV188	08/15/2012 0:42	5934	5897.1 +/- 5%	Pass	12.2	10 - 20	Pass	222.0	221.8 +/- 5 ch	Pass	5023	5021.2 +/- 40keV	Pass
AV189	08/15/2012 0:42	5906	5887.8 +/- 5%	Pass	11.9	10 - 20	Pass	225.0	224.0 +/- 5 ch	Pass	5045	5037.8 +/- 40keV	Pass
AV190	08/15/2012 0:42	6015	5963.7 +/- 5%	Pass	14.7	10 - 20	Pass	224.0	224.0 +/- 5 ch	Pass	5037	5037.8 +/- 40keV	Pass
AV191	08/15/2012 0:42	6006	5895.3 +/- 5%	Pass	18.6	10 - 20	Pass	222.1	222.0 +/- 5 ch	Pass	5023	5022.5 +/- 40keV	Pass
AV192	08/15/2012 0:42	5985	5991.1 +/- 5%	Pass	15.8	10 - 20	Pass	225.0	223.6 +/- 5 ch	Pass	5045	5034.8 +/- 40keV	Pass
AV193	08/15/2012 0:42	6009	5938.1 +/- 5%	Pass	14.2	10 - 20	Pass	223.0	222.9 +/- 5 ch	Pass	5030	5029.0 +/- 40keV	Pass
AV194	08/15/2012 0:42	5989	6008.3 +/- 5%	Pass	20.9	10 - 20	FAIL	223.0	222.8 +/- 5 ch	Pass	5030	5028.7 +/- 40keV	Pass
AV195	08/15/2012 0:42	6008	6002.2 +/- 5%	Pass	15.3	10 - 20	Pass	224.0	223.8 +/- 5 ch	Pass	5037	5036.1 +/- 40keV	Pass
AV196	08/15/2012 0:42	6023	5979.3 +/- 5%	Pass	14.5	10 - 20	Pass	222.8	223.0 +/- 5 ch	Pass	5028	5030.1 +/- 40keV	Pass
AV197	08/15/2012 0:42	6019	5963.4 +/- 5%	Pass	13.8	10 - 20	Pass	223.0	223.0 +/- 5 ch	Pass	5030	5030.3 +/- 40keV	Pass
AV198	08/15/2012 0:42	5904	5991.2 +/- 5%	Pass	17.9	10 - 20	Pass	223.8	224.4 +/- 5 ch	Pass	5036	5040.3 +/- 40keV	Pass
AV199	08/15/2012 0:42	6000	5993.0 +/- 5%	Pass	14.7	10 - 20	Pass	223.1	218.0 +/- 5 ch	FAIL	5030	4992.6 +/- 40keV	Pass
AV200	08/15/2012 0:42	6005	6012.6 +/- 5%	Pass	15.0	10 - 20	Pass	223.1	222.0 +/- 5 ch	Pass	5031	5022.5 +/- 40keV	Pass
AV201	08/15/2012 0:42	5820	5925.5 +/- 5%	Pass	12.5	10 - 20	Pass	224.0	223.8 +/- 5 ch	Pass	5037	5035.8 +/- 40keV	Pass
AV202	08/15/2012 0:42	6016	6001.6 +/- 5%	Pass	14.6	10 - 20	Pass	224.0	224.1 +/- 5 ch	Pass	5037	5037.8 +/- 40keV	Pass
AV203	08/15/2012 0:42	5951	5973.5 +/- 5%	Pass	11.6	10 - 20	Pass	211.0	209.7 +/- 5 ch	Pass	4940	4930.5 +/- 40keV	Pass
AV204	08/15/2012 0:42	5975	5952.9 +/- 5%	Pass	15.4	10 - 20	Pass	223.9	222.9 +/- 5 ch	Pass	5037	5029.0 +/- 40keV	Pass
AV205	08/15/2012 0:42	5940	5978.5 +/- 5%	Pass	12.0	10 - 20	Pass	224.0	223.0 +/- 5 ch	Pass	5037	5029.9 +/- 40keV	Pass
AV206	08/15/2012 0:42	6003	5955.5 +/- 5%	Pass	15.2	10 - 20	Pass	223.9	222.1 +/- 5 ch	Pass	5037	5023.1 +/- 40keV	Pass
AV207	08/15/2012 0:42	5971	5917.9 +/- 5%	Pass	16.4	10 - 20	Pass	222.0	222.0 +/- 5 ch	Pass	5022	5022.7 +/- 40keV	Pass

Detector	Date/Time	Gross Counts Result	Gross Counts Criteria		Gross Counts P/F	FWHM (keV) Result	FWHM (keV) Criteria	FWHM (keV) P/F	Pulser Center Result	Pulser Center Criteria		Pulser Center P/F	Energy (keV) Result	Energy (keV) Criteria		Energy (keV) P/F
AV208	08/15/2012 0:42	5970	5982.3	+/- 5%	Pass	24.3	10 - 20	FAIL	225.4	223.9	+/- 5 ch	Pass	5048	5036.6	+/- 40keV	Pass
AV209	08/15/2012 0:42	5999	5990.4	+/- 5%	Pass	20.6	10 - 20	FAIL	219.0	221.0	+/- 5 ch	Pass	5000	5014.8	+/- 40keV	Pass
AV210	08/15/2012 0:42	5784	5831.0	+/- 5%	Pass	12.6	10 - 20	Pass	222.9	223.0	+/- 5 ch	Pass	5029	5029.6	+/- 40keV	Pass
AV211	08/15/2012 0:42	5994	5945.5	+/- 5%	Pass	16.2	10 - 20	Pass	223.1	222.0	+/- 5 ch	Pass	5030	5022.7	+/- 40keV	Pass
AV212	08/15/2012 0:42	5926	5668.2	+/- 5%	Pass	35.8	10 - 20	FAIL	220.1	220.5	+/- 5 ch	Pass	5008	5011.7	+/- 40keV	Pass
AV213	08/15/2012 0:42	5950	5965.1	+/- 5%	Pass	16.4	10 - 20	Pass	225.2	223.2	+/- 5 ch	Pass	5047	5031.1	+/- 40keV	Pass
AV214	08/15/2012 0:42	5772	6012.1	+/- 5%	Pass	12.8	10 - 20	Pass	225.1	224.2	+/- 5 ch	Pass	5045	5038.9	+/- 40keV	Pass
AV215	08/15/2012 0:42	5990	6033.8	+/- 5%	Pass	15.5	10 - 20	Pass	223.9	224.5	+/- 5 ch	Pass	5037	5040.9	+/- 40keV	Pass
AV216	08/15/2012 0:42	5625	6010.7	+/- 5%	FAIL	13.5	10 - 20	Pass	224.9	224.9	+/- 5 ch	Pass	5044	5044.5	+/- 40keV	Pass
AV217	08/15/2012 0:42	5958	5619.5	+/- 5%	FAIL	11.5	10 - 20	Pass	218.0	216.8	+/- 5 ch	Pass	4993	4984.1	+/- 40keV	Pass
AV218	08/15/2012 0:42	6013	6016.3	+/- 5%	Pass	14.1	10 - 20	Pass	222.9	223.1	+/- 5 ch	Pass	5029	5031.0	+/- 40keV	Pass
AV219	08/15/2012 0:42	5762	5930.0	+/- 5%	Pass	12.9	10 - 20	Pass	222.9	223.0	+/- 5 ch	Pass	5029	5029.7	+/- 40keV	Pass
AV220	08/15/2012 0:42	5993	6035.2	+/- 5%	Pass	21.9	10 - 20	FAIL	222.0	221.8	+/- 5 ch	Pass	5022	5020.9	+/- 40keV	Pass
AV221	08/15/2012 0:42	5938	5931.4	+/- 5%	Pass	12.4	10 - 20	Pass	224.0	224.1	+/- 5 ch	Pass	5037	5038.3	+/- 40keV	Pass
AV222	08/15/2012 0:42	5865	5682.2	+/- 5%	Pass	12.9	10 - 20	Pass	223.0	219.7	+/- 5 ch	Pass	5030	5005.4	+/- 40keV	Pass
AV223	08/15/2012 0:42	5928	6003.0	+/- 5%	Pass	13.1	10 - 20	Pass	223.0	223.8	+/- 5 ch	Pass	5030	5035.8	+/- 40keV	Pass
AV224	08/15/2012 0:42	6005	5989.2	+/- 5%	Pass	22.3	10 - 20	FAIL	222.9	221.8	+/- 5 ch	Pass	5029	5021.4	+/- 40keV	Pass
AV225	08/15/2012 0:42	5842	5921.8	+/- 5%	Pass	12.4	10 - 20	Pass	223.9	224.0	+/- 5 ch	Pass	5037	5037.3	+/- 40keV	Pass
AV226	08/15/2012 0:42	6010	5986.4	+/- 5%	Pass	14.5	10 - 20	Pass	227.0	226.0	+/- 5 ch	Pass	5060	5052.5	+/- 40keV	Pass
AV227	08/15/2012 0:42	5944	5828.4	+/- 5%	Pass	12.1	10 - 20	Pass	223.0	222.9	+/- 5 ch	Pass	5030	5029.0	+/- 40keV	Pass
AV228	08/15/2012 0:42	5801	5565.7	+/- 5%	Pass	12.6	10 - 20	Pass	221.9	220.4	+/- 5 ch	Pass	5022	5010.8	+/- 40keV	Pass
AV229	08/15/2012 0:42	6005	5698.1	+/- 5%	FAIL	19.4	10 - 20	Pass	222.9	225.7	+/- 5 ch	Pass	5029	5049.9	+/- 40keV	Pass
AV230	08/15/2012 0:42	6017	5623.7	+/- 5%	FAIL	14.2	10 - 20	Pass	221.9	226.7	+/- 5 ch	Pass	5021	5057.6	+/- 40keV	Pass
AV231	08/15/2012 0:42	5886	5679.9	+/- 5%	Pass	12.8	10 - 20	Pass	222.0	218.5	+/- 5 ch	Pass	5022	4996.3	+/- 40keV	Pass
AV232	08/15/2012 0:42	5850	5964.2	+/- 5%	Pass	13.0	10 - 20	Pass	224.0	223.0	+/- 5 ch	Pass	5037	5029.7	+/- 40keV	Pass
AV233	08/15/2012 0:42	6033	5729.2	+/- 5%	FAIL	13.7	10 - 20	Pass	222.9	222.9	+/- 5 ch	Pass	5030	5029.2	+/- 40keV	Pass
AV234	08/15/2012 0:42	5730	5483.1	+/- 5%	Pass	13.1	10 - 20	Pass	224.1	221.6	+/- 5 ch	Pass	5038	5019.4	+/- 40keV	Pass
AV235	08/15/2012 0:42	5805	5898.4	+/- 5%	Pass	12.5	10 - 20	Pass	222.9	223.0	+/- 5 ch	Pass	5029	5029.8	+/- 40keV	Pass
AV236	08/15/2012 0:42	5871	5608.6	+/- 5%	Pass	12.9	10 - 20	Pass	223.0	219.5	+/- 5 ch	Pass	5030	5003.6	+/- 40keV	Pass
AV237	08/15/2012 0:42	5947	5848.1	+/- 5%	Pass	11.8	10 - 20	Pass	223.0	222.9	+/- 5 ch	Pass	5030	5029.0	+/- 40keV	Pass
AV238	08/15/2012 0:42	6034	6018.8	+/- 5%	Pass	14.7	10 - 20	Pass	223.0	223.3	+/- 5 ch	Pass	5030	5032.2	+/- 40keV	Pass
AV239	08/15/2012 0:42	5952	5845.4	+/- 5%	Pass	12.0	10 - 20	Pass	223.0	223.4	+/- 5 ch	Pass	5030	5032.6	+/- 40keV	Pass
AV240	08/15/2012 0:42	5759	5968.0	+/- 5%	Pass	13.0	10 - 20	Pass	222.9	223.0	+/- 5 ch	Pass	5029	5029.7	+/- 40keV	Pass
AV241	08/15/2012 0:42	5848	5827.3	+/- 5%	Pass	12.5	10 - 20	Pass	224.0	223.4	+/- 5 ch	Pass	5038	5032.9	+/- 40keV	Pass
AV242	08/15/2012 0:42	5710	5897.0	+/- 5%	Pass	13.2	10 - 20	Pass	224.1	223.0	+/- 5 ch	Pass	5038	5029.7	+/- 40keV	Pass
AV243	08/15/2012 0:42	5971	5941.0	+/- 5%	Pass	11.3	10 - 20	Pass	222.0	222.0	+/- 5 ch	Pass	5022	5022.6	+/- 40keV	Pass

TestAmerica St. Louis

Detector	Date/Time	Gross Counts Result	Gross Counts Criteria	Gross Counts P/F	FWHM (keV) Result	FWHM (keV) Criteria	FWHM (keV) P/F	Pulser Center Result	Pulser Center Criteria	Pulser Center P/F	Energy (keV) Result	Energy (keV) Criteria	Energy (keV) P/F
AV244	08/15/2012 0:42	5918	5849.1 +/- 5%	Pass	11.9	10 - 20	Pass	224.0	224.1 +/- 5 ch	Pass	5038	5038.0 +/- 40keV	Pass
AV245	08/15/2012 0:42	5937	5856.0 +/- 5%	Pass	12.1	10 - 20	Pass	223.0	222.8 +/- 5 ch	Pass	5030	5028.1 +/- 40keV	Pass
AV246	08/15/2012 0:42	6024	5755.3 +/- 5%	Pass	13.7	10 - 20	Pass	222.1	221.7 +/- 5 ch	Pass	5023	5020.2 +/- 40keV	Pass
AV247	08/15/2012 0:42	5947	5564.1 +/- 5%	FAIL	11.8	10 - 20	Pass	215.0	213.4 +/- 5 ch	Pass	4970	4958.1 +/- 40keV	Pass
AV248	08/15/2012 0:42	5994	5837.2 +/- 5%	Pass	11.2	10 - 20	Pass	223.0	222.7 +/- 5 ch	Pass	5030	5027.9 +/- 40keV	Pass
AV249	08/15/2012 0:42	5999	6028.2 +/- 5%	Pass	24.9	10 - 20	FAIL	222.2	222.5 +/- 5 ch	Pass	5024	5026.6 +/- 40keV	Pass
AV250	08/15/2012 0:42	6021	5995.9 +/- 5%	Pass	13.2	10 - 20	Pass	223.0	222.8 +/- 5 ch	Pass	5030	5028.6 +/- 40keV	Pass

Notes:
Detectors which do not appear on the AlphaVision Daily Pulser Check report were not used for the day.
OOS = Out of Service (detector failed two consecutive daily checks)
OK = After one initial failing check the detector passed according to laboratory or client specific requirements; therefore, the detector was placed into service (if "OK" is used for any other purpose, an explanation will be provided).

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Run Log

Logbook No.: 3844

TESTAMERICA
St. Louis

Alpha Spectrometry Runlog

	Date	Batch #	Sample #	Detector	Count Time	Analyte	Setup Initials	Proccss Initials
1	8/14/12	2223028	F2H070477-001	97	240min	U	RM	I
2	1	1	1 -001x	98	1	1	1	
3	8/15/12	Daily	Pulsars	1-250	1min	QA	RM	—
4		2221028	F2H070410-001	101	600mins	U	um	
5			-002	102				
6			-003	103				
7			-004	106				
8			-005	107				
9			-006	108				
10			-007	109				
11			-008	111				
12			-009	112				
13			-010	113				
14			-011	114				
15			F2H080000-028B	115				
16			-028C	116				
17			-028L	117				
18		2221027	F2H070410-001	124		Au		
19			-002	125				
20			-003	126				
21			-004	129				
22			-005	130				
23			-006	131				
24			-007	132				
25			-008	133				
26			-009	134				
27			-010	135				
28			-011	136				
29			F2H080000-027B	137				

Reviewed By: um Date: 8/15/12

Logbook No.: 3844

TESTAMERICA
St. Louis

Alpha Spectrometry Runlog

	Date	Batch #	Sample #	Detector	Count Time	Analyte	Setup Initials	Process Initials
1	8/15/12	2221027	F2H080000-027C	138	600mins	Pu	MM	
2			-027L	118				
3		2226014	F2H090401-001	43	240mins	U		
4			-002	44				
5			-003	49				
6			-004	50				
7			-005	51				
8			-006	52				
9			-007	53				
10			-007D	54				
11			-007S	55				
12			-008	57				
13			-009	60				
14			-010	61				
15			-011	63				
16			F2H130000-014B	119				
17			-014C	120				
18		2226015	F2H090401-012	64				
19			-013	65				
20			-014	66				
21			-015	67				
22			-016	68				
23			-017	69				
24			-018	70				
25			-018D	71				
26			-018S	74				
27			-019	75				
28			-020	76				
29			-021	77				

Reviewed By: MM Date: 8/15/12

Logbook No.: 3844

TESTAMERICA
St. Louis

Alpha Spectrometry Runlog

	Date	Batch #	Sample #	Detector	Count Time	Analyte	Setup Initials	Process Initials
1	8/15/12	2226015	F2H090401-022	78	24hrs	U	LMM	
2			F2H130000-015B	121				
3			LMM 8/15/12 -015C	122				
4		2226037	AT F2H080449-002	79	48hrs			
5			-003	80				
6			F2H130000-037B	81				
7			-037C	82				
8			-037L	83				
9		2226015	F2H090401-015	67	400min	U	RM	
10			-016	68				
11			-018D	71				
12			-018S	74				
13			-020	76				
14			-021	77				
15			-022	78				
16		2226014	F2H090401-003	49				
17			-004	50				
18			-005	51				
19			-006	52				
20			-007	53				
21			-007D	54				
22			-007S	55				
23			-010	61				
24			-011	63				
25	8.16.12	Daily	Pulsars	1-250	1min	QA	RM	—
26		2229010	F2H070466-009	43	24hrs	U	LMM	
27			-009X	44				
28			F2H150000-010B	101				
29			-010C	102				

Reviewed By: LMM Date: 8/16/12

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Monthly Backgrounds
Alpha Vision
July 2012
AV1-146

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:15:55PM 7/25/2012

Sample

Sample Name: ICB;AV43
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

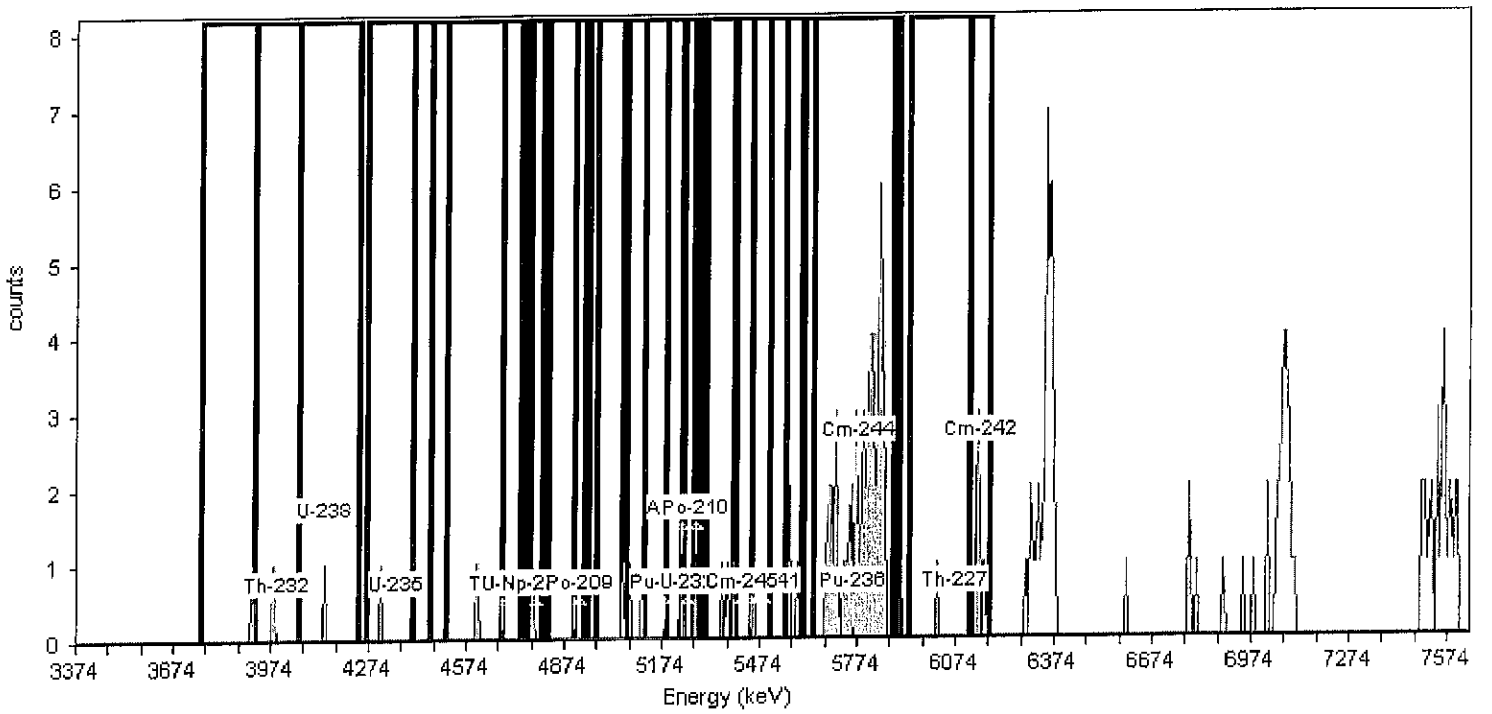
Analyst: 60040

Acquisition

Detector: AV43 , SN: 50-051c5
Acquisition Start Date: 7/24/2012 9:07:02PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9794;AV43-20120607
Calibration Date: 6/7/2012 7:50:31PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.99% +/- 0.33% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 171.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	2.00	2.083E-003	1.804E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	1.00	1.042E-003	1.473E-003
U-234	4.71	4.51	4.82	2.00	2.083E-003	1.804E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	4.00	4.167E-003	2.329E-003
Np-237	4.78	4.77	4.81	1.00	1.042E-003	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	4.00	4.167E-003	2.329E-003
Am-243	5.23	5.05	5.31	5.00	5.208E-003	2.552E-003
U-232	5.25	5.06	5.40	7.00	7.292E-003	2.946E-003
Th-228	5.45	5.19	5.51	6.00	6.250E-003	2.756E-003
Po-210	5.28	5.23	5.29	2.00	2.083E-003	1.804E-003
Pu-238	5.47	5.27	5.55	5.00	5.208E-003	2.552E-003
Am-241	5.48	5.30	5.60	7.00	7.292E-003	2.946E-003
Cm-245	5.42	5.40	5.45	1.00	1.042E-003	1.473E-003
Pu-236	5.76	5.61	5.89	54.00	5.625E-002	7.725E-003
Cm-244	5.78	5.64	5.90	54.00	5.625E-002	7.725E-003
Th-227	6.07	5.93	6.18	7.00	7.292E-003	2.946E-003
Cm-242	6.15	6.12	6.18	6.00	6.250E-003	2.756E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:16:01PM 7/25/2012

Sample

Sample Name: ICB;AV44
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

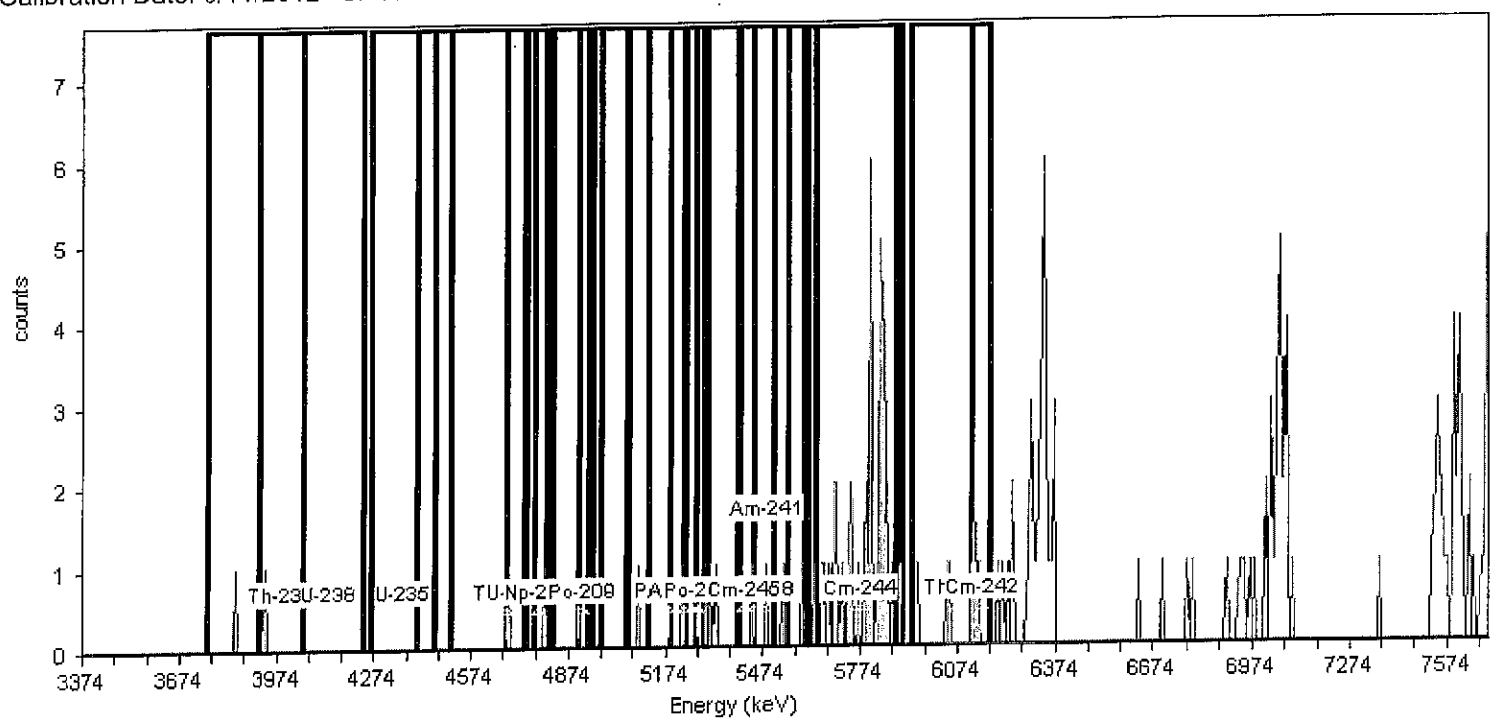
Analyst: 60040

Acquisition

Detector: AV44 , SN: 50-051JJ1
Acquisition Start Date: 7/24/2012 9:07:03PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9795;AV44-20120610
Calibration Date: 6/11/2012 3:27:57PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.64% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 173.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	1.00	1.042E-003	1.473E-003
U-234	4.71	4.51	4.82	2.00	2.083E-003	1.804E-003
Pu-242	4.90	4.68	4.95	2.00	2.083E-003	1.804E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	1.00	1.042E-003	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	3.00	3.125E-003	2.083E-003
U-232	5.25	5.06	5.40	5.00	5.208E-003	2.552E-003
Th-228	5.45	5.19	5.51	6.00	6.250E-003	2.756E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	6.00	6.250E-003	2.756E-003
Am-241	5.48	5.30	5.60	7.00	7.292E-003	2.946E-003
Cm-245	5.42	5.40	5.45	1.00	1.042E-003	1.473E-003
Pu-236	5.76	5.61	5.89	41.00	4.271E-002	6.751E-003
Cm-244	5.78	5.64	5.90	42.00	4.375E-002	6.831E-003
Th-227	6.07	5.93	6.18	9.00	9.375E-003	3.294E-003
Cm-242	6.15	6.12	6.18	5.00	5.208E-003	2.552E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:16:07PM 7/25/2012

Sample

Sample Name: ICB;AV45
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

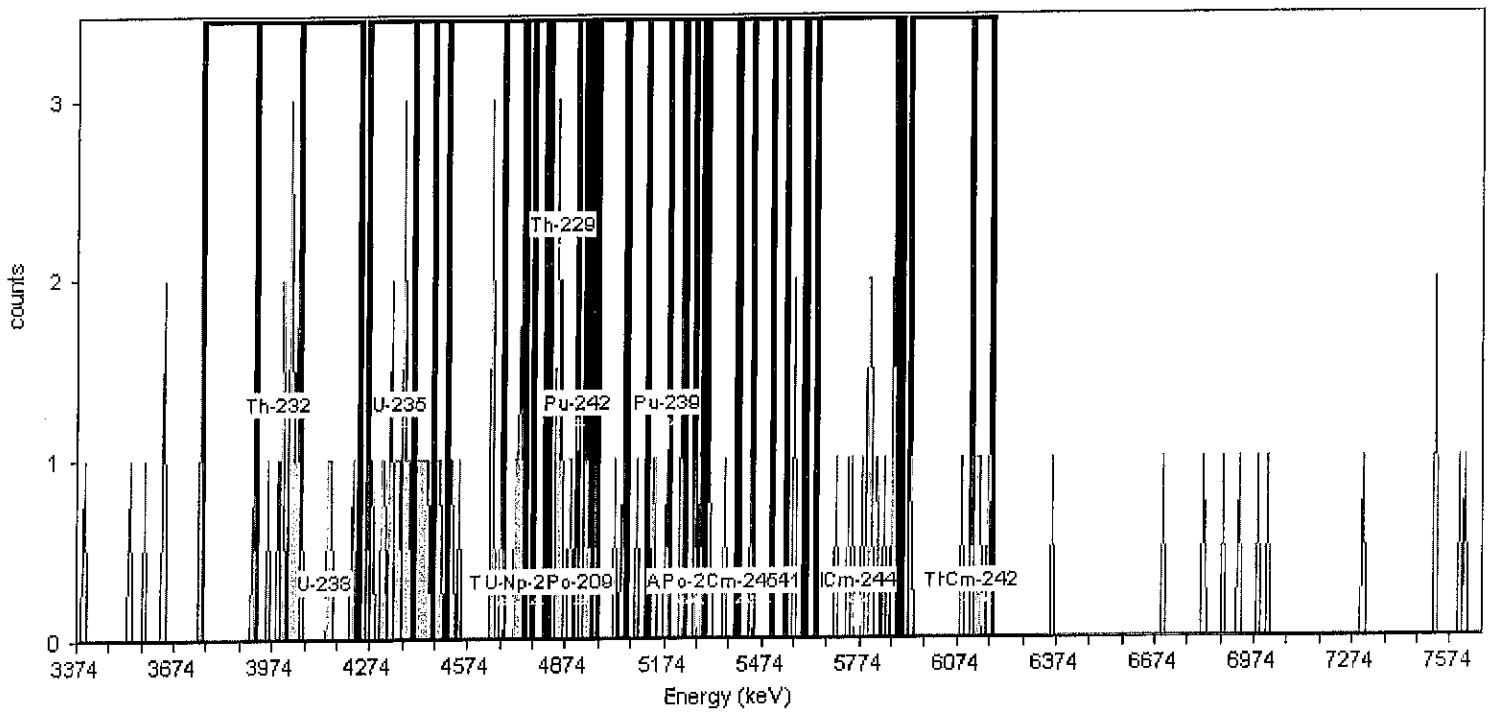
Analyst: 60040

Acquisition

Detector: AV45 , SN: 48-158FF2
Acquisition Start Date: 7/24/2012 9:07:04PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9817;AV45-20120610
Calibration Date: 6/11/2012 3:28:22PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.04% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 115.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	13.00	1.354E-002	3.898E-003
U-238	4.14	3.92	4.24	16.00	1.667E-002	4.295E-003
U-235	4.36	4.26	4.46	19.00	1.979E-002	4.658E-003
Th-230	4.68	4.40	4.75	18.00	1.875E-002	4.541E-003
U-234	4.71	4.51	4.82	11.00	1.146E-002	3.608E-003
Pu-242	4.90	4.68	4.95	15.00	1.563E-002	4.167E-003
Th-229	4.86	4.74	5.12	15.00	1.563E-002	4.167E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	2.00	2.083E-003	1.804E-003
Pu-239	5.18	4.97	5.24	7.00	7.292E-003	2.946E-003
Am-243	5.23	5.05	5.31	7.00	7.292E-003	2.946E-003
U-232	5.25	5.06	5.40	9.00	9.375E-003	3.294E-003
Th-228	5.45	5.19	5.51	7.00	7.292E-003	2.946E-003
Po-210	5.28	5.23	5.29	2.00	2.083E-003	1.804E-003
Pu-238	5.47	5.27	5.55	5.00	5.208E-003	2.552E-003
Am-241	5.48	5.30	5.60	5.00	5.208E-003	2.552E-003
Cm-245	5.42	5.40	5.45	1.00	1.042E-003	1.473E-003
Pu-236	5.76	5.61	5.89	15.00	1.563E-002	4.167E-003
Cm-244	5.78	5.64	5.90	15.00	1.563E-002	4.167E-003
Th-227	6.07	5.93	6.18	6.00	6.250E-003	2.756E-003
Cm-242	6.15	6.12	6.18	4.00	4.167E-003	2.329E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:16:13PM 7/25/2012

Sample

Sample Name: ICB;AV46
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

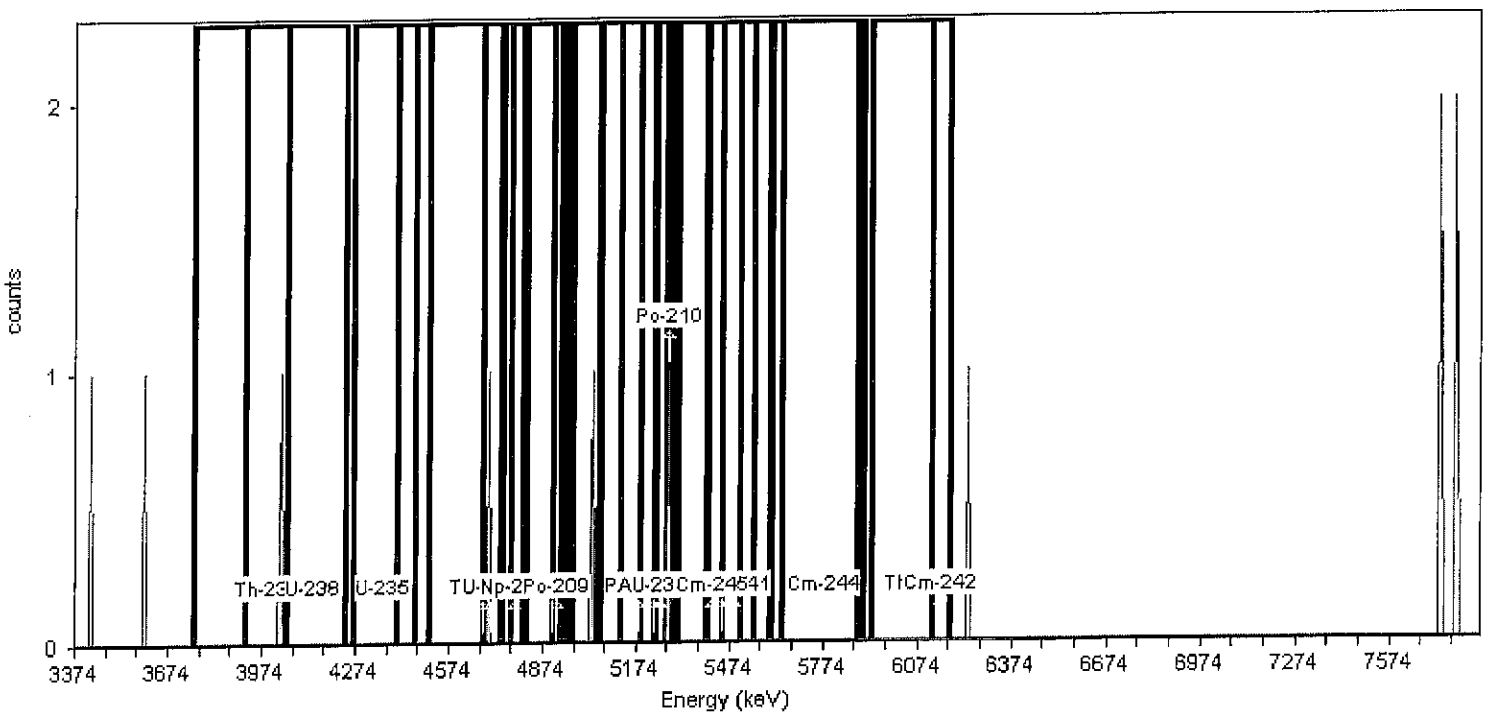
Analyst: 60040

Acquisition

Detector: AV46 , SN: 49-202GG2
Acquisition Start Date: 7/24/2012 9:07:05PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9884;AV46-20120610
Calibration Date: 6/11/2012 3:28:47PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 28.49% +/- 0.40% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 11.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	1.00	1.042E-003	1.473E-003
U-234	4.71	4.51	4.82	1.00	1.042E-003	1.473E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	1.00	1.042E-003	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	1.00	1.042E-003	1.473E-003
U-232	5.25	5.06	5.40	1.00	1.042E-003	1.473E-003
Th-228	5.45	5.19	5.51	1.00	1.042E-003	1.473E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	1.00	1.042E-003	1.473E-003
Am-241	5.48	5.30	5.60	0.00	0.000E+000	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	0.00	0.000E+000	1.473E-003
Cm-244	5.78	5.64	5.90	0.00	0.000E+000	1.473E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:16:18PM 7/25/2012

Sample

Sample Name: ICB;AV47
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

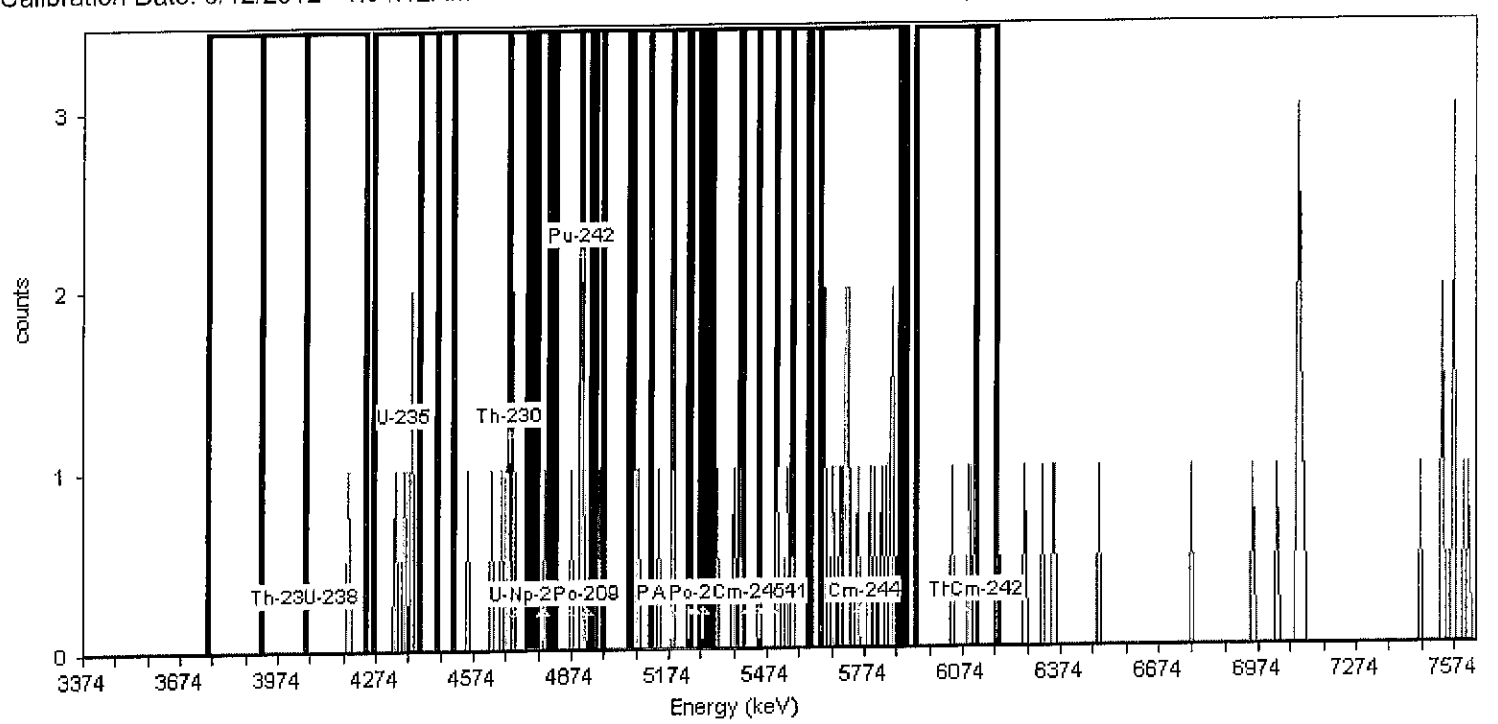
Analyst: 60040

Acquisition

Detector: AV47 , SN: 50-051C7
Acquisition Start Date: 7/24/2012 9:07:06PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9885;AV47-20120611a
Calibration Date: 6/12/2012 1:04:12AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.78% +/- 0.39% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 74.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	4.00	4.167E-003	2.329E-003
Th-230	4.68	4.40	4.75	7.00	7.292E-003	2.946E-003
U-234	4.71	4.51	4.82	8.00	8.333E-003	3.125E-003
Pu-242	4.90	4.68	4.95	8.00	8.333E-003	3.125E-003
Th-229	4.86	4.74	5.12	9.00	9.375E-003	3.294E-003
Np-237	4.78	4.77	4.81	1.00	1.042E-003	1.473E-003
Po-209	4.92	4.90	4.93	3.00	3.125E-003	2.083E-003
Pu-239	5.18	4.97	5.24	6.00	6.250E-003	2.756E-003
Am-243	5.23	5.05	5.31	6.00	6.250E-003	2.756E-003
U-232	5.25	5.06	5.40	9.00	9.375E-003	3.294E-003
Th-228	5.45	5.19	5.51	6.00	6.250E-003	2.756E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	6.00	6.250E-003	2.756E-003
Am-241	5.48	5.30	5.60	6.00	6.250E-003	2.756E-003
Cm-245	5.42	5.40	5.45	1.00	1.042E-003	1.473E-003
Pu-236	5.76	5.61	5.89	16.00	1.667E-002	4.295E-003
Cm-244	5.78	5.64	5.90	16.00	1.667E-002	4.295E-003
Th-227	6.07	5.93	6.18	3.00	3.125E-003	2.083E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:16:24PM 7/25/2012

Sample

Sample Name: ICB;AV48
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

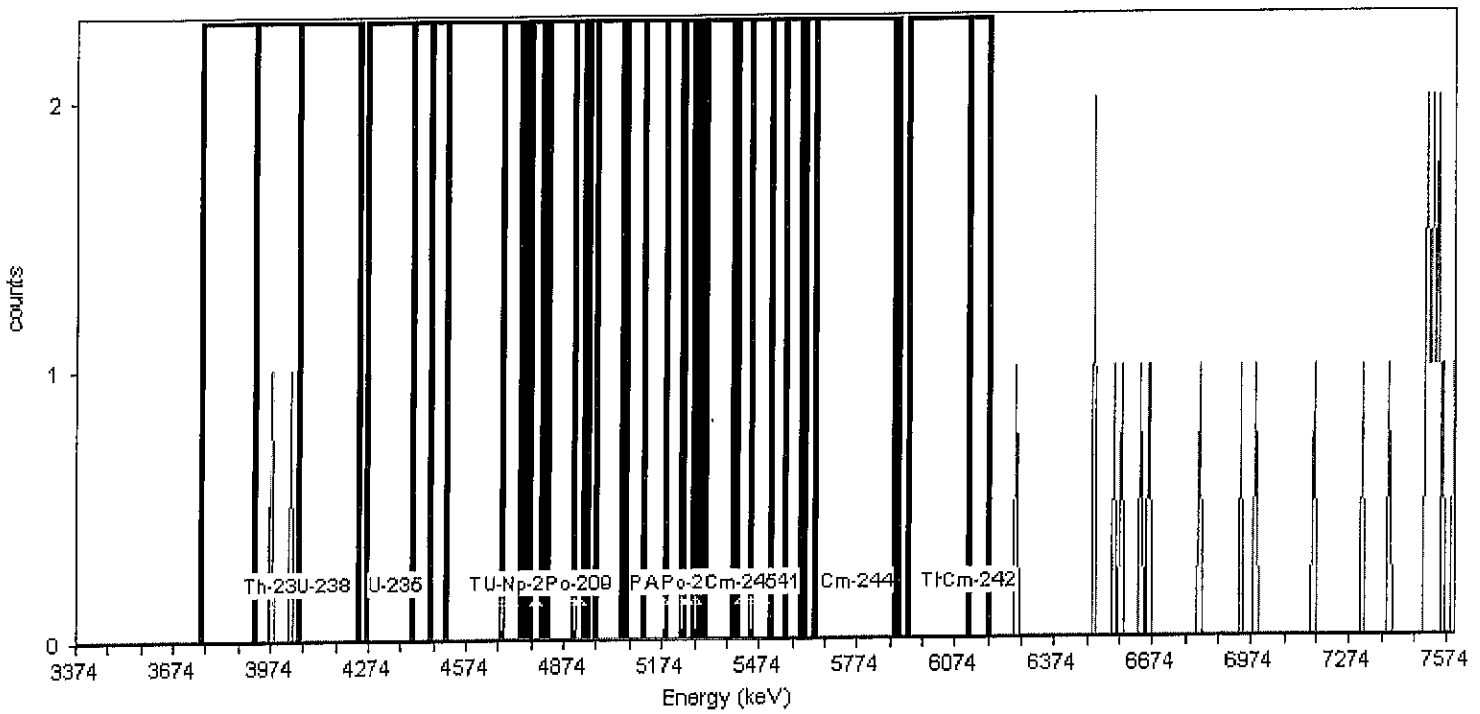
Analyst: 60040

Acquisition

Detector: AV48 , SN: 50-051JJ4
Acquisition Start Date: 7/24/2012 9:07:07PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9886;AV48-20120610
Calibration Date: 6/11/2012 3:29:40PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.64% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 27.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	2.00	2.083E-003	1.804E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	0.00	0.000E+000	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	0.00	0.000E+000	1.473E-003
Am-243	5.23	5.05	5.31	0.00	0.000E+000	1.473E-003
U-232	5.25	5.06	5.40	0.00	0.000E+000	1.473E-003
Th-228	5.45	5.19	5.51	0.00	0.000E+000	1.473E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	0.00	0.000E+000	1.473E-003
Am-241	5.48	5.30	5.60	0.00	0.000E+000	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	0.00	0.000E+000	1.473E-003
Cm-244	5.78	5.64	5.90	0.00	0.000E+000	1.473E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:16:30PM 7/25/2012

Sample

Sample Name: ICB;AV49
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

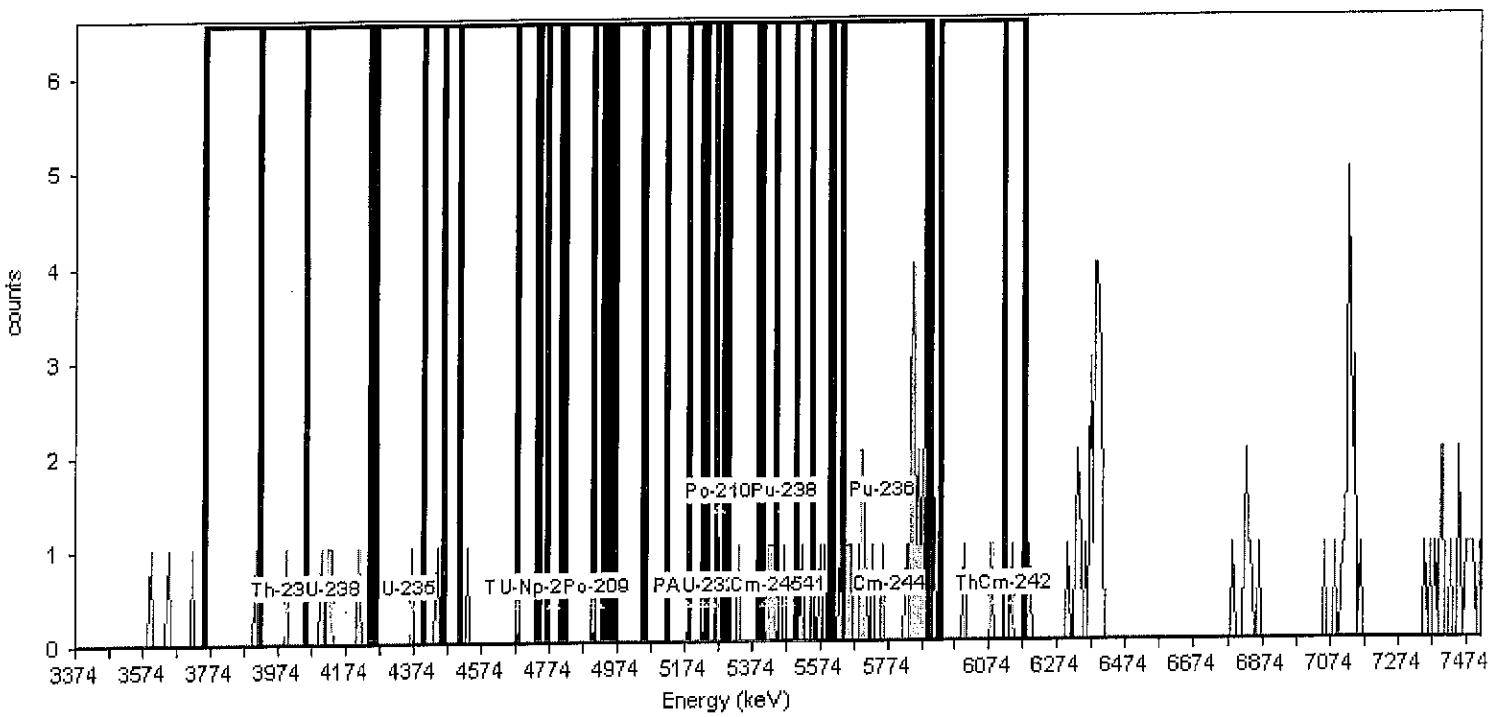
Analyst: 60040

Acquisition

Detector: AV49 , SN: 46-022AA3
Acquisition Start Date: 7/24/2012 9:07:08PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-7107;AV49-20120610
Calibration Date: 6/10/2012 8:17:41PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 29.27% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 113.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	5.00	5.208E-003	2.552E-003
U-235	4.36	4.26	4.46	2.00	2.083E-003	1.804E-003
Th-230	4.68	4.40	4.75	2.00	2.083E-003	1.804E-003
U-234	4.71	4.51	4.82	1.00	1.042E-003	1.473E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	0.00	0.000E+000	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	0.00	0.000E+000	1.473E-003
Am-243	5.23	5.05	5.31	1.00	1.042E-003	1.473E-003
U-232	5.25	5.06	5.40	2.00	2.083E-003	1.804E-003
Th-228	5.45	5.19	5.51	6.00	6.250E-003	2.756E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	8.00	8.333E-003	3.125E-003
Am-241	5.48	5.30	5.60	9.00	9.375E-003	3.294E-003
Cm-245	5.42	5.40	5.45	3.00	3.125E-003	2.083E-003
Pu-236	5.76	5.61	5.89	23.00	2.396E-002	5.103E-003
Cm-244	5.78	5.64	5.90	22.00	2.292E-002	4.996E-003
Th-227	6.07	5.93	6.18	4.00	4.167E-003	2.329E-003
Cm-242	6.15	6.12	6.18	2.00	2.083E-003	1.804E-003

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Monthly CCV
Alpha Vision
July 2012
AV1-146

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV1						
IC-7107;AV1-20120607	6/7/2012 3:02:16 PM	82232-334	0.2756	Pass		
CCV-7107;AV1-20120724	7/24/2012 1:37:50 PM	82232-334	0.2749	Pass	99.7401	Pass
AV2						
IC-8874;AV2-20120607	6/7/2012 3:02:23 PM	82233-334	0.2693	Pass		
CCV-8874;AV2-20120724	7/24/2012 1:38:06 PM	82233-334	0.2737	Pass	101.617	Pass
AV3						
IC-8875;AV3-20120607	6/7/2012 3:02:28 PM	82234-334	0.2857	Pass		
CCV-8875;AV3-20120724	7/24/2012 1:38:18 PM	82234-334	0.2813	Pass	98.4574	Pass
AV4						
IC-8876;AV4-20120607	6/7/2012 3:02:32 PM	82235-334	0.2793	Pass		
CCV-8876;AV4-20120724	7/24/2012 1:38:33 PM	82235-334	0.2759	Pass	98.7801	Pass
AV6						
IC-9520;AV6-20120607a	6/7/2012 3:56:30 PM	82237-334	0.2792	Pass		
CCV-9520;AV6-20120724	7/24/2012 1:38:57 PM	82237-334	0.2815	Pass	100.837	Pass
AV7						
IC-8879;AV7-20120607	6/7/2012 4:03:51 PM	82238-334	0.2731	Pass		
CCV-8879;AV7-20120724	7/24/2012 1:39:10 PM	82238-334	0.2696	Pass	98.7133	Pass
AV8						
IC-9792;AV8-20120607	6/7/2012 4:06:21 PM	82240-334	0.2787	Pass		
CCV-9792;AV8-20120724	7/24/2012 1:39:22 PM	82240-334	0.2791	Pass	100.131	Pass
AV9						
IC-9793;AV9-20120607	6/7/2012 4:06:26 PM	82241-334	0.2781	Pass		
CCV-9793;AV9-20120724	7/24/2012 1:39:34 PM	82241-334	0.2797	Pass	100.590	Pass
AV10						
IC-9794;AV10-20120621	6/21/2012 2:01:39 PM	82242-334	0.2725	Pass		
AV11						
IC-9795;AV11-20120607	6/7/2012 7:50:12 PM	82243-334	0.2751	Pass		
CCV-9795;AV11-20120724	7/24/2012 1:40:24 PM	82243-334	0.2762	Pass	100.416	Pass
AV12						
IC-9817;AV12-20120607	6/7/2012 7:50:16 PM	82244-334	0.2699	Pass		
CCV-9817;AV12-20120724	7/24/2012 1:40:35 PM	82244-334	0.2659	Pass	98.5073	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Friday, July 27, 2012

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV13						
IC-9884;AV13-20120607	6/7/2012 7:50:19 PM	82245-334	0.2758	Pass		
CCV-9884;AV13-20120724	7/24/2012 1:40:46 PM	82245-334	0.2906	Pass	105.355	Fail
CCV-9884;AV13-20120724a	7/24/2012 5:02:56 PM	82245-334	0.2748	Pass	99.6538	Pass
CCV-9884;AV13-20120725	7/25/2012 11:44:29 AM	82245-334	0.2727	Pass	98.8754	Pass
AV14						
IC-9885;AV14-20120607	6/7/2012 7:50:22 PM	82246-334	0.2724	Pass		
CCV-9885;AV14-20120724	7/24/2012 1:41:00 PM	82246-334	0.2691	Pass	98.7814	Pass
AV15						
IC-9886;AV15-20120607	6/7/2012 7:50:24 PM	82247-334	0.2743	Pass		
CCV-9886;AV15-20120724	7/24/2012 1:41:10 PM	82247-334	0.2744	Pass	100.039	Pass
AV16						
IC-7107;AV16-20120607a	6/8/2012 12:12:55 AM	82232-334	0.2798	Pass		
CCV-7107;AV16-20120724	7/24/2012 5:03:06 PM	82232-334	0.2799	Pass	100.019	Pass
AV17						
IC-8874;AV17-20120607	6/8/2012 12:13:37 AM	82233-334	0.2631	Pass		
CCV-8874;AV17-20120724	7/24/2012 5:03:21 PM	82233-334	0.2669	Pass	101.451	Pass
AV18						
IC-8875;AV18-20120607	6/8/2012 12:13:58 AM	82234-334	0.2748	Pass		
CCV-8875;AV18-20120724	7/24/2012 5:05:40 PM	82234-334	0.2730	Pass	99.3381	Pass
AV19						
IC-8876;AV19-20120607	6/8/2012 12:14:05 AM	82235-334	0.2694	Pass		
CCV-8876;AV19-20120724	7/24/2012 5:03:44 PM	82235-334	0.2681	Pass	99.5055	Pass
AV20						
IC-8877;AV20-20120607	6/7/2012 7:50:28 PM	82236-334	0.2703	Pass		
CCV-8877;AV20-20120724	7/24/2012 1:38:45 PM	82236-334	0.2677	Pass	99.0551	Pass
AV21						
IC-9520;AV21-20120607	6/8/2012 12:14:09 AM	82237-334	0.2708	Pass		
CCV-9520;AV21-20120724	7/24/2012 5:03:53 PM	82237-334	0.2734	Pass	100.966	Pass
AV22						
IC-8879;AV22-20120607	6/8/2012 12:14:14 AM	82238-334	0.2679	Pass		
CCV-8879;AV22-20120724	7/24/2012 5:04:03 PM	82238-334	0.2639	Pass	98.5154	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV23						
IC-9792;AV23-20120607	6/8/2012 12:14:18 AM	82240-334	0.2673	Pass		
CCV-9792;AV23-20120724	7/24/2012 5:04:14 PM	82240-334	0.2688	Pass	100.552	Pass
AV24						
IC-9793;AV24-20120607	6/8/2012 12:14:21 AM	82241-334	0.2734	Pass		
CCV-9793;AV24-20120724	7/24/2012 5:04:24 PM	82241-334	0.2766	Pass	101.156	Pass
AV43						
IC-9794;AV43-20120607	6/7/2012 7:50:31 PM	82242-334	0.2699	Pass		
CCV-9794;AV43-20120725	7/25/2012 10:28:07 PM	82242-334	0.2686	Pass	99.5158	Pass
AV44						
IC-9795;AV44-20120610	6/11/2012 3:27:57 PM	82243-334	0.2664	Pass		
CCV-9795;AV44-20120725	7/25/2012 10:28:12 PM	82243-334	0.2682	Pass	100.672	Pass
AV45						
IC-9817;AV45-20120610	6/11/2012 3:28:22 PM	82244-334	0.2704	Pass		
CCV-9817;AV45-20120725	7/25/2012 10:28:16 PM	82244-334	0.0001	Eval	5.53444	Fail
AV46						
IC-9884;AV46-20120610	6/11/2012 3:28:47 PM	82245-334	0.2849	Pass		
CCV-9884;AV46-20120725	7/25/2012 10:28:19 PM	82245-334	0.2804	Pass	98.4164	Pass
AV47						
IC-9885;AV47-20120611a	6/12/2012 1:04:12 AM	82246-334	0.2678	Pass		
AV48						
IC-9886;AV48-20120610	6/11/2012 3:29:40 PM	82247-334	0.2764	Pass		
CCV-9886;AV48-20120725	7/25/2012 10:28:31 PM	82247-334	0.0004	Eval	0.13021	Fail
AV49						
IC-7107;AV49-20120610	6/10/2012 8:17:41 PM	82232-334	0.2927	Pass		
CCV-7107;AV49-20120725	7/25/2012 10:28:34 PM	82232-334	0.2909	Pass	99.3834	Pass
AV50						
IC-8874;AV50-20120610	6/10/2012 8:17:58 PM	82233-334	0.2754	Pass		
CCV-8874;AV50-20120726	7/26/2012 1:58:10 PM	82233-334	0.2729	Pass	99.0921	Pass
AV51						
IC-8875;AV51-20120610	6/10/2012 8:18:12 PM	82234-334	0.2819	Pass		
CCV-8875;AV51-20120725	7/25/2012 10:28:38 PM	82234-334	0.2814	Pass	99.8447	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV52						
IC-8876;AV52-20120610	6/10/2012 8:18:26 PM	82235-334	0.2911	Pass		
CCV-8876;AV52-20120726	7/26/2012 1:58:30 PM	82235-334	0.2925	Pass	100.496	Pass
AV53						
IC-8877;AV53-20120610	6/10/2012 8:18:38 PM	82236-334	0.2773	Pass		
CCV-8877;AV53-20120725	7/25/2012 10:28:41 PM	82236-334	0.2775	Pass	100.055	Pass
AV54						
IC-9520;AV54-20120610	6/10/2012 8:18:52 PM	82237-334	0.2798	Pass		
CCV-9520;AV54-20120726	7/26/2012 1:58:49 PM	82237-334	0.2760	Pass	98.6444	Pass
AV55						
IC-8879;AV55-20120610	6/10/2012 8:19:03 PM	82238-334	0.2720	Pass		
CCV-8879;AV55-20120725	7/25/2012 10:28:45 PM	82238-334	0.2697	Pass	99.1518	Pass
AV56						
IC-9792;AV56-20120610	6/10/2012 8:19:16 PM	82240-334	0.2709	Pass		
CCV-9792;AV56-20120725	7/25/2012 10:28:48 PM	82240-334	0.0003	Eval	0.11605	Fail
AV57						
IC-9793;AV57-20120610	6/10/2012 8:19:29 PM	82241-334	0.2764	Pass		
CCV-9793;AV57-20120725	7/25/2012 10:28:52 PM	82241-334	0.2763	Pass	99.9520	Pass
AV58						
IC-9794;AV58-20120610	6/10/2012 8:19:36 PM	82242-334	0.2550	Pass		
AV59						
IC-9795;AV59-20120610	6/10/2012 8:19:39 PM	82243-334	0.2753	Pass		
AV60						
IC-9817;AV60-20120610	6/10/2012 8:19:43 PM	82244-334	0.2682	Pass		
CCV-9817;AV60-20120725a	7/26/2012 12:42:30 AM	82244-334	0.2705	Pass	100.836	Pass
AV61						
IC-9884;AV61-20120610	6/10/2012 8:19:46 PM	82245-334	0.2792	Pass		
CCV-9884;AV61-20120725	7/26/2012 12:42:24 AM	82245-334	0.2785	Pass	99.7356	Pass
AV62						
IC-9885;AV62-20120610	6/10/2012 8:19:49 PM	82246-334	0.2742	Pass		
CCV-9885;AV62-20120725	7/26/2012 12:42:33 AM	82246-334	0.2738	Pass	99.8594	Pass
AV63						
IC-9886;AV63-20120610	6/10/2012 8:19:57 PM	82247-334	0.2707	Pass		
CCV-9886;AV63-20120725	7/26/2012 12:42:36 AM	82247-334	0.2716	Pass	100.323	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV64						
IC-7107;AV64-20120610	6/11/2012 3:30:09 PM	82232-334	0.2935	Pass		
CCV-7107;AV64-20120726	7/26/2012 1:58:00 PM	82232-334	0.2935	Pass	99.9978	Pass
AV65						
IC-8874;AV65-20120610	6/11/2012 3:30:33 PM	82233-334	0.2759	Pass		
CCV-8874;AV65-20120725	7/25/2012 10:28:56 PM	82233-334	0.2745	Pass	99.4624	Pass
AV66						
IC-8875;AV66-20120610	6/11/2012 3:30:58 PM	82234-334	0.2846	Pass		
CCV-8875;AV66-20120725	7/26/2012 12:42:39 AM	82234-334	0.2809	Pass	98.6783	Pass
AV67						
IC-8876;AV67-20120610	6/11/2012 3:31:27 PM	82235-334	0.2953	Pass		
CCV-8876;AV67-20120726	7/26/2012 5:34:37 PM	82235-334	0.2975	Pass	100.722	Pass
AV68						
IC-8877;AV68-20120610	6/11/2012 3:31:53 PM	82236-334	0.2740	Pass		
CCV-8877;AV68-20120725	7/26/2012 12:42:42 AM	82236-334	0.2748	Pass	100.313	Pass
AV69						
IC-9520;AV69-20120610	6/11/2012 3:32:14 PM	82237-334	0.2763	Pass		
CCV-9520;AV69-20120725	7/25/2012 10:29:25 PM	82237-334	0.2730	Pass	98.8075	Pass
AV70						
IC-8879;AV70-20120610	6/11/2012 3:32:41 PM	82238-334	0.2732	Pass		
CCV-8879;AV70-20120725	7/26/2012 12:42:45 AM	82238-334	0.2708	Pass	99.1119	Pass
AV71						
IC-9792;AV71-20120610	6/11/2012 3:33:08 PM	82240-334	0.2763	Pass		
CCV-9792;AV71-20120725	7/26/2012 12:42:50 AM	82240-334	0.2755	Pass	99.7117	Pass
AV72						
IC-9793;AV72-20120610	6/11/2012 3:33:25 PM	82241-334	0.2910	Pass		
CCV-9793;AV72-20120725	7/26/2012 12:42:53 AM	82241-334	0.2858	Pass	98.2175	Pass
AV73						
IC-9794;AV73-20120610	6/11/2012 3:33:47 PM	82242-334	0.2766	Pass		
CCV-9794;AV73-20120725	7/26/2012 12:42:56 AM	82242-334	0.2759	Pass	99.7532	Pass
AV74						
IC-9795;AV74-20120611a	6/12/2012 1:04:18 AM	82243-334	0.2701	Pass		
CCV-9795;AV74-20120726	7/26/2012 8:37:17 AM	82243-334	0.2731	Pass	101.096	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV75						
IC-9817;AV75-20120611a	6/12/2012 1:04:21 AM	82244-334	0.2656	Pass		
CCV-9817;AV75-20120724	7/24/2012 8:51:29 PM	82244-334	0.2666	Pass	100.388	Pass
AV76						
IC-9884;AV76-20120611a	6/12/2012 1:04:24 AM	82245-334	0.2723	Pass		
CCV-9884;AV76-20120724a	7/24/2012 10:38:47 PM	82245-334	0.2757	Pass	101.240	Pass
AV77						
IC-9885;AV77-20120612	6/12/2012 10:16:22 PM	82246-334	0.2674	Pass		
CCV-9885;AV77-20120724	7/24/2012 8:51:53 PM	82246-334	0.2687	Pass	100.497	Pass
AV78						
IC-9886;AV78-20120611a	6/12/2012 1:04:27 AM	82247-334	0.2751	Pass		
CCV-9886;AV78-20120724	7/24/2012 8:51:41 PM	82247-334	0.2748	Pass	99.8636	Pass
AV79						
IC-7107;AV79-20120611a	6/12/2012 1:04:30 AM	82232-334	0.2824	Pass		
CCV-7107;AV79-20120724	7/24/2012 8:51:57 PM	82232-334	0.2837	Pass	100.462	Pass
AV80						
IC-8874;AV80-20120611a	6/12/2012 1:04:34 AM	82233-334	0.2692	Pass		
CCV-8874;AV80-20120724	7/24/2012 8:51:46 PM	82233-334	0.2697	Pass	100.177	Pass
AV81						
IC-8875;AV81-20120611a	6/12/2012 1:04:37 AM	82234-334	0.2858	Pass		
CCV-8875;AV81-20120724	7/24/2012 8:51:49 PM	82234-334	0.2899	Pass	101.429	Pass
AV82						
IC-8876;AV82-20120611a	6/12/2012 1:04:40 AM	82235-334	0.2768	Pass		
CCV-8876;AV82-20120724	7/24/2012 8:52:00 PM	82235-334	0.2737	Pass	98.8822	Pass
AV83						
IC-8877;AV83-20120611a	6/12/2012 1:04:44 AM	82236-334	0.2727	Pass		
CCV-8877;AV83-20120724	7/24/2012 8:52:04 PM	82236-334	0.2757	Pass	101.099	Pass
AV84						
IC-9520;AV84-20120611a	6/12/2012 1:04:47 AM	82237-334	0.2790	Pass		
CCV-9520;AV84-20120724	7/24/2012 8:52:07 PM	82237-334	0.2748	Pass	98.4876	Pass
AV85						
IC-8879;AV85-20120611a	6/12/2012 1:04:50 AM	82238-334	0.2774	Pass		
CCV-8879;AV85-20120724	7/24/2012 8:52:11 PM	82238-334	0.2782	Pass	100.258	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV86						
IC-9792;AV86-20120611a	6/12/2012 1:04:54 AM	82240-334	0.2769	Pass		
CCV-9792;AV86-20120724	7/24/2012 8:52:16 PM	82240-334	0.2771	Pass	100.046	Pass
AV87						
IC-9793;AV87-20120611a	6/12/2012 1:04:56 AM	82241-334	0.2951	Pass		
CCV-9793;AV87-20120724	7/24/2012 8:52:20 PM	82241-334	0.2909	Pass	98.5861	Pass
AV88						
IC-9794;AV88-20120611a	6/12/2012 1:04:59 AM	82242-334	0.2744	Pass		
CCV-9794;AV88-20120724	7/24/2012 5:04:33 PM	82242-334	0.2741	Pass	99.8889	Pass
AV89						
IC-9795;AV89-20120612	6/12/2012 3:39:24 PM	82243-334	0.2684	Pass		
CCV-9795;AV89-20120724	7/24/2012 5:04:44 PM	82243-334	0.2679	Pass	99.8091	Pass
AV90						
IC-9817;AV90-20120612	6/12/2012 3:39:50 PM	82244-334	0.2731	Pass		
CCV-9817;AV90	7/24/2012 5:05:02 PM	82244-334	0.2721	Pass	99.6298	Pass
AV91						
IC-9884;AV91-20120612	6/12/2012 3:40:10 PM	82245-334	0.2787	Pass		
CCV-9884;AV91-20120724	7/24/2012 11:50:47 PM	82245-334	0.2800	Pass	100.497	Pass
AV92						
IC-9885;AV92-20120613	6/13/2012 10:43:01 AM	82246-334	0.2705	Pass		
CCV-9885;AV92-20120724	7/24/2012 5:08:08 PM	82246-334	0.2723	Pass	100.677	Pass
AV93						
IC-9886;AV93-20120612	6/12/2012 3:40:55 PM	82247-334	0.2715	Pass		
CCV-9886;AV93-20120724	7/24/2012 5:08:42 PM	82247-334	0.2720	Pass	100.196	Pass
AV94						
IC-7107;AV94-20120612a	6/12/2012 3:41:17 PM	82232-334	0.2797	Pass		
CCV-7107;AV94-20120724	7/24/2012 10:38:52 PM	82232-334	0.2772	Pass	99.0992	Pass
AV95						
IC-8874;AV95-20120608	6/8/2012 8:45:55 AM	82233-334	0.2719	Pass		
CCV-8874;AV95-20120724	7/24/2012 10:38:55 PM	82233-334	0.2708	Pass	99.6240	Pass
AV96						
IC-8875;AV96-20120612	6/12/2012 3:41:40 PM	82234-334	0.2831	Pass		
CCV-8875;;AV96-20120724	7/24/2012 10:39:01 PM	82234-334	0.0004	Eval	0.14859	Fail

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV97						
IC-8876;AV97-20120612a	6/12/2012 10:16:26 PM	82235-334	0.2765	Pass		
CCV-8876;;AV97-20120724	7/24/2012 10:39:04 PM	82235-334	0.2779	Pass	100.508	Pass
AV98						
IC-8877;AV98-20120608	6/8/2012 8:46:02 AM	82236-334	0.2818	Pass		
CCV-8877;AV98-20120724	7/24/2012 5:06:05 PM	82236-334	0.2793	Pass	99.1155	Pass
AV99						
IC-9520;AV99-20120608	6/8/2012 8:46:10 AM	82237-334	0.2703	Pass		
AV100						
IC-8879;AV100-20120608	6/8/2012 8:46:24 AM	82238-334	0.2719	Pass		
CCV-8879;AV100-20120726	7/26/2012 1:58:58 PM	82238-334	0.2703	Pass	99.4168	Pass
AV101						
IC-9792;AV101-20120608	6/8/2012 8:46:34 AM	82240-334	0.2802	Pass		
CCV-9792;AV101-20120726	7/26/2012 8:37:09 AM	82240-334	0.2787	Pass	99.4560	Pass
AV102						
IC-9793;AV102-20120608	6/8/2012 8:46:41 AM	82241-334	0.2826	Pass		
CCV-9793;AV102-20120726	7/26/2012 8:37:21 AM	82241-334	0.2794	Pass	98.8711	Pass
AV103						
IC-9794;AV103-20120607	6/8/2012 12:14:29 AM	82242-334	0.2709	Pass		
CCV-9794;AV103-20120726	7/26/2012 1:59:26 PM	82242-334	0.2718	Pass	100.319	Pass
AV104						
IC-9795;AV104-20120607	6/8/2012 12:14:40 AM	82243-334	0.2646	Pass		
CCV-9795;AV104-20120726	7/26/2012 1:59:37 PM	82243-334	0.0056	Eval	2.11169	Fail
AV105						
IC-9817;AV105-20120607	6/8/2012 12:14:48 AM	82244-334	0.2474	Pass		
CCV-9817;AV10520120726	7/26/2012 1:59:46 PM	82244-334	0.2451	Pass	99.0547	Pass
AV106						
IC-9884;AV106-20120607	6/8/2012 12:15:09 AM	82245-334	0.2797	Pass		
CCV-9884;AV106-20120726	7/26/2012 1:59:55 PM	82245-334	0.2758	Pass	98.5711	Pass
AV107						
IC-9885;AV107-20120607	6/8/2012 12:14:52 AM	82246-334	0.2711	Pass		
CCV-9885;AV107-20120726	7/26/2012 2:00:04 PM	82246-334	0.2733	Pass	100.841	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV108						
IC-9886;AV108-20120607	6/8/2012 12:14:56 AM	82247-334	0.2812	Pass		
CCV-9886;AV108-20120726	7/26/2012 2:00:19 PM	82247-334	0.2814	Pass	100.046	Pass
AV109						
IC-7107;AV109-20120608	6/8/2012 8:46:47 AM	82232-334	0.2782	Pass		
CCV-7107;AV109-20120725	7/26/2012 12:42:58 AM	82232-334	0.2245	Pass	80.7030	Fail
CCV-7107;AV109-20120726	7/26/2012 5:32:41 PM	82232-334	0.2819	Pass	101.326	Pass
CCV-7107;AV109-20120726a	7/26/2012 7:44:53 PM	82232-334	0.2763	Pass	99.3002	Pass
AV111						
IC-8875;AV111-20120608	6/8/2012 8:46:55 AM	82234-334	0.2800	Pass		
CCV-8875;AV111-20120726	7/26/2012 8:37:25 AM	82234-334	0.2787	Pass	99.5396	Pass
AV112						
IC-8876;AV112-20120608	6/8/2012 8:47:01 AM	82235-334	0.2750	Pass		
CCV-8876;AV112-20120725	7/25/2012 10:31:58 PM	82235-334	0.2735	Pass	99.4658	Pass
AV113						
IC-8877;AV113-20120607	6/8/2012 12:15:02 AM	82236-334	0.2765	Pass		
CCV-8877;AV113-20120726	7/26/2012 8:37:29 AM	82236-334	0.2772	Pass	100.255	Pass
AV114						
IC-9520;AV114-20120612	6/12/2012 3:42:22 PM	82237-334	0.2746	Pass		
CCV-9520;AV114-20120726	7/26/2012 5:34:48 PM	82237-334	0.2758	Pass	100.401	Pass
AV115						
IC-8879;AV115-20120612	6/12/2012 3:42:43 PM	82238-334	0.2756	Pass		
CCV-8879;AV115-20120726	7/26/2012 5:34:59 PM	82238-334	0.2762	Pass	100.213	Pass
AV116						
IC-9792;AV116-20120612	6/12/2012 3:43:02 PM	82240-334	0.2914	Pass		
CCV-9792;AV116-20120726	7/26/2012 1:59:07 PM	82240-334	0.2773	Pass	95.1508	Pass
AV117						
IC-9793;AV117-20120612	6/12/2012 3:43:27 PM	82241-334	0.2628	Pass		
CCV-9793;AV117-20120726	7/26/2012 1:59:16 PM	82241-334	0.2683	Pass	102.098	Pass
AV118						
IC-9794;AV118-20120608	6/8/2012 8:47:07 AM	82242-334	0.2728	Pass		
CCV-9794;AV118-20120726	7/26/2012 8:37:33 AM	82242-334	0.2689	Pass	98.5708	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV119						
IC-9795;AV119-20120608	6/8/2012 8:47:13 AM	82243-334	0.2655	Pass		
CCV-9795;AV119-20120726	7/26/2012 10:05:57 PM	82243-334	0.2655	Pass	99.9791	Pass
AV120						
IC-9817;AV120-20120608	6/8/2012 8:47:18 AM	82244-334	0.2668	Pass		
CCV-9817;AV120-20120726	7/26/2012 8:37:37 AM	82244-334	0.2689	Pass	100.796	Pass
AV121						
IC-9884;AV121-20120608	6/8/2012 8:54:38 AM	82245-334	0.2825	Pass		
CCV-9884;AV121-20120726	7/26/2012 8:37:41 AM	82245-334	0.2811	Pass	99.4897	Pass
AV122						
IC-9885;AV122-20120608	6/8/2012 8:54:44 AM	82246-334	0.2678	Pass		
CCV-9885;AV122-20120726	7/26/2012 8:37:46 AM	82246-334	0.2712	Pass	101.254	Pass
AV123						
IC-9886;AV123-20120614	6/15/2012 11:45:44 AM	82247-334	0.2691	Pass		
CCV-9886;AV123-20120726	7/26/2012 8:37:50 AM	82247-334	0.2654	Pass	98.6278	Pass
AV124						
IC-7107;AV124-20120614	6/15/2012 11:46:08 AM	82232-334	0.2653	Pass		
CCV-7107;AV124-20120726	7/26/2012 10:16:23 PM	82232-334	0.2661	Pass	100.282	Pass
AV125						
IC-8874;AV125-20120614	6/15/2012 11:46:45 AM	82233-334	0.2675	Pass		
CCV-8874;AV125-20120725	7/26/2012 12:43:01 AM	82233-334	0.2694	Pass	100.701	Pass
AV126						
IC-8875;AV126-20120614	6/15/2012 11:47:26 AM	82234-334	0.2760	Pass		
CCV-8875;AV126-20120726	7/26/2012 1:58:20 PM	82234-334	0.2746	Pass	99.5062	Pass
AV127						
IC-8876;AV127-20120614	6/15/2012 11:48:11 AM	82235-334	0.2775	Pass		
CCV-8876;AV127-20120725	7/26/2012 12:43:05 AM	82235-334	0.0003	Eval	0.11569	Fail
AV128						
IC-8877;AV128-20120614	6/15/2012 11:48:54 AM	82236-334	0.2685	Pass		
CCV-8877;AV128-20120726	7/26/2012 1:58:40 PM	82236-334	0.0003	Eval	0.11553	Fail
AV129						
IC-9520;AV12920120614	6/15/2012 11:49:36 AM	82237-334	0.2710	Pass		
CCV-9520;AV129-20120725	7/26/2012 12:43:08 AM	82237-334	0.2730	Pass	100.742	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV130						
IC-8879;AV130-20120614	6/15/2012 11:50:34 AM	82238-334	0.2707	Pass		
CCV-8879;AV130-20120726	7/26/2012 8:37:58 AM	82238-334	0.2711	Pass	100.151	Pass
AV131						
IC-9792;AV131-20120612	6/12/2012 10:16:29 PM	82240-334	0.2777	Pass		
CCV-9792;AV131-20120726	7/26/2012 7:43:47 PM	82240-334	0.2754	Pass	99.1770	Pass
AV132						
IC-9793;AV132-20120612	6/12/2012 10:16:32 PM	82241-334	0.2711	Pass		
CCV-9793;AV132-20120726	7/26/2012 5:35:09 PM	82241-334	0.2728	Pass	100.644	Pass
AV133						
IC-9794;AV133-20120612	6/12/2012 3:43:51 PM	82242-334	0.2627	Pass		
CCV-9794;AV133-20120726	7/26/2012 7:43:55 PM	82242-334	0.2629	Pass	100.084	Pass
AV134						
IC-9795;AV134-20120612	6/12/2012 10:16:35 PM	82243-334	0.2665	Pass		
CCV-9795;AV134-20120726	7/26/2012 7:44:04 PM	82243-334	0.2637	Pass	98.9425	Pass
AV135						
IC-9817;AV135-20120612	6/12/2012 10:16:38 PM	82244-334	0.2610	Pass		
CCV-9817;AV135-20120726	7/26/2012 7:44:16 PM	82244-334	0.2622	Pass	100.442	Pass
AV136						
IC-9884;AV136-20120612	6/12/2012 10:16:41 PM	82245-334	0.2745	Pass		
CCV-9884;AV13620120726	7/26/2012 7:44:27 PM	82245-334	0.2725	Pass	99.2766	Pass
AV137						
IC-9885;AV137-20120621	6/21/2012 2:01:56 PM	82246-334	0.2674	Pass		
CCV-9885;AV137-20120726	7/26/2012 7:44:35 PM	82246-334	0.2648	Pass	99.0375	Pass
AV138						
IC-9886;AV138-20120608	6/8/2012 8:55:45 AM	82247-334	0.2683	Pass		
CCV-9886;AV138-20120726	7/26/2012 7:44:43 PM	82247-334	0.2672	Pass	99.5864	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Monthly Backgrounds
Alpha Vision
July 2012
AV1-146

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:16:36PM 7/25/2012

Sample

Sample Name: ICB;AV50
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

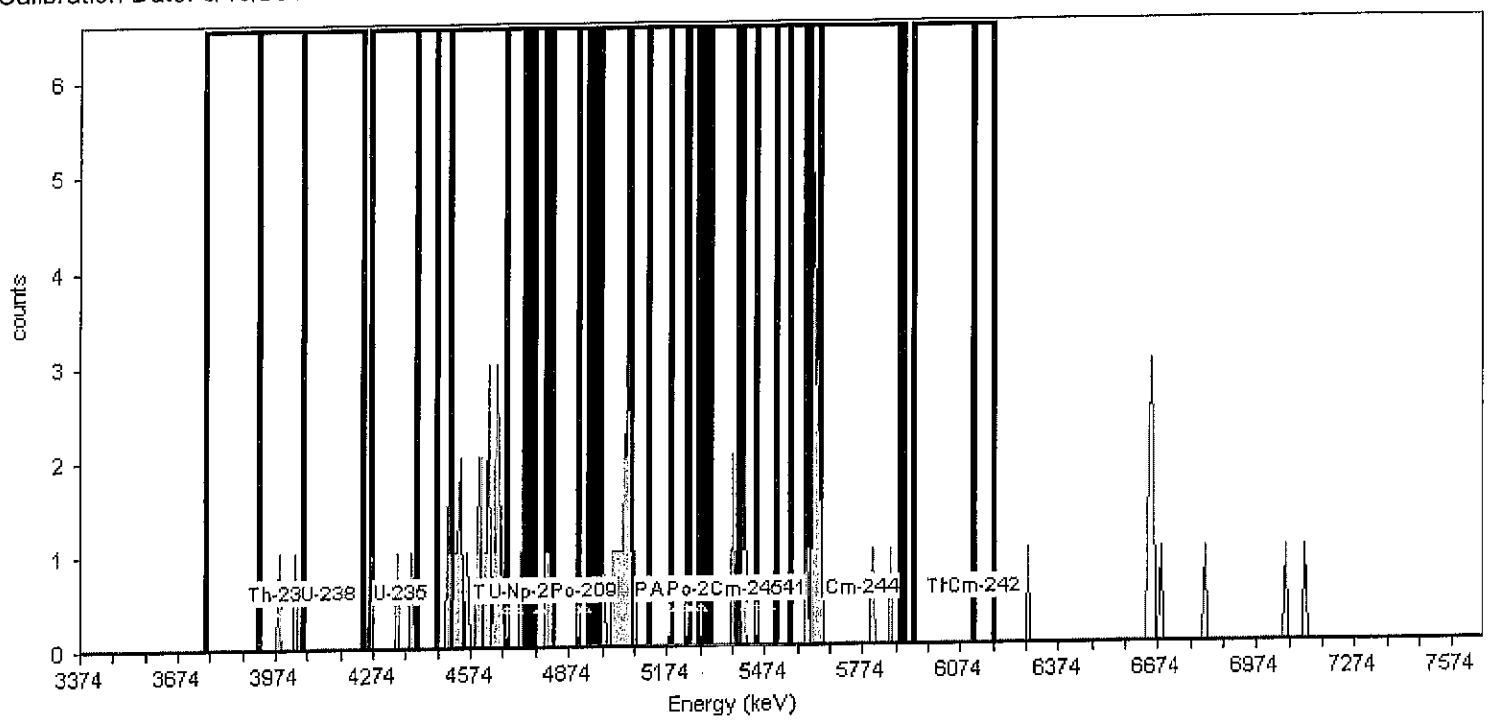
Analyst: 60040

Acquisition

Detector: AV50 , SN: 50-060W2
Acquisition Start Date: 7/24/2012 9:07:09PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-8874;AV50-20120610
Calibration Date: 6/10/2012 8:17:58PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.54% +/- 0.39% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 76.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	2.00	2.083E-003	1.804E-003
U-235	4.36	4.26	4.46	3.00	3.125E-003	2.083E-003
Th-230	4.68	4.40	4.75	23.00	2.396E-002	5.103E-003
U-234	4.71	4.51	4.82	23.00	2.396E-002	5.103E-003
Pu-242	4.90	4.68	4.95	3.00	3.125E-003	2.083E-003
Th-229	4.86	4.74	5.12	16.00	1.667E-002	4.295E-003
Np-237	4.78	4.77	4.81	1.00	1.042E-003	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	14.00	1.458E-002	4.034E-003
Am-243	5.23	5.05	5.31	6.00	6.250E-003	2.756E-003
U-232	5.25	5.06	5.40	6.00	6.250E-003	2.756E-003
Th-228	5.45	5.19	5.51	5.00	5.208E-003	2.552E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	5.00	5.208E-003	2.552E-003
Am-241	5.48	5.30	5.60	6.00	6.250E-003	2.756E-003
Cm-245	5.42	5.40	5.45	3.00	3.125E-003	2.083E-003
Pu-236	5.76	5.61	5.89	14.00	1.458E-002	4.034E-003
Cm-244	5.78	5.64	5.90	5.00	5.208E-003	2.552E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:16:51PM 7/25/2012

Sample

Sample Name: ICB;AV51
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

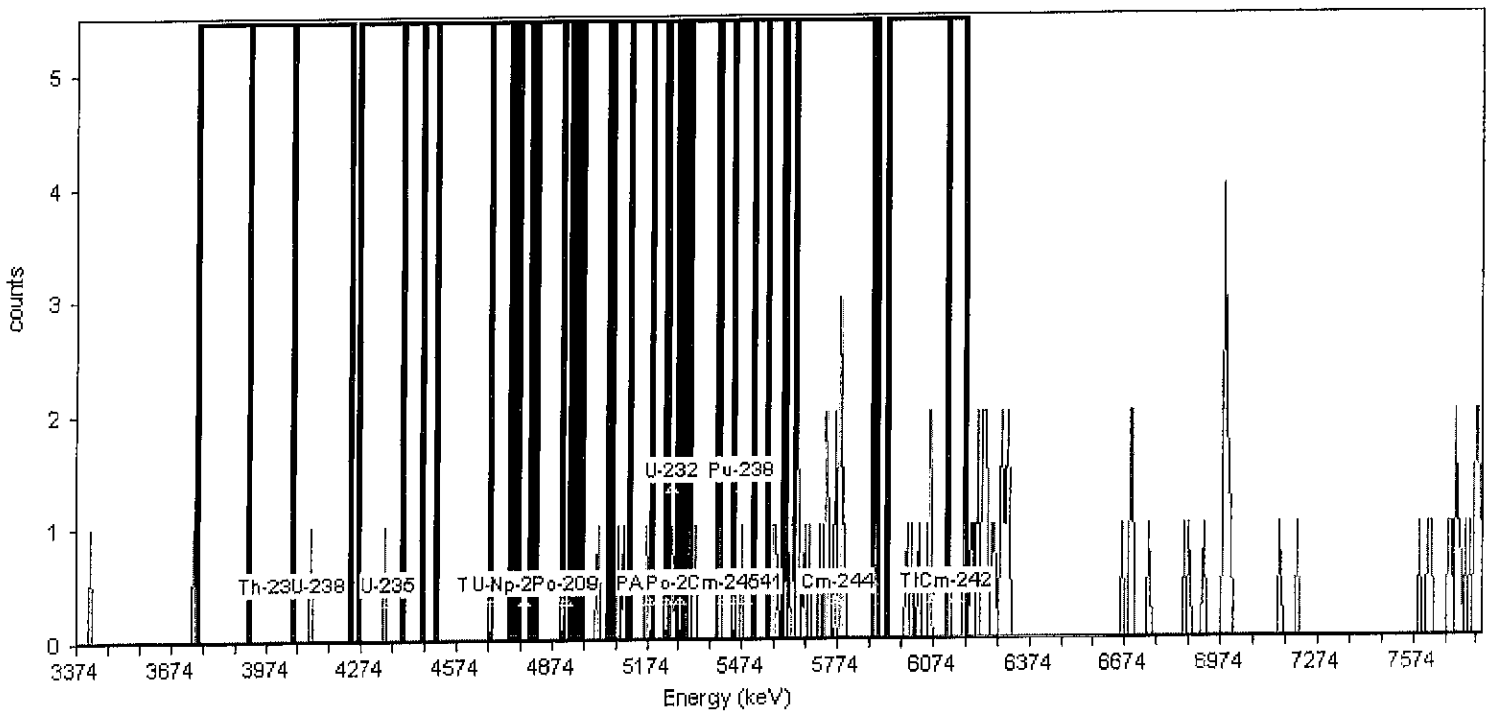
Analyst: 60040

Acquisition

Detector: AV51 , SN: 48-109I1
Acquisition Start Date: 7/24/2012 9:07:10PM
Live Time: 960.00 min.
Real Time: 963.14 min.
Calibration Name: IC-8875;AV51-20120610
Calibration Date: 6/10/2012 8:18:12PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 28.19% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 98.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	3.00	3.125E-003	2.083E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	4.00	4.167E-003	2.329E-003
Am-243	5.23	5.05	5.31	5.00	5.208E-003	2.552E-003
U-232	5.25	5.06	5.40	8.00	8.333E-003	3.125E-003
Th-228	5.45	5.19	5.51	6.00	6.250E-003	2.756E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	5.00	5.208E-003	2.552E-003
Am-241	5.48	5.30	5.60	8.00	8.333E-003	3.125E-003
Cm-245	5.42	5.40	5.45	1.00	1.042E-003	1.473E-003
Pu-236	5.76	5.61	5.89	19.00	1.979E-002	4.658E-003
Cm-244	5.78	5.64	5.90	17.00	1.771E-002	4.419E-003
Th-227	6.07	5.93	6.18	7.00	7.292E-003	2.946E-003
Cm-242	6.15	6.12	6.18	2.00	2.083E-003	1.804E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:16:59PM 7/25/2012

Sample

Sample Name: ICB;AV52
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

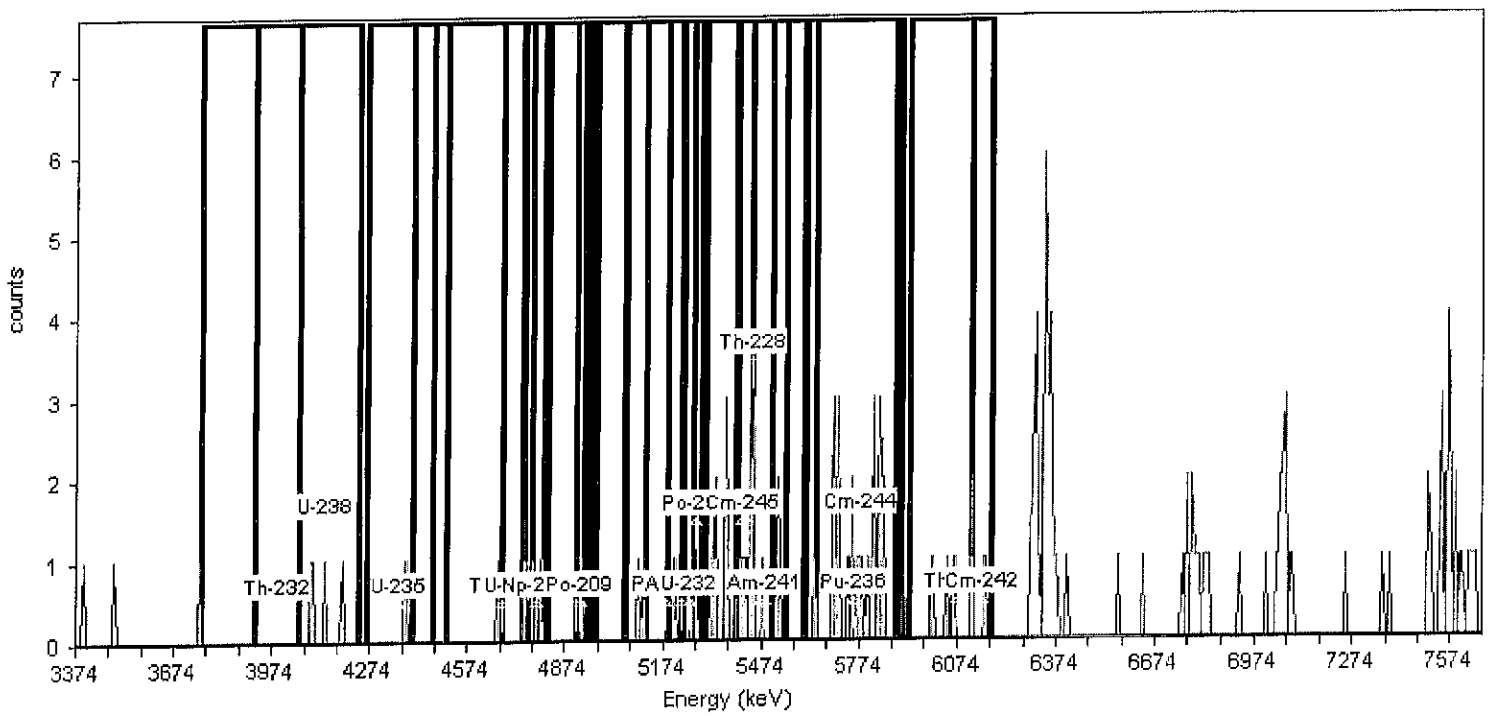
Analyst: 60040

Acquisition

Detector: AV52 , SN:
Acquisition Start Date: 7/24/2012 9:07:11PM
Live Time: 960.00 min.
Real Time: 963.14 min.
Calibration Name: IC-8876;AV52-20120610
Calibration Date: 6/10/2012 8:18:26PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 29.11% +/- 0.33% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 155.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	4.00	4.167E-003	2.329E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	3.00	3.125E-003	2.083E-003
U-234	4.71	4.51	4.82	6.00	6.250E-003	2.756E-003
Pu-242	4.90	4.68	4.95	6.00	6.250E-003	2.756E-003
Th-229	4.86	4.74	5.12	8.00	8.333E-003	3.125E-003
Np-237	4.78	4.77	4.81	3.00	3.125E-003	2.083E-003
Po-209	4.92	4.90	4.93	1.00	1.042E-003	1.473E-003
Pu-239	5.18	4.97	5.24	3.00	3.125E-003	2.083E-003
Am-243	5.23	5.05	5.31	5.00	5.208E-003	2.552E-003
U-232	5.25	5.06	5.40	14.00	1.458E-002	4.034E-003
Th-228	5.45	5.19	5.51	21.00	2.187E-002	4.886E-003
Po-210	5.28	5.23	5.29	2.00	2.083E-003	1.804E-003
Pu-238	5.47	5.27	5.55	22.00	2.292E-002	4.996E-003
Am-241	5.48	5.30	5.60	21.00	2.187E-002	4.886E-003
Cm-245	5.42	5.40	5.45	9.00	9.375E-003	3.294E-003
Pu-236	5.76	5.61	5.89	28.00	2.917E-002	5.610E-003
Cm-244	5.78	5.64	5.90	27.00	2.813E-002	5.512E-003
Th-227	6.07	5.93	6.18	7.00	7.292E-003	2.946E-003
Cm-242	6.15	6.12	6.18	4.00	4.167E-003	2.329E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:17:09PM 7/25/2012

Sample

Sample Name: ICB;AV53
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

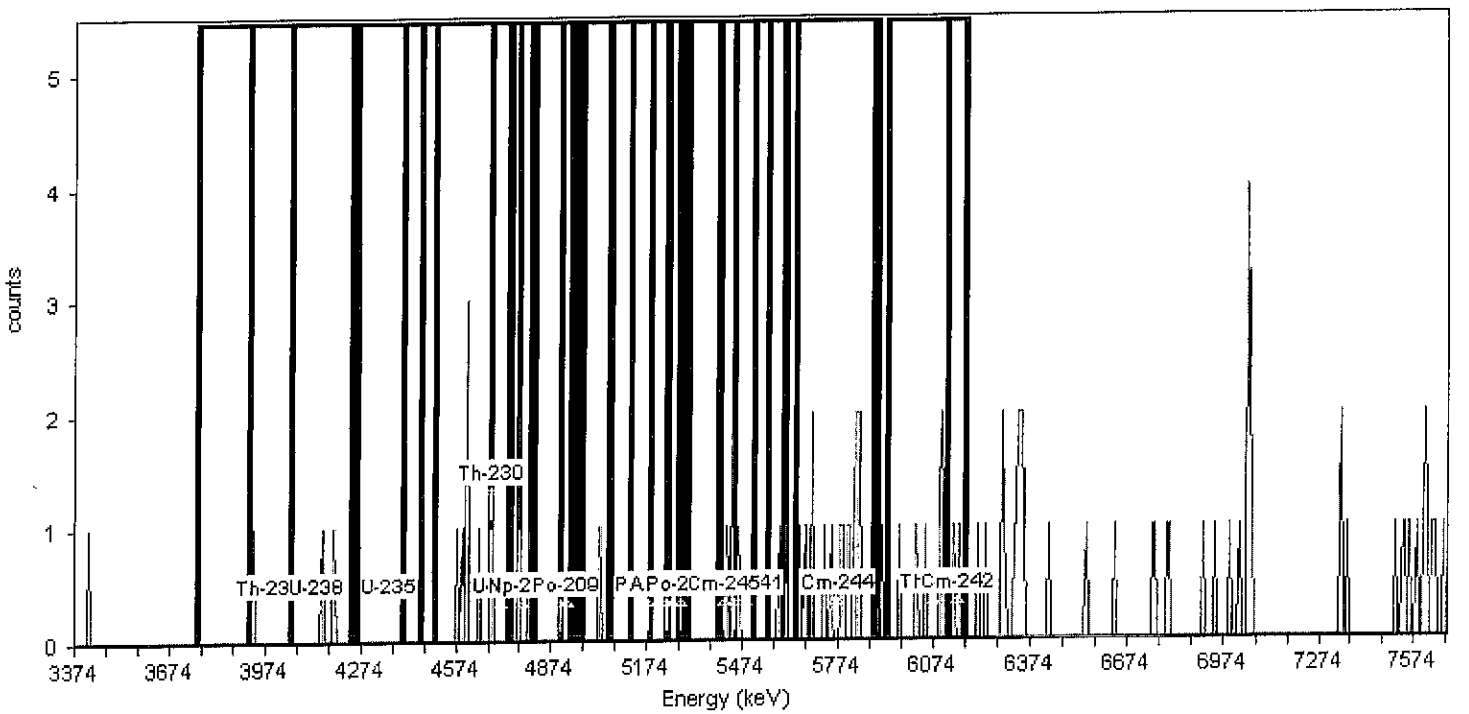
Analyst: 60040

Acquisition

Detector: AV53 , SN: 50-051A6
Acquisition Start Date: 7/24/2012 9:07:12PM
Live Time: 960.00 min.
Real Time: 963.14 min.
Calibration Name: IC-8877;AV53-20120610
Calibration Date: 6/10/2012 8:18:38PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.73% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 90.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	3.00	3.125E-003	2.083E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	8.00	8.333E-003	3.125E-003
U-234	4.71	4.51	4.82	11.00	1.146E-002	3.608E-003
Pu-242	4.90	4.68	4.95	5.00	5.208E-003	2.552E-003
Th-229	4.86	4.74	5.12	4.00	4.167E-003	2.329E-003
Np-237	4.78	4.77	4.81	3.00	3.125E-003	2.083E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	0.00	0.000E+000	1.473E-003
U-232	5.25	5.06	5.40	0.00	0.000E+000	1.473E-003
Th-228	5.45	5.19	5.51	4.00	4.167E-003	2.329E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	4.00	4.167E-003	2.329E-003
Am-241	5.48	5.30	5.60	5.00	5.208E-003	2.552E-003
Cm-245	5.42	5.40	5.45	3.00	3.125E-003	2.083E-003
Pu-236	5.76	5.61	5.89	17.00	1.771E-002	4.419E-003
Cm-244	5.78	5.64	5.90	16.00	1.667E-002	4.295E-003
Th-227	6.07	5.93	6.18	8.00	8.333E-003	3.125E-003
Cm-242	6.15	6.12	6.18	2.00	2.083E-003	1.804E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:53:58AM 7/28/2012

Sample

Sample Name: ICB;AV54
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012f
Description:

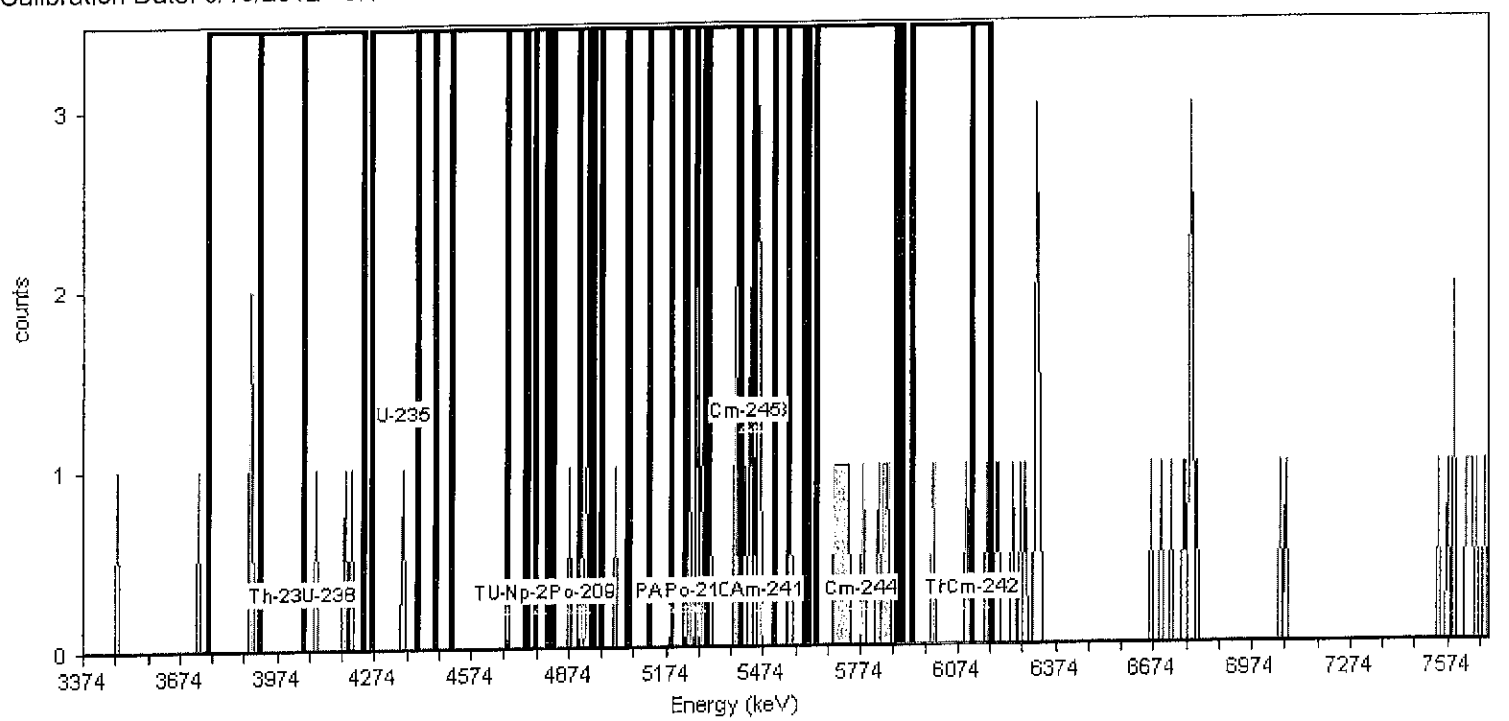
Analyst: 60040

Acquisition

Detector: AV54 , SN: 48-046II6
Acquisition Start Date: 7/27/2012 10:53:52AM
Live Time: 960.00 min.
Real Time: 960.00 min.
Calibration Name: IC-9520;AV54-20120610
Calibration Date: 6/10/2012 8:18:52PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.98% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 74.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	3.00	3.125E-003	2.083E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	3.00	3.125E-003	2.083E-003
Th-229	4.86	4.74	5.12	4.00	4.167E-003	2.329E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	2.00	2.083E-003	1.804E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	4.00	4.167E-003	2.329E-003
U-232	5.25	5.06	5.40	7.00	7.292E-003	2.946E-003
Th-228	5.45	5.19	5.51	14.00	1.458E-002	4.034E-003
Po-210	5.28	5.23	5.29	4.00	4.167E-003	2.329E-003
Pu-238	5.47	5.27	5.55	13.00	1.354E-002	3.898E-003
Am-241	5.48	5.30	5.60	11.00	1.146E-002	3.608E-003
Cm-245	5.42	5.40	5.45	4.00	4.167E-003	2.329E-003
Pu-236	5.76	5.61	5.89	12.00	1.250E-002	3.756E-003
Cm-244	5.78	5.64	5.90	12.00	1.250E-002	3.756E-003
Th-227	6.07	5.93	6.18	3.00	3.125E-003	2.083E-003
Cm-242	6.15	6.12	6.18	1.00	1.042E-003	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:17:20PM 7/25/2012

Sample

Sample Name: ICB;AV55
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

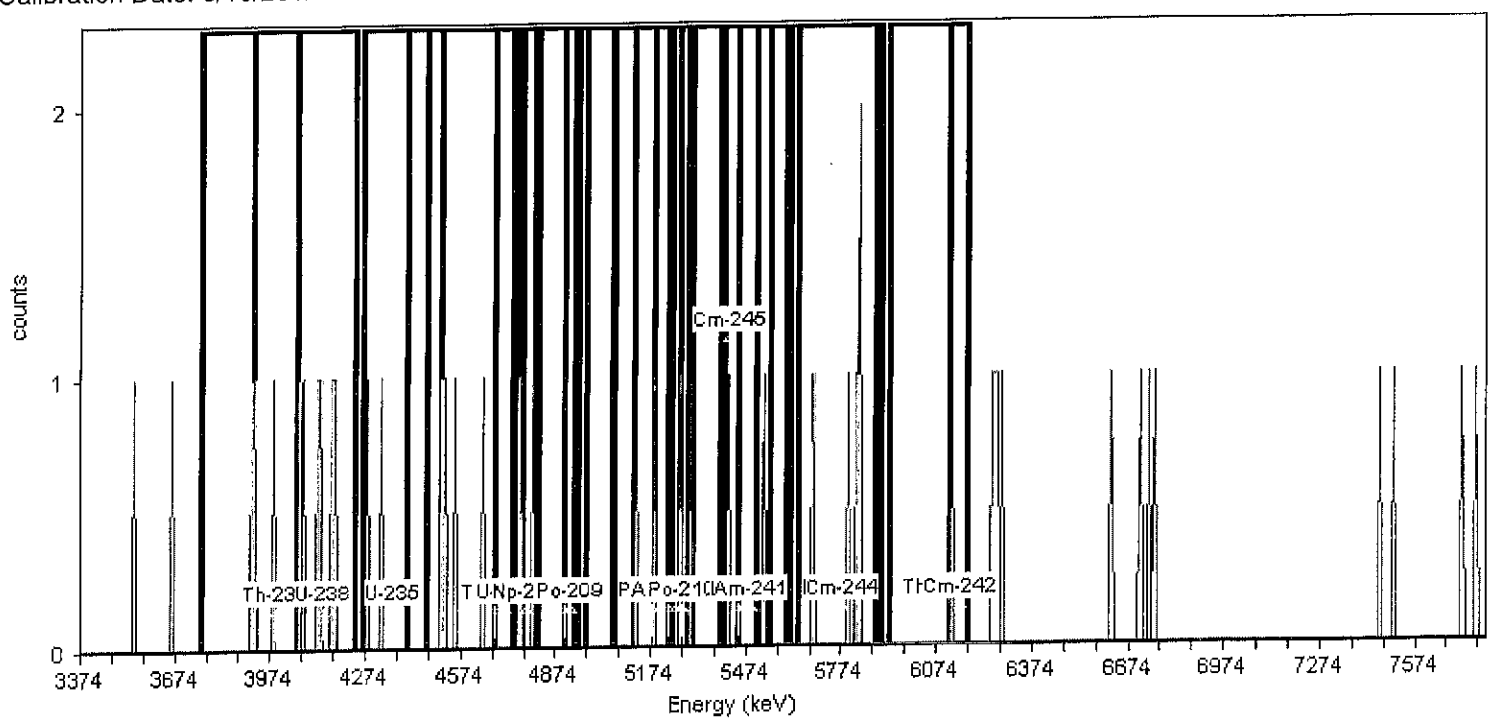
Analyst: 60040

Acquisition

Detector: AV55 , SN: 50-051C2
Acquisition Start Date: 7/24/2012 9:07:13PM
Live Time: 960.00 min.
Real Time: 963.14 min.
Calibration Name: IC-8879;AV55-20120610
Calibration Date: 6/10/2012 8:19:03PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.20% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 47.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	3.00	3.125E-003	2.083E-003
U-238	4.14	3.92	4.24	9.00	9.375E-003	3.294E-003
U-235	4.36	4.26	4.46	2.00	2.083E-003	1.804E-003
Th-230	4.68	4.40	4.75	5.00	5.208E-003	2.552E-003
U-234	4.71	4.51	4.82	8.00	8.333E-003	3.125E-003
Pu-242	4.90	4.68	4.95	3.00	3.125E-003	2.083E-003
Th-229	4.86	4.74	5.12	3.00	3.125E-003	2.083E-003
Np-237	4.78	4.77	4.81	1.00	1.042E-003	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	4.00	4.167E-003	2.329E-003
U-232	5.25	5.06	5.40	4.00	4.167E-003	2.329E-003
Th-228	5.45	5.19	5.51	4.00	4.167E-003	2.329E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	4.00	4.167E-003	2.329E-003
Am-241	5.48	5.30	5.60	3.00	3.125E-003	2.083E-003
Cm-245	5.42	5.40	5.45	1.00	1.042E-003	1.473E-003
Pu-236	5.76	5.61	5.89	6.00	6.250E-003	2.756E-003
Cm-244	5.78	5.64	5.90	6.00	6.250E-003	2.756E-003
Th-227	6.07	5.93	6.18	1.00	1.042E-003	1.473E-003
Cm-242	6.15	6.12	6.18	1.00	1.042E-003	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:17:26PM 7/25/2012

Sample

Sample Name: ICB;AV56
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

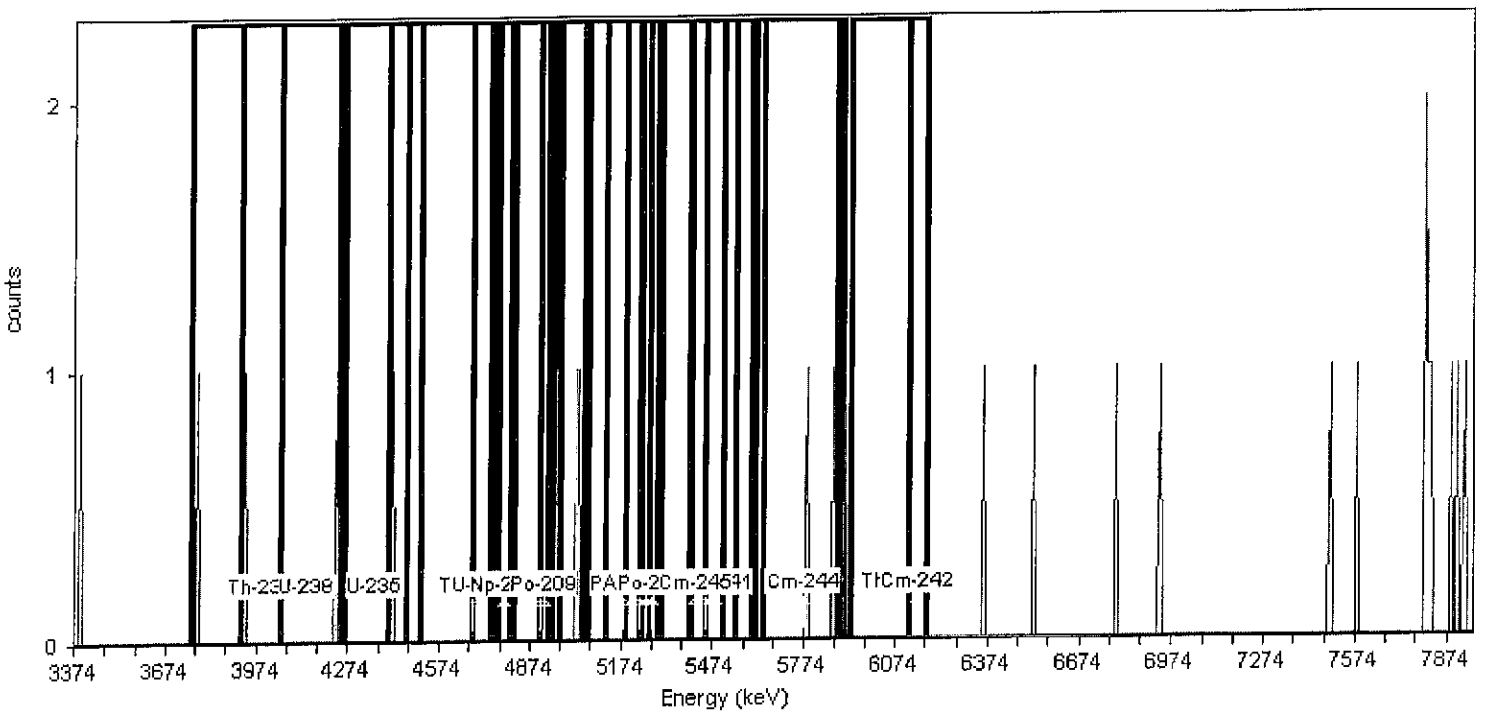
Analyst: 60040

Acquisition

Detector: AV56 , SN:
Acquisition Start Date: 7/24/2012 9:07:14PM
Live Time: 960.00 min.
Real Time: 963.14 min.
Calibration Name: IC-9792;AV56-20120610
Calibration Date: 6/10/2012 8:19:16PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.09% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 24.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	2.00	2.083E-003	1.804E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	1.00	1.042E-003	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	3.00	3.125E-003	2.083E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	0.00	0.000E+000	1.473E-003
U-232	5.25	5.06	5.40	0.00	0.000E+000	1.473E-003
Th-228	5.45	5.19	5.51	0.00	0.000E+000	1.473E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	0.00	0.000E+000	1.473E-003
Am-241	5.48	5.30	5.60	0.00	0.000E+000	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	2.00	2.083E-003	1.804E-003
Cm-244	5.78	5.64	5.90	2.00	2.083E-003	1.804E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:17:31PM 7/25/2012

Sample

Sample Name: ICB;AV57
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

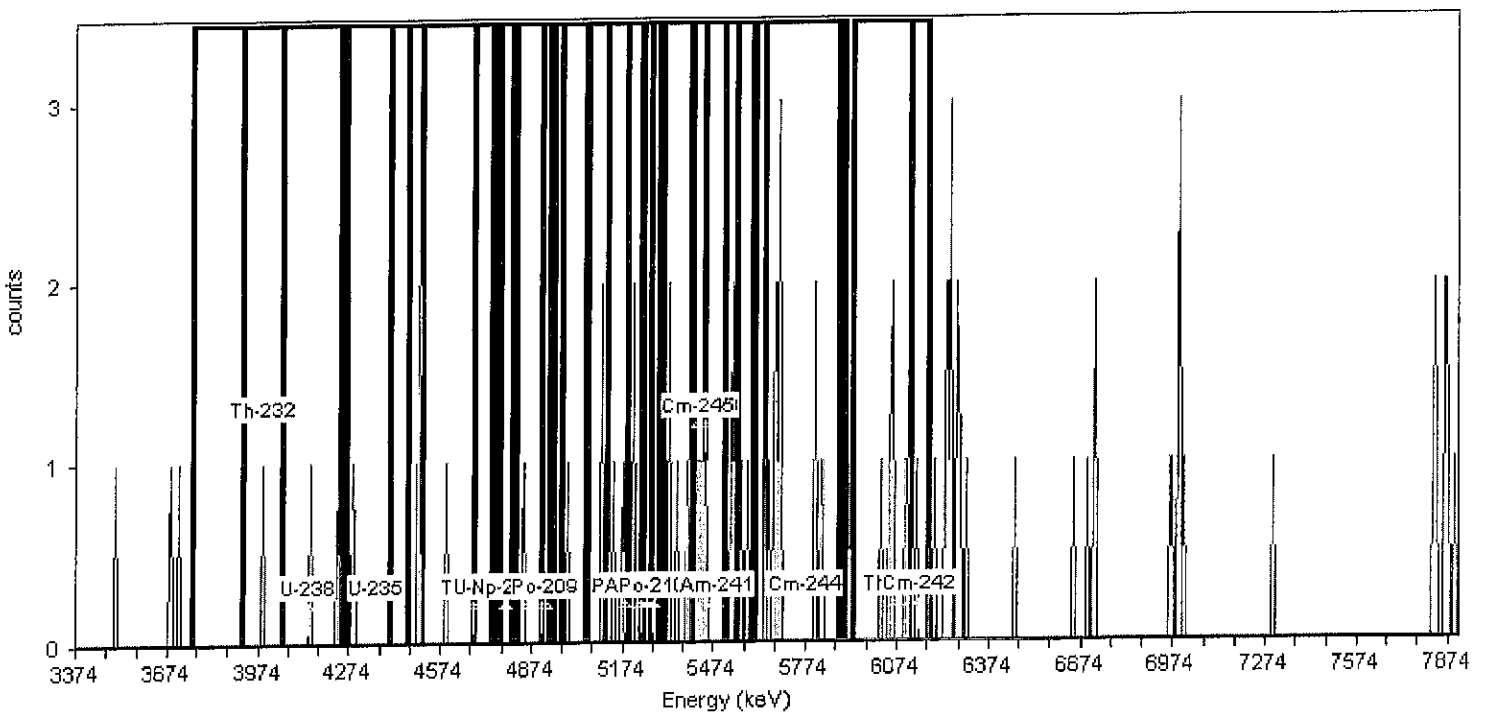
Analyst: 60040

Acquisition

Detector: AV57 , SN: 48-158EE3
Acquisition Start Date: 7/24/2012 9:07:15PM
Live Time: 960.00 min.
Real Time: 963.14 min.
Calibration Name: IC-9793;AV57-20120610
Calibration Date: 6/10/2012 8:19:29PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.64% +/- 0.33% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 87.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	3.00	3.125E-003	2.083E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	3.00	3.125E-003	2.083E-003
U-234	4.71	4.51	4.82	1.00	1.042E-003	1.473E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	4.00	4.167E-003	2.329E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	8.00	8.333E-003	3.125E-003
Am-243	5.23	5.05	5.31	7.00	7.292E-003	2.946E-003
U-232	5.25	5.06	5.40	11.00	1.146E-002	3.608E-003
Th-228	5.45	5.19	5.51	11.00	1.146E-002	3.608E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	12.00	1.250E-002	3.756E-003
Am-241	5.48	5.30	5.60	14.00	1.458E-002	4.034E-003
Cm-245	5.42	5.40	5.45	5.00	5.208E-003	2.552E-003
Pu-236	5.76	5.61	5.89	12.00	1.250E-002	3.756E-003
Cm-244	5.78	5.64	5.90	12.00	1.250E-002	3.756E-003
Th-227	6.07	5.93	6.18	8.00	8.333E-003	3.125E-003
Cm-242	6.15	6.12	6.18	2.00	2.083E-003	1.804E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:09:07PM 7/25/2012

Sample

Sample Name: ICB;AV59
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

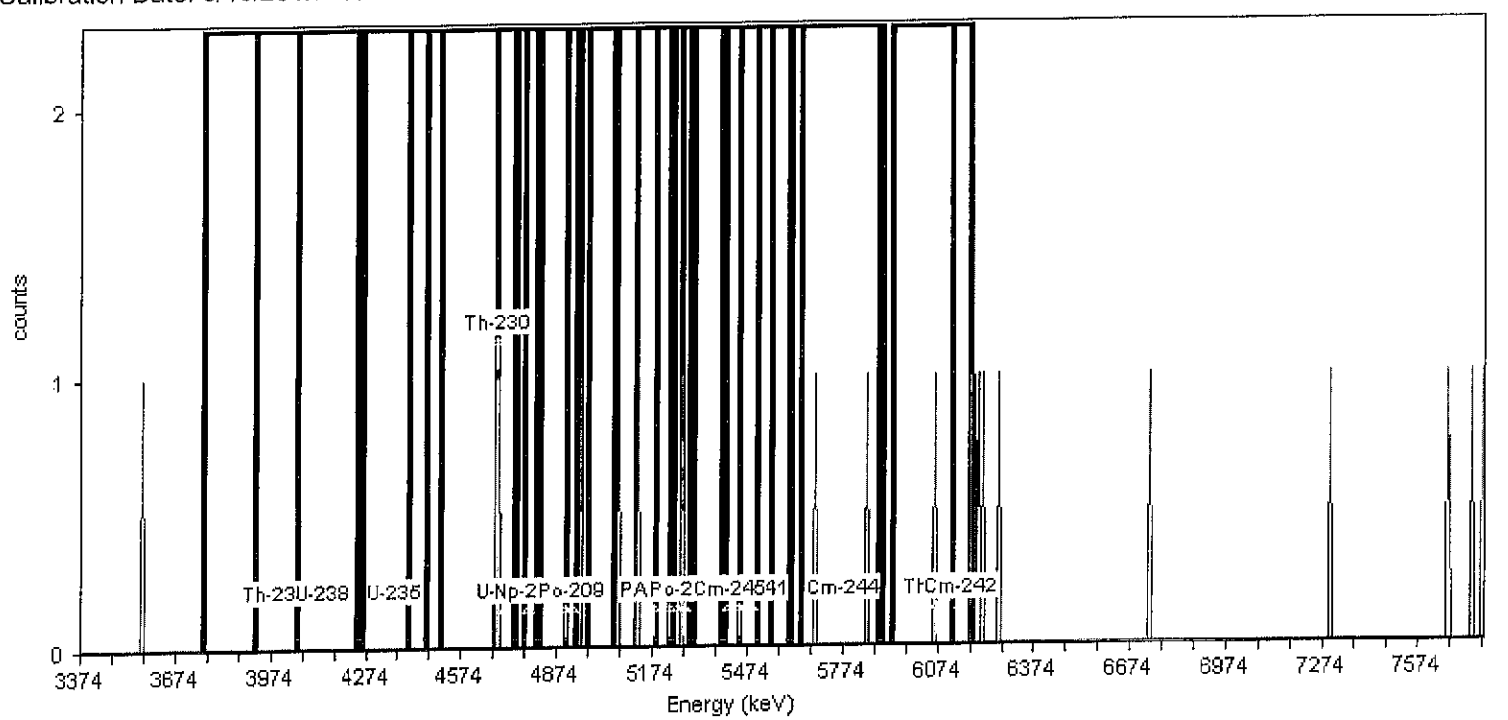
Analyst: 60040

Acquisition

Detector: AV59 , SN: 49-155M7
Acquisition Start Date: 7/24/2012 9:07:16PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9795;AV59-20120610
Calibration Date: 6/10/2012 8:19:39PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.53% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 20.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	0.00	0.000E+000	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	2.00	2.083E-003	1.804E-003
U-234	4.71	4.51	4.82	2.00	2.083E-003	1.804E-003
Pu-242	4.90	4.68	4.95	3.00	3.125E-003	2.083E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	3.00	3.125E-003	2.083E-003
U-232	5.25	5.06	5.40	3.00	3.125E-003	2.083E-003
Th-228	5.45	5.19	5.51	1.00	1.042E-003	1.473E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	1.00	1.042E-003	1.473E-003
Am-241	5.48	5.30	5.60	0.00	0.000E+000	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	2.00	2.083E-003	1.804E-003
Cm-244	5.78	5.64	5.90	2.00	2.083E-003	1.804E-003
Th-227	6.07	5.93	6.18	1.00	1.042E-003	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Monthly CCV
Alpha Vision
July 2012
AV1-146

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV1						
IC-7107;AV1-20120607	6/7/2012 3:02:16 PM	82232-334	0.2756	Pass		
CCV-7107;AV1-20120724	7/24/2012 1:37:50 PM	82232-334	0.2749	Pass	99.7401	Pass
AV2						
IC-8874;AV2-20120607	6/7/2012 3:02:23 PM	82233-334	0.2693	Pass		
CCV-8874;AV2-20120724	7/24/2012 1:38:06 PM	82233-334	0.2737	Pass	101.617	Pass
AV3						
IC-8875;AV3-20120607	6/7/2012 3:02:28 PM	82234-334	0.2857	Pass		
CCV-8875;AV3-20120724	7/24/2012 1:38:18 PM	82234-334	0.2813	Pass	98.4574	Pass
AV4						
IC-8876;AV4-20120607	6/7/2012 3:02:32 PM	82235-334	0.2793	Pass		
CCV-8876;AV4-20120724	7/24/2012 1:38:33 PM	82235-334	0.2759	Pass	98.7801	Pass
AV6						
IC-9520;AV6-20120607a	6/7/2012 3:56:30 PM	82237-334	0.2792	Pass		
CCV-9520;AV6-20120724	7/24/2012 1:38:57 PM	82237-334	0.2815	Pass	100.837	Pass
AV7						
IC-8879;AV7-20120607	6/7/2012 4:03:51 PM	82238-334	0.2731	Pass		
CCV-8879;AV7-20120724	7/24/2012 1:39:10 PM	82238-334	0.2696	Pass	98.7133	Pass
AV8						
IC-9792;AV8-20120607	6/7/2012 4:06:21 PM	82240-334	0.2787	Pass		
CCV-9792;AV8-20120724	7/24/2012 1:39:22 PM	82240-334	0.2791	Pass	100.131	Pass
AV9						
IC-9793;AV9-20120607	6/7/2012 4:06:26 PM	82241-334	0.2781	Pass		
CCV-9793;AV9-20120724	7/24/2012 1:39:34 PM	82241-334	0.2797	Pass	100.590	Pass
AV10						
IC-9794;AV10-20120621	6/21/2012 2:01:39 PM	82242-334	0.2725	Pass		
AV11						
IC-9795;AV11-20120607	6/7/2012 7:50:12 PM	82243-334	0.2751	Pass		
CCV-9795;AV11-20120724	7/24/2012 1:40:24 PM	82243-334	0.2762	Pass	100.416	Pass
AV12						
IC-9817;AV12-20120607	6/7/2012 7:50:16 PM	82244-334	0.2699	Pass		
CCV-9817;AV12-20120724	7/24/2012 1:40:35 PM	82244-334	0.2659	Pass	98.5073	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Friday, July 27, 2012

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV13						
IC-9884;AV13-20120607	6/7/2012 7:50:19 PM	82245-334	0.2758	Pass		
CCV-9884;AV13-20120724	7/24/2012 1:40:46 PM	82245-334	0.2906	Pass	105.355	Fail
CCV-9884;AV13-20120724a	7/24/2012 5:02:56 PM	82245-334	0.2748	Pass	99.6538	Pass
CCV-9884;AV13-20120725	7/25/2012 11:44:29 AM	82245-334	0.2727	Pass	98.8754	Pass
AV14						
IC-9885;AV14-20120607	6/7/2012 7:50:22 PM	82246-334	0.2724	Pass		
CCV-9885;AV14-20120724	7/24/2012 1:41:00 PM	82246-334	0.2691	Pass	98.7814	Pass
AV15						
IC-9886;AV15-20120607	6/7/2012 7:50:24 PM	82247-334	0.2743	Pass		
CCV-9886;AV15-20120724	7/24/2012 1:41:10 PM	82247-334	0.2744	Pass	100.039	Pass
AV16						
IC-7107;AV16-20120607a	6/8/2012 12:12:55 AM	82232-334	0.2798	Pass		
CCV-7107;AV16-20120724	7/24/2012 5:03:06 PM	82232-334	0.2799	Pass	100.019	Pass
AV17						
IC-8874;AV17-20120607	6/8/2012 12:13:37 AM	82233-334	0.2631	Pass		
CCV-8874;AV17-20120724	7/24/2012 5:03:21 PM	82233-334	0.2669	Pass	101.451	Pass
AV18						
IC-8875;AV18-20120607	6/8/2012 12:13:58 AM	82234-334	0.2748	Pass		
CCV-8875;AV18-20120724	7/24/2012 5:05:40 PM	82234-334	0.2730	Pass	99.3381	Pass
AV19						
IC-8876;AV19-20120607	6/8/2012 12:14:05 AM	82235-334	0.2694	Pass		
CCV-8876;AV19-20120724	7/24/2012 5:03:44 PM	82235-334	0.2681	Pass	99.5055	Pass
AV20						
IC-8877;AV20-20120607	6/7/2012 7:50:28 PM	82236-334	0.2703	Pass		
CCV-8877;AV20-20120724	7/24/2012 1:38:45 PM	82236-334	0.2677	Pass	99.0551	Pass
AV21						
IC-9520;AV21-20120607	6/8/2012 12:14:09 AM	82237-334	0.2708	Pass		
CCV-9520;AV21-20120724	7/24/2012 5:03:53 PM	82237-334	0.2734	Pass	100.966	Pass
AV22						
IC-8879;AV22-20120607	6/8/2012 12:14:14 AM	82238-334	0.2679	Pass		
CCV-8879;AV22-20120724	7/24/2012 5:04:03 PM	82238-334	0.2639	Pass	98.5154	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV23						
IC-9792;AV23-20120607	6/8/2012 12:14:18 AM	82240-334	0.2673	Pass		
CCV-9792;AV23-20120724	7/24/2012 5:04:14 PM	82240-334	0.2688	Pass	100.552	Pass
AV24						
IC-9793;AV24-20120607	6/8/2012 12:14:21 AM	82241-334	0.2734	Pass		
CCV-9793;AV24-20120724	7/24/2012 5:04:24 PM	82241-334	0.2766	Pass	101.156	Pass
AV43						
IC-9794;AV43-20120607	6/7/2012 7:50:31 PM	82242-334	0.2699	Pass		
CCV-9794;AV43-20120725	7/25/2012 10:28:07 PM	82242-334	0.2686	Pass	99.5158	Pass
AV44						
IC-9795;AV44-20120610	6/11/2012 3:27:57 PM	82243-334	0.2664	Pass		
CCV-9795;AV44-20120725	7/25/2012 10:28:12 PM	82243-334	0.2682	Pass	100.672	Pass
AV45						
IC-9817;AV45-20120610	6/11/2012 3:28:22 PM	82244-334	0.2704	Pass		
CCV-9817;AV45-20120725	7/25/2012 10:28:16 PM	82244-334	0.0001	Eval	5.53444	Fail
AV46						
IC-9884;AV46-20120610	6/11/2012 3:28:47 PM	82245-334	0.2849	Pass		
CCV-9884;AV46-20120725	7/25/2012 10:28:19 PM	82245-334	0.2804	Pass	98.4164	Pass
AV47						
IC-9885;AV47-20120611a	6/12/2012 1:04:12 AM	82246-334	0.2678	Pass		
AV48						
IC-9886;AV48-20120610	6/11/2012 3:29:40 PM	82247-334	0.2764	Pass		
CCV-9886;AV48-20120725	7/25/2012 10:28:31 PM	82247-334	0.0004	Eval	0.13021	Fail
AV49						
IC-7107;AV49-20120610	6/10/2012 8:17:41 PM	82232-334	0.2927	Pass		
CCV-7107;AV49-20120725	7/25/2012 10:28:34 PM	82232-334	0.2909	Pass	99.3834	Pass
AV50						
IC-8874;AV50-20120610	6/10/2012 8:17:58 PM	82233-334	0.2754	Pass		
CCV-8874;AV50-20120726	7/26/2012 1:58:10 PM	82233-334	0.2729	Pass	99.0921	Pass
AV51						
IC-8875;AV51-20120610	6/10/2012 8:18:12 PM	82234-334	0.2819	Pass		
CCV-8875;AV51-20120725	7/25/2012 10:28:38 PM	82234-334	0.2814	Pass	99.8447	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV52						
IC-8876;AV52-20120610	6/10/2012 8:18:26 PM	82235-334	0.2911	Pass		
CCV-8876;AV52-20120726	7/26/2012 1:58:30 PM	82235-334	0.2925	Pass	100.496	Pass
AV53						
IC-8877;AV53-20120610	6/10/2012 8:18:38 PM	82236-334	0.2773	Pass		
CCV-8877;AV53-20120725	7/25/2012 10:28:41 PM	82236-334	0.2775	Pass	100.055	Pass
AV54						
IC-9520;AV54-20120610	6/10/2012 8:18:52 PM	82237-334	0.2798	Pass		
CCV-9520;AV54-20120726	7/26/2012 1:58:49 PM	82237-334	0.2760	Pass	98.6444	Pass
AV55						
IC-8879;AV55-20120610	6/10/2012 8:19:03 PM	82238-334	0.2720	Pass		
CCV-8879;AV55-20120725	7/25/2012 10:28:45 PM	82238-334	0.2697	Pass	99.1518	Pass
AV56						
IC-9792;AV56-20120610	6/10/2012 8:19:16 PM	82240-334	0.2709	Pass		
CCV-9792;AV56-20120725	7/25/2012 10:28:48 PM	82240-334	0.0003	Eval	0.11605	Fail
AV57						
IC-9793;AV57-20120610	6/10/2012 8:19:29 PM	82241-334	0.2764	Pass		
CCV-9793;AV57-20120725	7/25/2012 10:28:52 PM	82241-334	0.2763	Pass	99.9520	Pass
AV58						
IC-9794;AV58-20120610	6/10/2012 8:19:36 PM	82242-334	0.2550	Pass		
AV59						
IC-9795;AV59-20120610	6/10/2012 8:19:39 PM	82243-334	0.2753	Pass		
AV60						
IC-9817;AV60-20120610	6/10/2012 8:19:43 PM	82244-334	0.2682	Pass		
CCV-9817;AV60-20120725a	7/26/2012 12:42:30 AM	82244-334	0.2705	Pass	100.836	Pass
AV61						
IC-9884;AV61-20120610	6/10/2012 8:19:46 PM	82245-334	0.2792	Pass		
CCV-9884;AV61-20120725	7/26/2012 12:42:24 AM	82245-334	0.2785	Pass	99.7356	Pass
AV62						
IC-9885;AV62-20120610	6/10/2012 8:19:49 PM	82246-334	0.2742	Pass		
CCV-9885;AV62-20120725	7/26/2012 12:42:33 AM	82246-334	0.2738	Pass	99.8594	Pass
AV63						
IC-9886;AV63-20120610	6/10/2012 8:19:57 PM	82247-334	0.2707	Pass		
CCV-9886;AV63-20120725	7/26/2012 12:42:36 AM	82247-334	0.2716	Pass	100.323	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV64						
IC-7107;AV64-20120610	6/11/2012 3:30:09 PM	82232-334	0.2935	Pass		
CCV-7107;AV64-20120726	7/26/2012 1:58:00 PM	82232-334	0.2935	Pass	99.9978	Pass
AV65						
IC-8874;AV65-20120610	6/11/2012 3:30:33 PM	82233-334	0.2759	Pass		
CCV-8874;AV65-20120725	7/25/2012 10:28:56 PM	82233-334	0.2745	Pass	99.4624	Pass
AV66						
IC-8875;AV66-20120610	6/11/2012 3:30:58 PM	82234-334	0.2846	Pass		
CCV-8875;AV66-20120725	7/26/2012 12:42:39 AM	82234-334	0.2809	Pass	98.6783	Pass
AV67						
IC-8876;AV67-20120610	6/11/2012 3:31:27 PM	82235-334	0.2953	Pass		
CCV-8876;AV67-20120726	7/26/2012 5:34:37 PM	82235-334	0.2975	Pass	100.722	Pass
AV68						
IC-8877;AV68-20120610	6/11/2012 3:31:53 PM	82236-334	0.2740	Pass		
CCV-8877;AV68-20120725	7/26/2012 12:42:42 AM	82236-334	0.2748	Pass	100.313	Pass
AV69						
IC-9520;AV69-20120610	6/11/2012 3:32:14 PM	82237-334	0.2763	Pass		
CCV-9520;AV69-20120725	7/25/2012 10:29:25 PM	82237-334	0.2730	Pass	98.8075	Pass
AV70						
IC-8879;AV70-20120610	6/11/2012 3:32:41 PM	82238-334	0.2732	Pass		
CCV-8879;AV70-20120725	7/26/2012 12:42:45 AM	82238-334	0.2708	Pass	99.1119	Pass
AV71						
IC-9792;AV71-20120610	6/11/2012 3:33:08 PM	82240-334	0.2763	Pass		
CCV-9792;AV71-20120725	7/26/2012 12:42:50 AM	82240-334	0.2755	Pass	99.7117	Pass
AV72						
IC-9793;AV72-20120610	6/11/2012 3:33:25 PM	82241-334	0.2910	Pass		
CCV-9793;AV72-20120725	7/26/2012 12:42:53 AM	82241-334	0.2858	Pass	98.2175	Pass
AV73						
IC-9794;AV73-20120610	6/11/2012 3:33:47 PM	82242-334	0.2766	Pass		
CCV-9794;AV73-20120725	7/26/2012 12:42:56 AM	82242-334	0.2759	Pass	99.7532	Pass
AV74						
IC-9795;AV74-20120611a	6/12/2012 1:04:18 AM	82243-334	0.2701	Pass		
CCV-9795;AV74-20120726	7/26/2012 8:37:17 AM	82243-334	0.2731	Pass	101.096	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV75						
IC-9817;AV75-20120611a	6/12/2012 1:04:21 AM	82244-334	0.2656	Pass		
CCV-9817;AV75-20120724	7/24/2012 8:51:29 PM	82244-334	0.2666	Pass	100.388	Pass
AV76						
IC-9884;AV76-20120611a	6/12/2012 1:04:24 AM	82245-334	0.2723	Pass		
CCV-9884;AV76-20120724a	7/24/2012 10:38:47 PM	82245-334	0.2757	Pass	101.240	Pass
AV77						
IC-9885;AV77-20120612	6/12/2012 10:16:22 PM	82246-334	0.2674	Pass		
CCV-9885;AV77-20120724	7/24/2012 8:51:53 PM	82246-334	0.2687	Pass	100.497	Pass
AV78						
IC-9886;AV78-20120611a	6/12/2012 1:04:27 AM	82247-334	0.2751	Pass		
CCV-9886;AV78-20120724	7/24/2012 8:51:41 PM	82247-334	0.2748	Pass	99.8636	Pass
AV79						
IC-7107;AV79-20120611a	6/12/2012 1:04:30 AM	82232-334	0.2824	Pass		
CCV-7107;AV79-20120724	7/24/2012 8:51:57 PM	82232-334	0.2837	Pass	100.462	Pass
AV80						
IC-8874;AV80-20120611a	6/12/2012 1:04:34 AM	82233-334	0.2692	Pass		
CCV-8874;AV80-20120724	7/24/2012 8:51:46 PM	82233-334	0.2697	Pass	100.177	Pass
AV81						
IC-8875;AV81-20120611a	6/12/2012 1:04:37 AM	82234-334	0.2858	Pass		
CCV-8875;AV81-20120724	7/24/2012 8:51:49 PM	82234-334	0.2899	Pass	101.429	Pass
AV82						
IC-8876;AV82-20120611a	6/12/2012 1:04:40 AM	82235-334	0.2768	Pass		
CCV-8876;AV82-20120724	7/24/2012 8:52:00 PM	82235-334	0.2737	Pass	98.8822	Pass
AV83						
IC-8877;AV83-20120611a	6/12/2012 1:04:44 AM	82236-334	0.2727	Pass		
CCV-8877;AV83-20120724	7/24/2012 8:52:04 PM	82236-334	0.2757	Pass	101.099	Pass
AV84						
IC-9520;AV84-20120611a	6/12/2012 1:04:47 AM	82237-334	0.2790	Pass		
CCV-9520;AV84-20120724	7/24/2012 8:52:07 PM	82237-334	0.2748	Pass	98.4876	Pass
AV85						
IC-8879;AV85-20120611a	6/12/2012 1:04:50 AM	82238-334	0.2774	Pass		
CCV-8879;AV85-20120724	7/24/2012 8:52:11 PM	82238-334	0.2782	Pass	100.258	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV86						
IC-9792;AV86-20120611a	6/12/2012 1:04:54 AM	82240-334	0.2769	Pass		
CCV-9792;AV86-20120724	7/24/2012 8:52:16 PM	82240-334	0.2771	Pass	100.046	Pass
AV87						
IC-9793;AV87-20120611a	6/12/2012 1:04:56 AM	82241-334	0.2951	Pass		
CCV-9793;AV87-20120724	7/24/2012 8:52:20 PM	82241-334	0.2909	Pass	98.5861	Pass
AV88						
IC-9794;AV88-20120611a	6/12/2012 1:04:59 AM	82242-334	0.2744	Pass		
CCV-9794;AV88-20120724	7/24/2012 5:04:33 PM	82242-334	0.2741	Pass	99.8889	Pass
AV89						
IC-9795;AV89-20120612	6/12/2012 3:39:24 PM	82243-334	0.2684	Pass		
CCV-9795;AV89-20120724	7/24/2012 5:04:44 PM	82243-334	0.2679	Pass	99.8091	Pass
AV90						
IC-9817;AV90-20120612	6/12/2012 3:39:50 PM	82244-334	0.2731	Pass		
CCV-9817;AV90	7/24/2012 5:05:02 PM	82244-334	0.2721	Pass	99.6298	Pass
AV91						
IC-9884;AV91-20120612	6/12/2012 3:40:10 PM	82245-334	0.2787	Pass		
CCV-9884;AV91-20120724	7/24/2012 11:50:47 PM	82245-334	0.2800	Pass	100.497	Pass
AV92						
IC-9885;AV92-20120613	6/13/2012 10:43:01 AM	82246-334	0.2705	Pass		
CCV-9885;AV92-20120724	7/24/2012 5:08:08 PM	82246-334	0.2723	Pass	100.677	Pass
AV93						
IC-9886;AV93-20120612	6/12/2012 3:40:55 PM	82247-334	0.2715	Pass		
CCV-9886;AV93-20120724	7/24/2012 5:08:42 PM	82247-334	0.2720	Pass	100.196	Pass
AV94						
IC-7107;AV94-20120612a	6/12/2012 3:41:17 PM	82232-334	0.2797	Pass		
CCV-7107;AV94-20120724	7/24/2012 10:38:52 PM	82232-334	0.2772	Pass	99.0992	Pass
AV95						
IC-8874;AV95-20120608	6/8/2012 8:45:55 AM	82233-334	0.2719	Pass		
CCV-8874;AV95-20120724	7/24/2012 10:38:55 PM	82233-334	0.2708	Pass	99.6240	Pass
AV96						
IC-8875;AV96-20120612	6/12/2012 3:41:40 PM	82234-334	0.2831	Pass		
CCV-8875;;AV96-20120724	7/24/2012 10:39:01 PM	82234-334	0.0004	Eval	0.14859	Fail

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV97						
IC-8876;AV97-20120612a	6/12/2012 10:16:26 PM	82235-334	0.2765	Pass		
CCV-8876;;AV97-20120724	7/24/2012 10:39:04 PM	82235-334	0.2779	Pass	100.508	Pass
AV98						
IC-8877;AV98-20120608	6/8/2012 8:46:02 AM	82236-334	0.2818	Pass		
CCV-8877;AV98-20120724	7/24/2012 5:06:05 PM	82236-334	0.2793	Pass	99.1155	Pass
AV99						
IC-9520;AV99-20120608	6/8/2012 8:46:10 AM	82237-334	0.2703	Pass		
AV100						
IC-8879;AV100-20120608	6/8/2012 8:46:24 AM	82238-334	0.2719	Pass		
CCV-8879;AV100-20120726	7/26/2012 1:58:58 PM	82238-334	0.2703	Pass	99.4168	Pass
AV101						
IC-9792;AV101-20120608	6/8/2012 8:46:34 AM	82240-334	0.2802	Pass		
CCV-9792;AV101-20120726	7/26/2012 8:37:09 AM	82240-334	0.2787	Pass	99.4560	Pass
AV102						
IC-9793;AV102-20120608	6/8/2012 8:46:41 AM	82241-334	0.2826	Pass		
CCV-9793;AV102-20120726	7/26/2012 8:37:21 AM	82241-334	0.2794	Pass	98.8711	Pass
AV103						
IC-9794;AV103-20120607	6/8/2012 12:14:29 AM	82242-334	0.2709	Pass		
CCV-9794;AV103-20120726	7/26/2012 1:59:26 PM	82242-334	0.2718	Pass	100.319	Pass
AV104						
IC-9795;AV104-20120607	6/8/2012 12:14:40 AM	82243-334	0.2646	Pass		
CCV-9795;AV104-20120726	7/26/2012 1:59:37 PM	82243-334	0.0056	Eval	2.11169	Fail
AV105						
IC-9817;AV105-20120607	6/8/2012 12:14:48 AM	82244-334	0.2474	Pass		
CCV-9817;AV10520120726	7/26/2012 1:59:46 PM	82244-334	0.2451	Pass	99.0547	Pass
AV106						
IC-9884;AV106-20120607	6/8/2012 12:15:09 AM	82245-334	0.2797	Pass		
CCV-9884;AV106-20120726	7/26/2012 1:59:55 PM	82245-334	0.2758	Pass	98.5711	Pass
AV107						
IC-9885;AV107-20120607	6/8/2012 12:14:52 AM	82246-334	0.2711	Pass		
CCV-9885;AV107-20120726	7/26/2012 2:00:04 PM	82246-334	0.2733	Pass	100.841	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV108						
IC-9886;AV108-20120607	6/8/2012 12:14:56 AM	82247-334	0.2812	Pass		
CCV-9886;AV108-20120726	7/26/2012 2:00:19 PM	82247-334	0.2814	Pass	100.046	Pass
AV109						
IC-7107;AV109-20120608	6/8/2012 8:46:47 AM	82232-334	0.2782	Pass		
CCV-7107;AV109-20120725	7/26/2012 12:42:58 AM	82232-334	0.2245	Pass	80.7030	Fail
CCV-7107;AV109-20120726	7/26/2012 5:32:41 PM	82232-334	0.2819	Pass	101.326	Pass
CCV-7107;AV109-20120726a	7/26/2012 7:44:53 PM	82232-334	0.2763	Pass	99.3002	Pass
AV111						
IC-8875;AV111-20120608	6/8/2012 8:46:55 AM	82234-334	0.2800	Pass		
CCV-8875;AV111-20120726	7/26/2012 8:37:25 AM	82234-334	0.2787	Pass	99.5396	Pass
AV112						
IC-8876;AV112-20120608	6/8/2012 8:47:01 AM	82235-334	0.2750	Pass		
CCV-8876;AV112-20120725	7/25/2012 10:31:58 PM	82235-334	0.2735	Pass	99.4658	Pass
AV113						
IC-8877;AV113-20120607	6/8/2012 12:15:02 AM	82236-334	0.2765	Pass		
CCV-8877;AV113-20120726	7/26/2012 8:37:29 AM	82236-334	0.2772	Pass	100.255	Pass
AV114						
IC-9520;AV114-20120612	6/12/2012 3:42:22 PM	82237-334	0.2746	Pass		
CCV-9520;AV114-20120726	7/26/2012 5:34:48 PM	82237-334	0.2758	Pass	100.401	Pass
AV115						
IC-8879;AV115-20120612	6/12/2012 3:42:43 PM	82238-334	0.2756	Pass		
CCV-8879;AV115-20120726	7/26/2012 5:34:59 PM	82238-334	0.2762	Pass	100.213	Pass
AV116						
IC-9792;AV116-20120612	6/12/2012 3:43:02 PM	82240-334	0.2914	Pass		
CCV-9792;AV116-20120726	7/26/2012 1:59:07 PM	82240-334	0.2773	Pass	95.1508	Pass
AV117						
IC-9793;AV117-20120612	6/12/2012 3:43:27 PM	82241-334	0.2628	Pass		
CCV-9793;AV117-20120726	7/26/2012 1:59:16 PM	82241-334	0.2683	Pass	102.098	Pass
AV118						
IC-9794;AV118-20120608	6/8/2012 8:47:07 AM	82242-334	0.2728	Pass		
CCV-9794;AV118-20120726	7/26/2012 8:37:33 AM	82242-334	0.2689	Pass	98.5708	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV119						
IC-9795;AV119-20120608	6/8/2012 8:47:13 AM	82243-334	0.2655	Pass		
CCV-9795;AV119-20120726	7/26/2012 10:05:57 PM	82243-334	0.2655	Pass	99.9791	Pass
AV120						
IC-9817;AV120-20120608	6/8/2012 8:47:18 AM	82244-334	0.2668	Pass		
CCV-9817;AV120-20120726	7/26/2012 8:37:37 AM	82244-334	0.2689	Pass	100.796	Pass
AV121						
IC-9884;AV121-20120608	6/8/2012 8:54:38 AM	82245-334	0.2825	Pass		
CCV-9884;AV121-20120726	7/26/2012 8:37:41 AM	82245-334	0.2811	Pass	99.4897	Pass
AV122						
IC-9885;AV122-20120608	6/8/2012 8:54:44 AM	82246-334	0.2678	Pass		
CCV-9885;AV122-20120726	7/26/2012 8:37:46 AM	82246-334	0.2712	Pass	101.254	Pass
AV123						
IC-9886;AV123-20120614	6/15/2012 11:45:44 AM	82247-334	0.2691	Pass		
CCV-9886;AV123-20120726	7/26/2012 8:37:50 AM	82247-334	0.2654	Pass	98.6278	Pass
AV124						
IC-7107;AV124-20120614	6/15/2012 11:46:08 AM	82232-334	0.2653	Pass		
CCV-7107;AV124-20120726	7/26/2012 10:16:23 PM	82232-334	0.2661	Pass	100.282	Pass
AV125						
IC-8874;AV125-20120614	6/15/2012 11:46:45 AM	82233-334	0.2675	Pass		
CCV-8874;AV125-20120725	7/26/2012 12:43:01 AM	82233-334	0.2694	Pass	100.701	Pass
AV126						
IC-8875;AV126-20120614	6/15/2012 11:47:26 AM	82234-334	0.2760	Pass		
CCV-8875;AV126-20120726	7/26/2012 1:58:20 PM	82234-334	0.2746	Pass	99.5062	Pass
AV127						
IC-8876;AV127-20120614	6/15/2012 11:48:11 AM	82235-334	0.2775	Pass		
CCV-8876;AV127-20120725	7/26/2012 12:43:05 AM	82235-334	0.0003	Eval	0.11569	Fail
AV128						
IC-8877;AV128-20120614	6/15/2012 11:48:54 AM	82236-334	0.2685	Pass		
CCV-8877;AV128-20120726	7/26/2012 1:58:40 PM	82236-334	0.0003	Eval	0.11553	Fail
AV129						
IC-9520;AV12920120614	6/15/2012 11:49:36 AM	82237-334	0.2710	Pass		
CCV-9520;AV129-20120725	7/26/2012 12:43:08 AM	82237-334	0.2730	Pass	100.742	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV130						
IC-8879;AV130-20120614	6/15/2012 11:50:34 AM	82238-334	0.2707	Pass		
CCV-8879;AV130-20120726	7/26/2012 8:37:58 AM	82238-334	0.2711	Pass	100.151	Pass
AV131						
IC-9792;AV131-20120612	6/12/2012 10:16:29 PM	82240-334	0.2777	Pass		
CCV-9792;AV131-20120726	7/26/2012 7:43:47 PM	82240-334	0.2754	Pass	99.1770	Pass
AV132						
IC-9793;AV132-20120612	6/12/2012 10:16:32 PM	82241-334	0.2711	Pass		
CCV-9793;AV132-20120726	7/26/2012 5:35:09 PM	82241-334	0.2728	Pass	100.644	Pass
AV133						
IC-9794;AV133-20120612	6/12/2012 3:43:51 PM	82242-334	0.2627	Pass		
CCV-9794;AV133-20120726	7/26/2012 7:43:55 PM	82242-334	0.2629	Pass	100.084	Pass
AV134						
IC-9795;AV134-20120612	6/12/2012 10:16:35 PM	82243-334	0.2665	Pass		
CCV-9795;AV134-20120726	7/26/2012 7:44:04 PM	82243-334	0.2637	Pass	98.9425	Pass
AV135						
IC-9817;AV135-20120612	6/12/2012 10:16:38 PM	82244-334	0.2610	Pass		
CCV-9817;AV135-20120726	7/26/2012 7:44:16 PM	82244-334	0.2622	Pass	100.442	Pass
AV136						
IC-9884;AV136-20120612	6/12/2012 10:16:41 PM	82245-334	0.2745	Pass		
CCV-9884;AV13620120726	7/26/2012 7:44:27 PM	82245-334	0.2725	Pass	99.2766	Pass
AV137						
IC-9885;AV137-20120621	6/21/2012 2:01:56 PM	82246-334	0.2674	Pass		
CCV-9885;AV137-20120726	7/26/2012 7:44:35 PM	82246-334	0.2648	Pass	99.0375	Pass
AV138						
IC-9886;AV138-20120608	6/8/2012 8:55:45 AM	82247-334	0.2683	Pass		
CCV-9886;AV138-20120726	7/26/2012 7:44:43 PM	82247-334	0.2672	Pass	99.5864	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Monthly Backgrounds
Alpha Vision
July 2012
AV1-146

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:10:53PM 7/25/2012

Sample

Sample Name: ICB;AV60
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

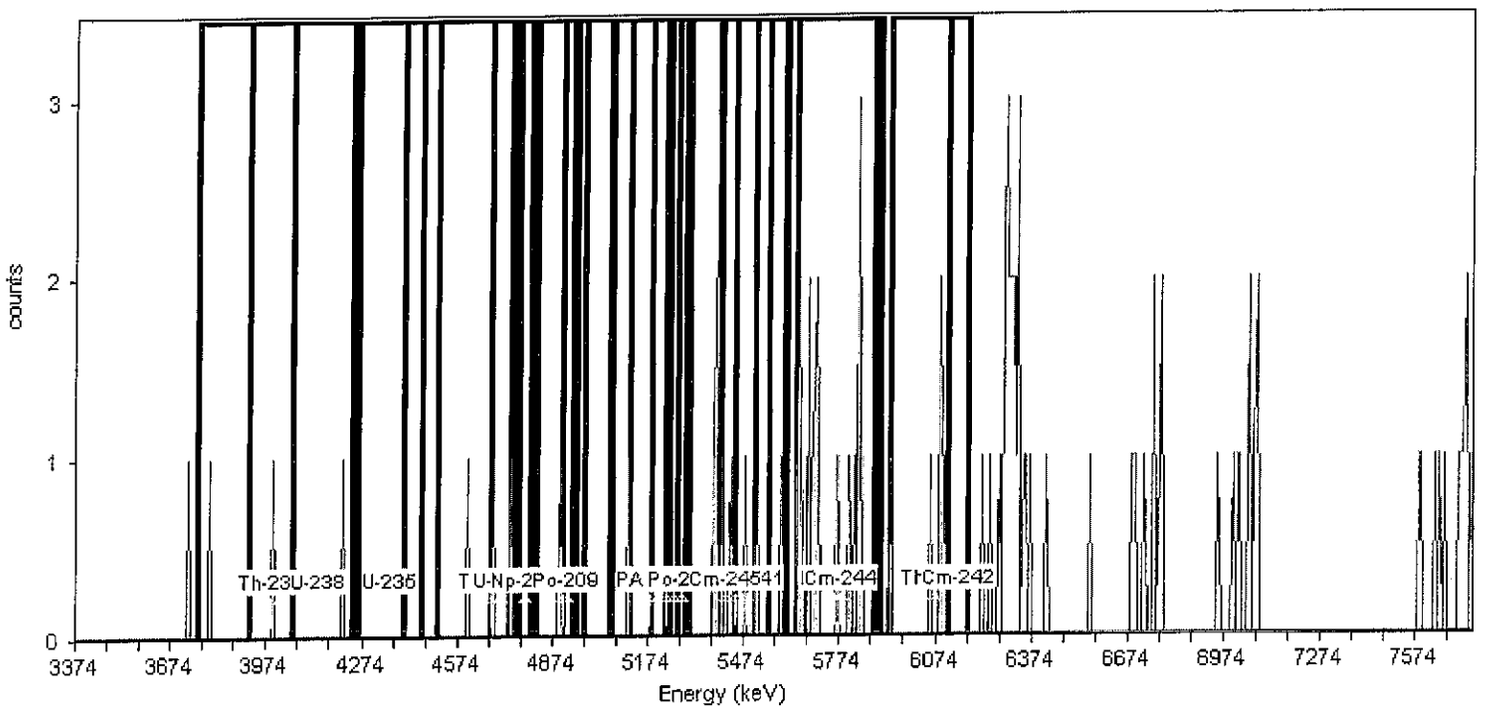
Analyst: 60040

Acquisition

Detector: AV60 , SN: 49-027117
Acquisition Start Date: 7/24/2012 9:07:18PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9817;AV60-20120610
Calibration Date: 6/10/2012 8:19:43PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.82% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 91.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	2.00	2.083E-003	1.804E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	3.00	3.125E-003	2.083E-003
U-234	4.71	4.51	4.82	3.00	3.125E-003	2.083E-003
Pu-242	4.90	4.68	4.95	3.00	3.125E-003	2.083E-003
Th-229	4.86	4.74	5.12	3.00	3.125E-003	2.083E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	1.00	1.042E-003	1.473E-003
U-232	5.25	5.06	5.40	5.00	5.208E-003	2.552E-003
Th-228	5.45	5.19	5.51	6.00	6.250E-003	2.756E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	7.00	7.292E-003	2.946E-003
Am-241	5.48	5.30	5.60	8.00	8.333E-003	3.125E-003
Cm-245	5.42	5.40	5.45	2.00	2.083E-003	1.804E-003
Pu-236	5.76	5.61	5.89	16.00	1.667E-002	4.295E-003
Cm-244	5.78	5.64	5.90	16.00	1.667E-002	4.295E-003
Th-227	6.07	5.93	6.18	6.00	6.250E-003	2.756E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:11:04PM 7/25/2012

Sample

Sample Name: ICB;AV61
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

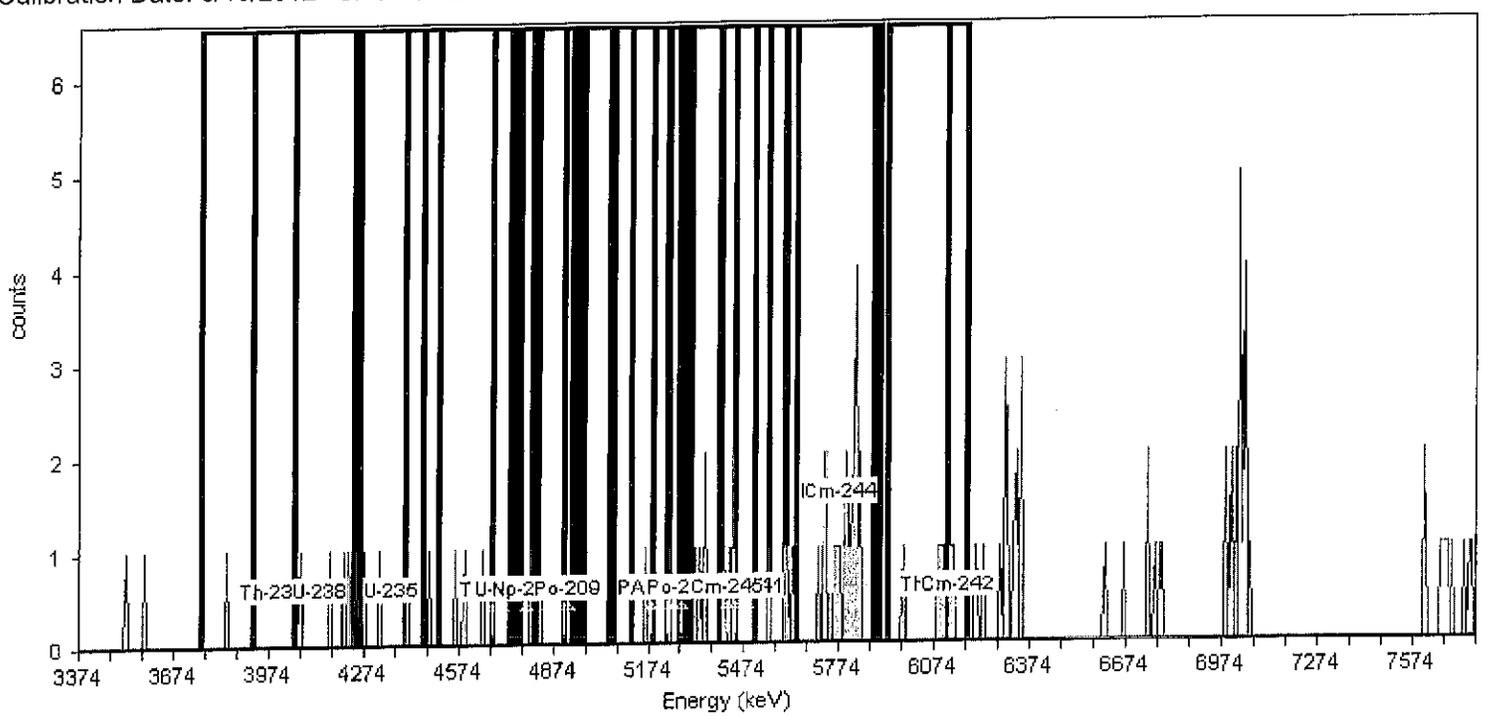
Analyst: 60040

Acquisition

Detector: AV61 , SN: 5-051JJ3
Acquisition Start Date: 7/24/2012 9:07:19PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9884;AV61-20120610
Calibration Date: 6/10/2012 8:19:46PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.92% +/- 0.39% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 106.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	4.00	4.167E-003	2.329E-003
U-235	4.36	4.26	4.46	3.00	3.125E-003	2.083E-003
Th-230	4.68	4.40	4.75	5.00	5.208E-003	2.552E-003
U-234	4.71	4.51	4.82	4.00	4.167E-003	2.329E-003
Pu-242	4.90	4.68	4.95	2.00	2.083E-003	1.804E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	1.00	1.042E-003	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	2.00	2.083E-003	1.804E-003
U-232	5.25	5.06	5.40	6.00	6.250E-003	2.756E-003
Th-228	5.45	5.19	5.51	9.00	9.375E-003	3.294E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	9.00	9.375E-003	3.294E-003
Am-241	5.48	5.30	5.60	10.00	1.042E-002	3.455E-003
Cm-245	5.42	5.40	5.45	4.00	4.167E-003	2.329E-003
Pu-236	5.76	5.61	5.89	22.00	2.292E-002	4.996E-003
Cm-244	5.78	5.64	5.90	20.00	2.083E-002	4.774E-003
Th-227	6.07	5.93	6.18	6.00	6.250E-003	2.756E-003
Cm-242	6.15	6.12	6.18	2.00	2.083E-003	1.804E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:11:17PM 7/25/2012

Sample

Sample Name: ICB;AV62
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

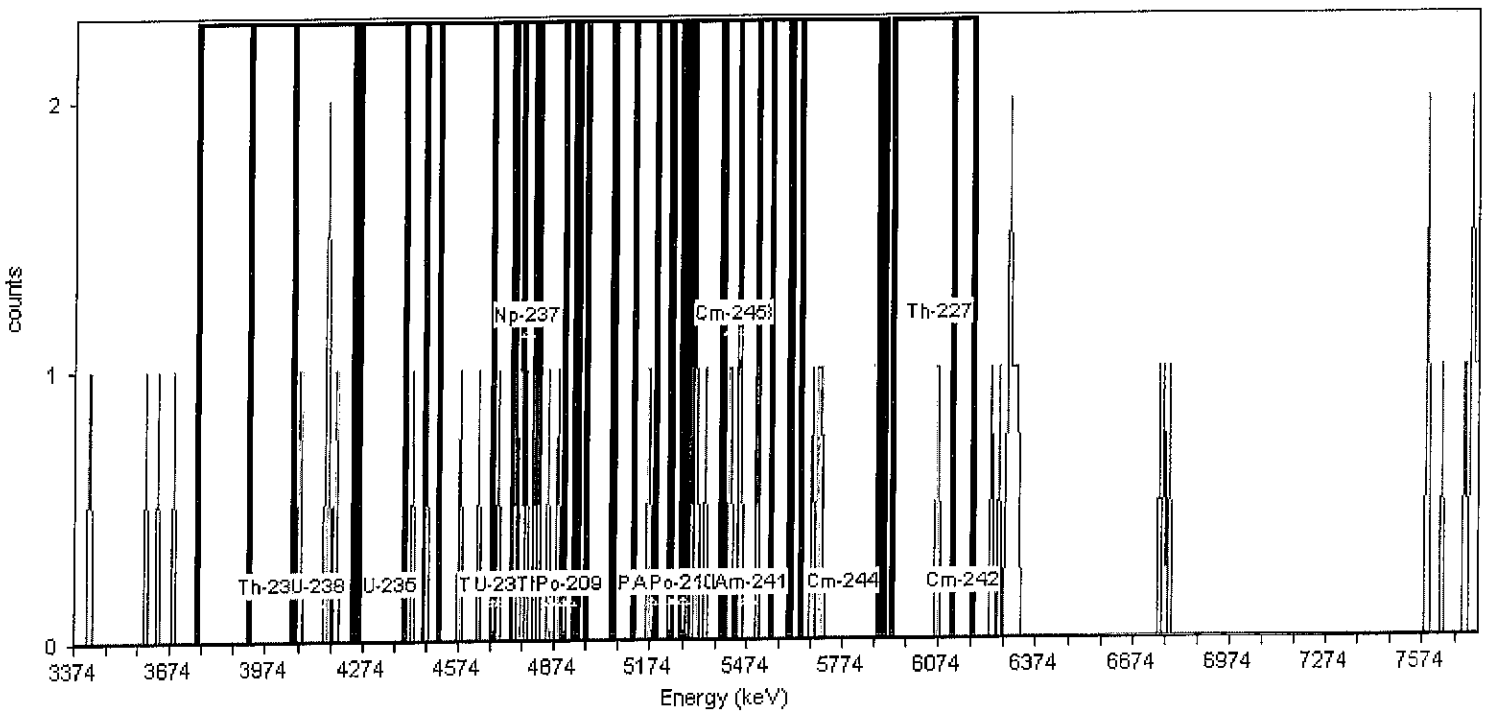
Analyst: 60040

Acquisition

Detector: AV62 , SN: 49-115DD4
Acquisition Start Date: 7/24/2012 9:07:20PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9885;AV62-20120610
Calibration Date: 6/10/2012 8:19:49PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.42% +/- 0.39% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 62.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	5.00	5.208E-003	2.552E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	6.00	6.250E-003	2.756E-003
U-234	4.71	4.51	4.82	9.00	9.375E-003	3.294E-003
Pu-242	4.90	4.68	4.95	9.00	9.375E-003	3.294E-003
Th-229	4.86	4.74	5.12	8.00	8.333E-003	3.125E-003
Np-237	4.78	4.77	4.81	3.00	3.125E-003	2.083E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	3.00	3.125E-003	2.083E-003
U-232	5.25	5.06	5.40	6.00	6.250E-003	2.756E-003
Th-228	5.45	5.19	5.51	9.00	9.375E-003	3.294E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	9.00	9.375E-003	3.294E-003
Am-241	5.48	5.30	5.60	9.00	9.375E-003	3.294E-003
Cm-245	5.42	5.40	5.45	3.00	3.125E-003	2.083E-003
Pu-236	5.76	5.61	5.89	4.00	4.167E-003	2.329E-003
Cm-244	5.78	5.64	5.90	4.00	4.167E-003	2.329E-003
Th-227	6.07	5.93	6.18	2.00	2.083E-003	1.804E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:11:34PM 7/25/2012

Sample

Sample Name: ICB;AV63
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

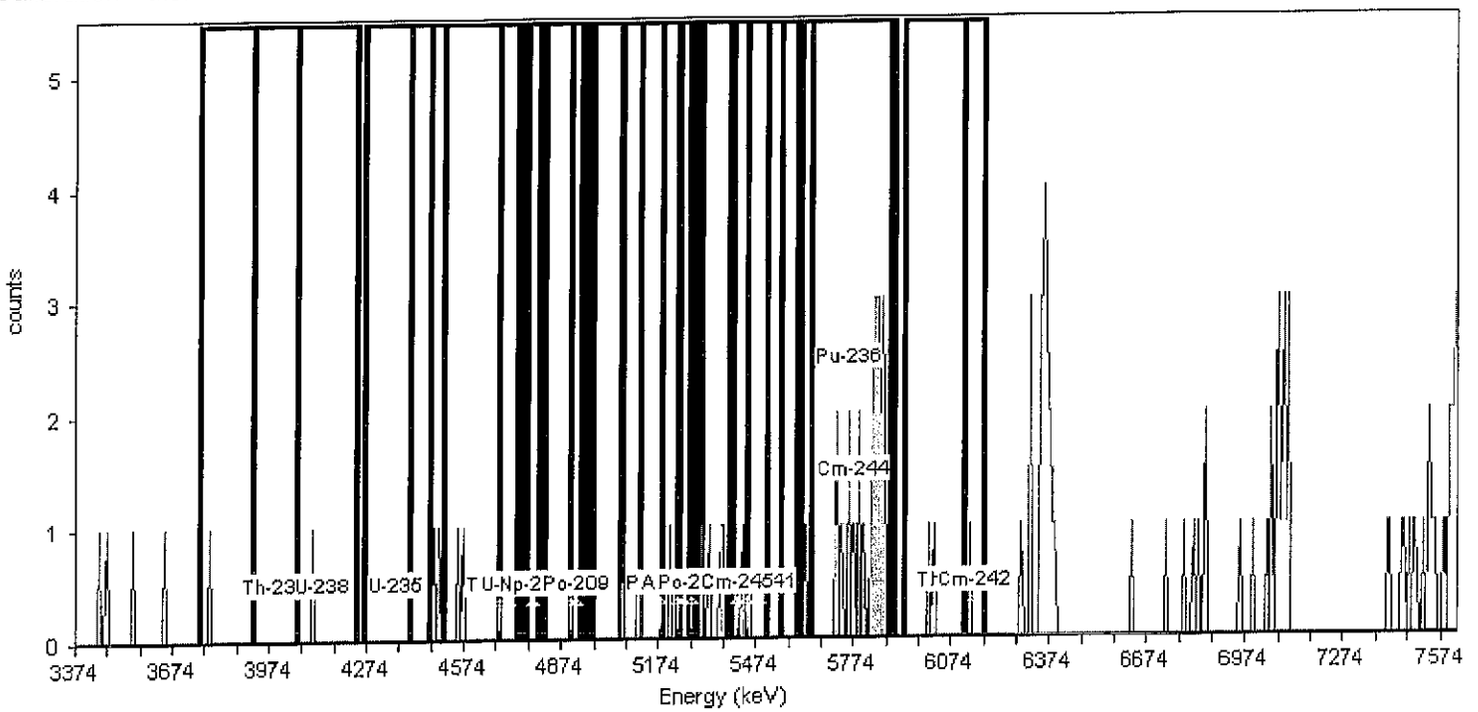
Analyst: 60040

Acquisition

Detector: AV63 , SN: 47-029ff2
Acquisition Start Date: 7/24/2012 9:07:21PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9886;AV63-20120610
Calibration Date: 6/10/2012 8:19:57PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.07% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 117.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	4.00	4.167E-003	2.329E-003
U-234	4.71	4.51	4.82	2.00	2.083E-003	1.804E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	3.00	3.125E-003	2.083E-003
Am-243	5.23	5.05	5.31	4.00	4.167E-003	2.329E-003
U-232	5.25	5.06	5.40	7.00	7.292E-003	2.946E-003
Th-228	5.45	5.19	5.51	8.00	8.333E-003	3.125E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	7.00	7.292E-003	2.946E-003
Am-241	5.48	5.30	5.60	7.00	7.292E-003	2.946E-003
Cm-245	5.42	5.40	5.45	2.00	2.083E-003	1.804E-003
Pu-236	5.76	5.61	5.89	27.00	2.813E-002	5.512E-003
Cm-244	5.78	5.64	5.90	26.00	2.708E-002	5.413E-003
Th-227	6.07	5.93	6.18	3.00	3.125E-003	2.083E-003
Cm-242	6.15	6.12	6.18	1.00	1.042E-003	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:11:40PM 7/25/2012

Sample

Sample Name: ICB;AV64
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

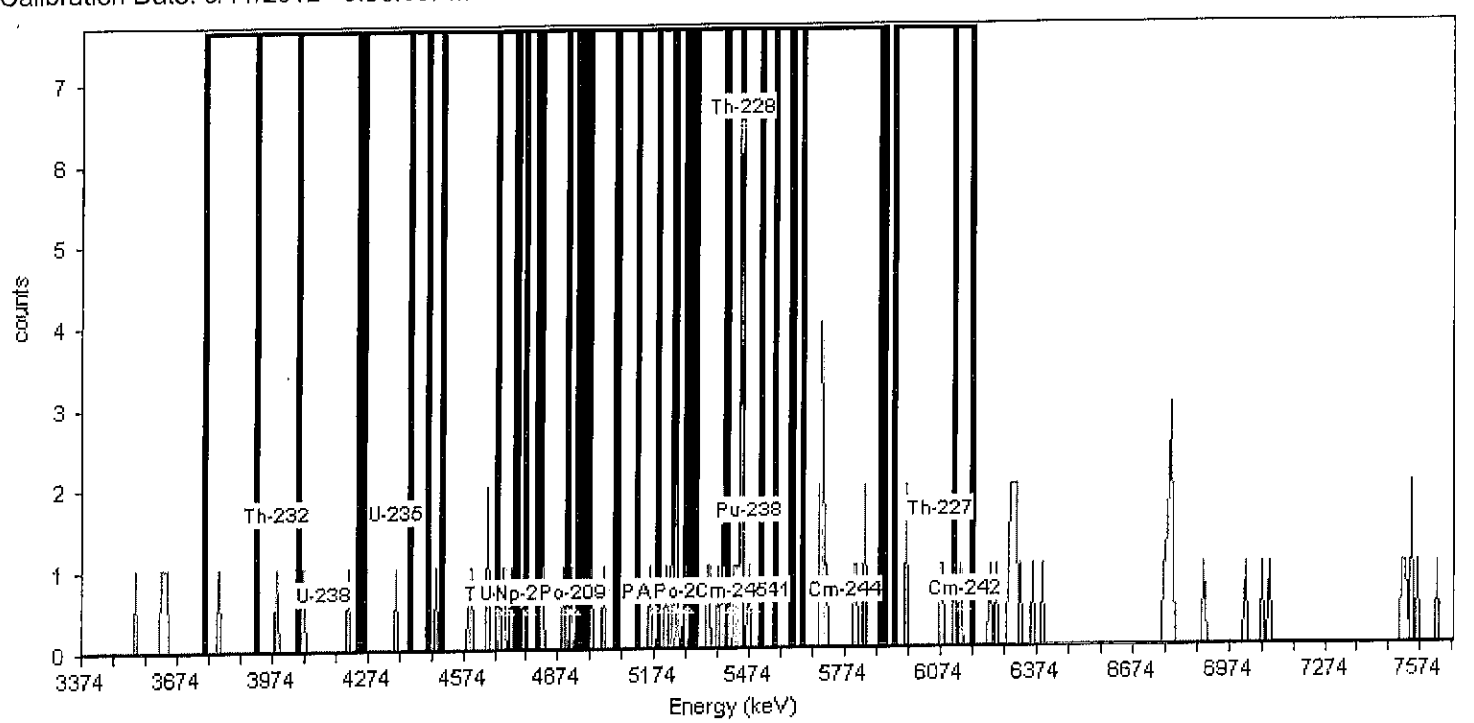
Analyst: 60040

Acquisition

Detector: AV64 , SN: 47-029ee4
Acquisition Start Date: 7/24/2012 9:07:22PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-7107;AV64-20120610
Calibration Date: 6/11/2012 3:30:09PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 29.35% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 92.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	3.00	3.125E-003	2.083E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	8.00	8.333E-003	3.125E-003
U-234	4.71	4.51	4.82	9.00	9.375E-003	3.294E-003
Pu-242	4.90	4.68	4.95	7.00	7.292E-003	2.946E-003
Th-229	4.86	4.74	5.12	6.00	6.250E-003	2.756E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	1.00	1.042E-003	1.473E-003
Pu-239	5.18	4.97	5.24	7.00	7.292E-003	2.946E-003
Am-243	5.23	5.05	5.31	7.00	7.292E-003	2.946E-003
U-232	5.25	5.06	5.40	11.00	1.146E-002	3.608E-003
Th-228	5.45	5.19	5.51	21.00	2.187E-002	4.886E-003
Po-210	5.28	5.23	5.29	4.00	4.167E-003	2.329E-003
Pu-238	5.47	5.27	5.55	16.00	1.667E-002	4.295E-003
Am-241	5.48	5.30	5.60	15.00	1.563E-002	4.167E-003
Cm-245	5.42	5.40	5.45	10.00	1.042E-002	3.455E-003
Pu-236	5.76	5.61	5.89	10.00	1.042E-002	3.455E-003
Cm-244	5.78	5.64	5.90	10.00	1.042E-002	3.455E-003
Th-227	6.07	5.93	6.18	6.00	6.250E-003	2.756E-003
Cm-242	6.15	6.12	6.18	2.00	2.083E-003	1.804E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:11:52PM 7/25/2012

Sample

Sample Name: ICB;AV65
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

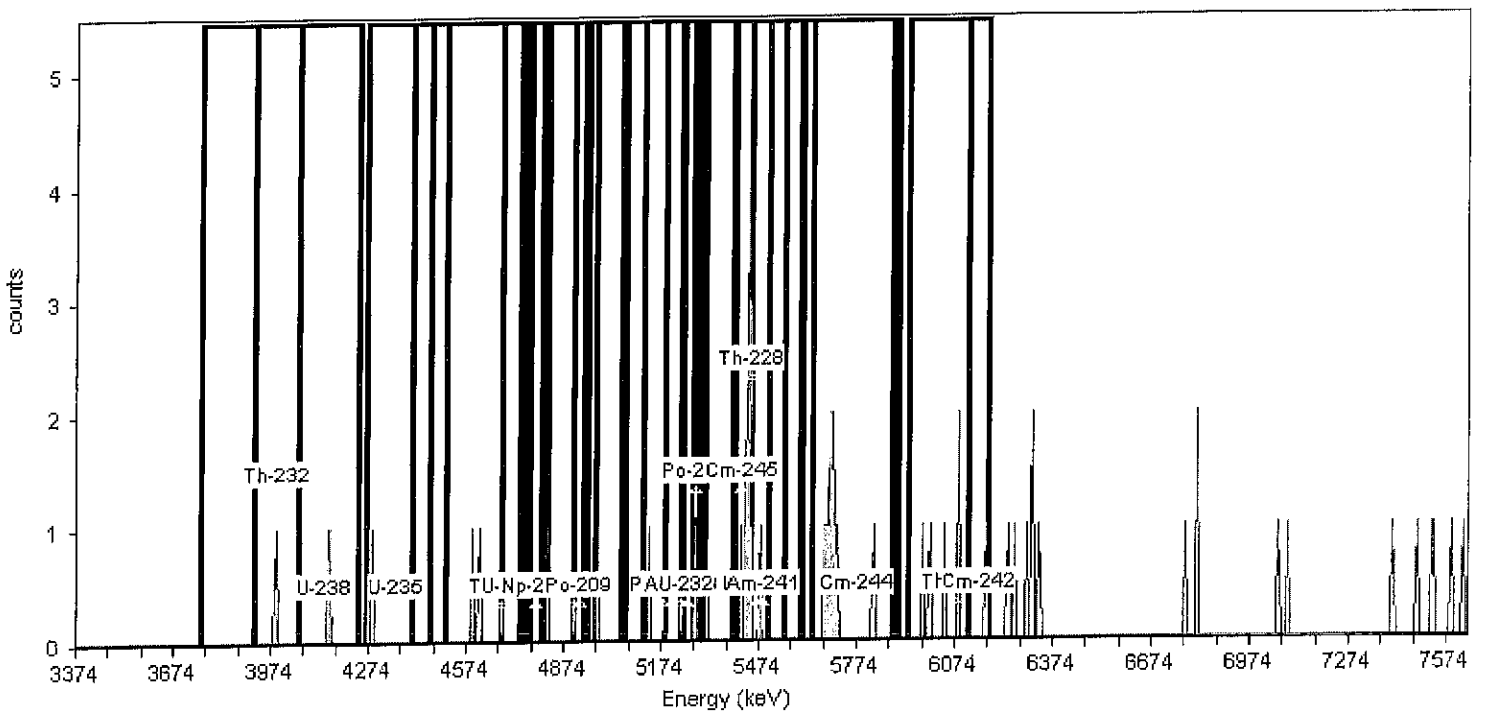
Analyst: 60040

Acquisition

Detector: AV65 , SN: 44-049JJ1
Acquisition Start Date: 7/24/2012 9:07:24PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-8874;AV65-20120610
Calibration Date: 6/11/2012 3:30:33PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.59% +/- 0.39% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 52.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	2.00	2.083E-003	1.804E-003
U-235	4.36	4.26	4.46	2.00	2.083E-003	1.804E-003
Th-230	4.68	4.40	4.75	2.00	2.083E-003	1.804E-003
U-234	4.71	4.51	4.82	3.00	3.125E-003	2.083E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	2.00	2.083E-003	1.804E-003
U-232	5.25	5.06	5.40	3.00	3.125E-003	2.083E-003
Th-228	5.45	5.19	5.51	11.00	1.146E-002	3.608E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	11.00	1.146E-002	3.608E-003
Am-241	5.48	5.30	5.60	10.00	1.042E-002	3.455E-003
Cm-245	5.42	5.40	5.45	8.00	8.333E-003	3.125E-003
Pu-236	5.76	5.61	5.89	9.00	9.375E-003	3.294E-003
Cm-244	5.78	5.64	5.90	9.00	9.375E-003	3.294E-003
Th-227	6.07	5.93	6.18	6.00	6.250E-003	2.756E-003
Cm-242	6.15	6.12	6.18	1.00	1.042E-003	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:12:15PM 7/25/2012

Sample

Sample Name: ICB;AV66
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

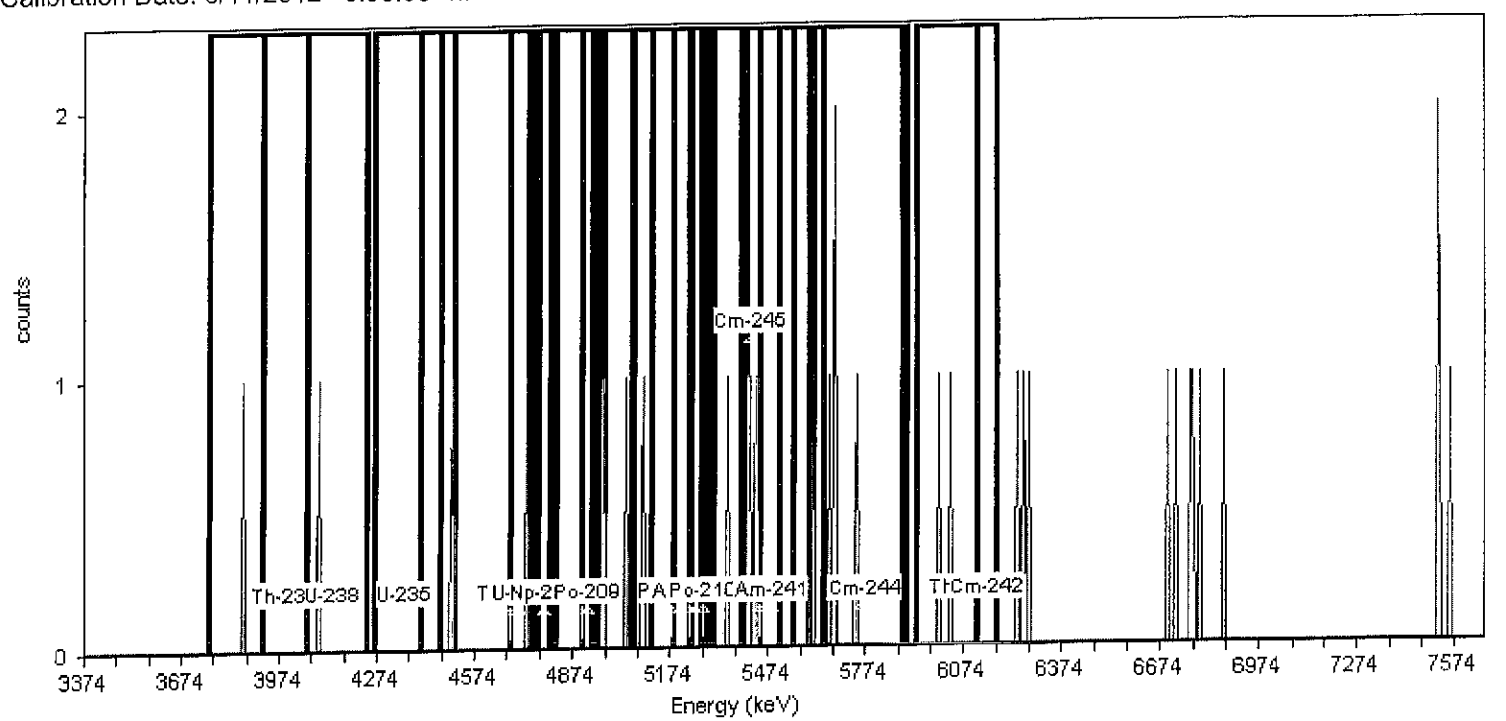
Analyst: 60040

Acquisition

Detector: AV66 , SN: 48-158EE2
Acquisition Start Date: 7/24/2012 9:07:26PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-8875;AV66-20120610
Calibration Date: 6/11/2012 3:30:58PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 28.46% +/- 0.39% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 33.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	2.00	2.083E-003	1.804E-003
U-234	4.71	4.51	4.82	1.00	1.042E-003	1.473E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	4.00	4.167E-003	2.329E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	3.00	3.125E-003	2.083E-003
Am-243	5.23	5.05	5.31	1.00	1.042E-003	1.473E-003
U-232	5.25	5.06	5.40	2.00	2.083E-003	1.804E-003
Th-228	5.45	5.19	5.51	5.00	5.208E-003	2.552E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	5.00	5.208E-003	2.552E-003
Am-241	5.48	5.30	5.60	5.00	5.208E-003	2.552E-003
Cm-245	5.42	5.40	5.45	4.00	4.167E-003	2.329E-003
Pu-236	5.76	5.61	5.89	5.00	5.208E-003	2.552E-003
Cm-244	5.78	5.64	5.90	4.00	4.167E-003	2.329E-003
Th-227	6.07	5.93	6.18	2.00	2.083E-003	1.804E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:12:09PM 7/25/2012

Sample

Sample Name: ICB;AV67
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

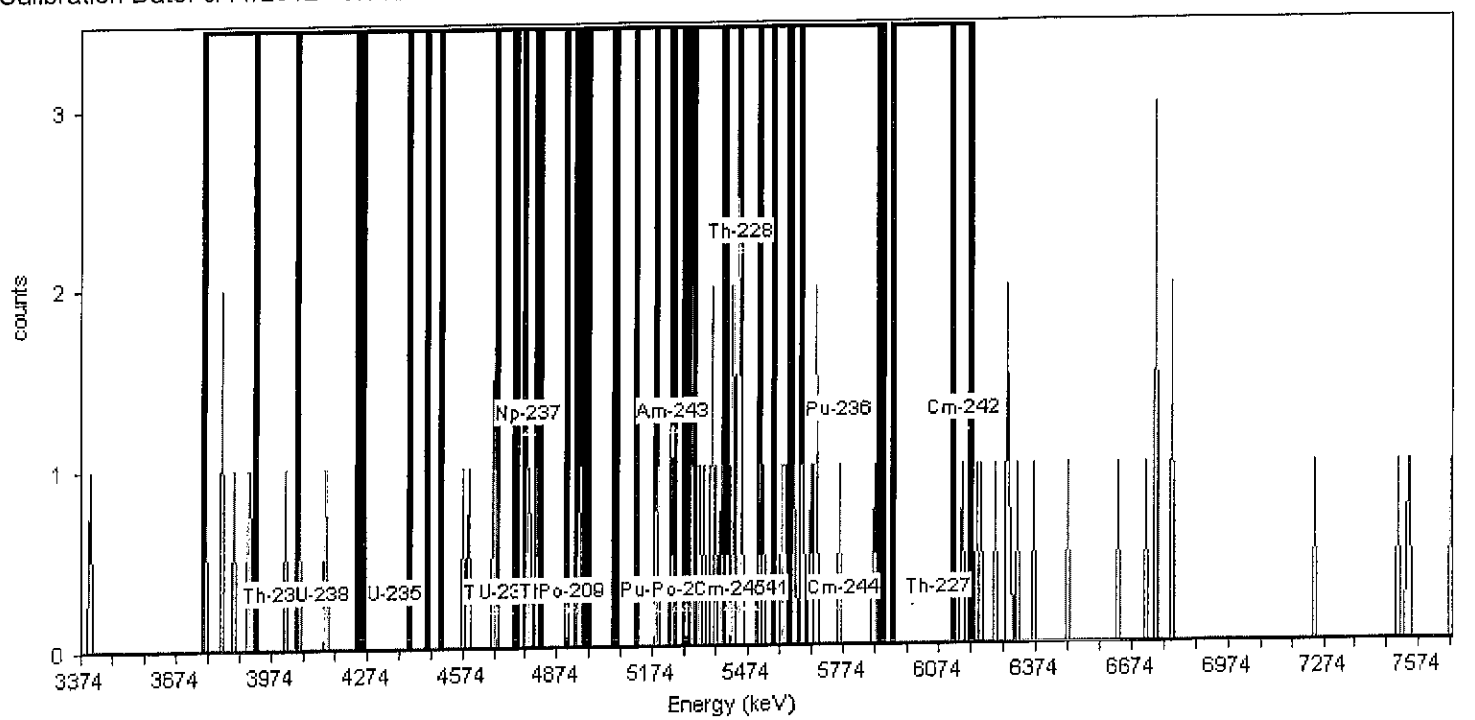
Analyst: 60040

Acquisition

Detector: AV67 , SN: 48-046II7
Acquisition Start Date: 7/24/2012 9:07:27PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-8876;AV67-20120610
Calibration Date: 6/11/2012 3:31:27PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 29.53% +/- 0.33% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 73.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	7.00	7.292E-003	2.946E-003
U-238	4.14	3.92	4.24	3.00	3.125E-003	2.083E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	4.00	4.167E-003	2.329E-003
U-234	4.71	4.51	4.82	7.00	7.292E-003	2.946E-003
Pu-242	4.90	4.68	4.95	4.00	4.167E-003	2.329E-003
Th-229	4.86	4.74	5.12	4.00	4.167E-003	2.329E-003
Np-237	4.78	4.77	4.81	3.00	3.125E-003	2.083E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	4.00	4.167E-003	2.329E-003
U-232	5.25	5.06	5.40	11.00	1.146E-002	3.608E-003
Th-228	5.45	5.19	5.51	21.00	2.187E-002	4.886E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	20.00	2.083E-002	4.774E-003
Am-241	5.48	5.30	5.60	22.00	2.292E-002	4.996E-003
Cm-245	5.42	5.40	5.45	8.00	8.333E-003	3.125E-003
Pu-236	5.76	5.61	5.89	9.00	9.375E-003	3.294E-003
Cm-244	5.78	5.64	5.90	8.00	8.333E-003	3.125E-003
Th-227	6.07	5.93	6.18	1.00	1.042E-003	1.473E-003
Cm-242	6.15	6.12	6.18	1.00	1.042E-003	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:12:20PM 7/25/2012

Sample

Sample Name: ICB;AV68
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

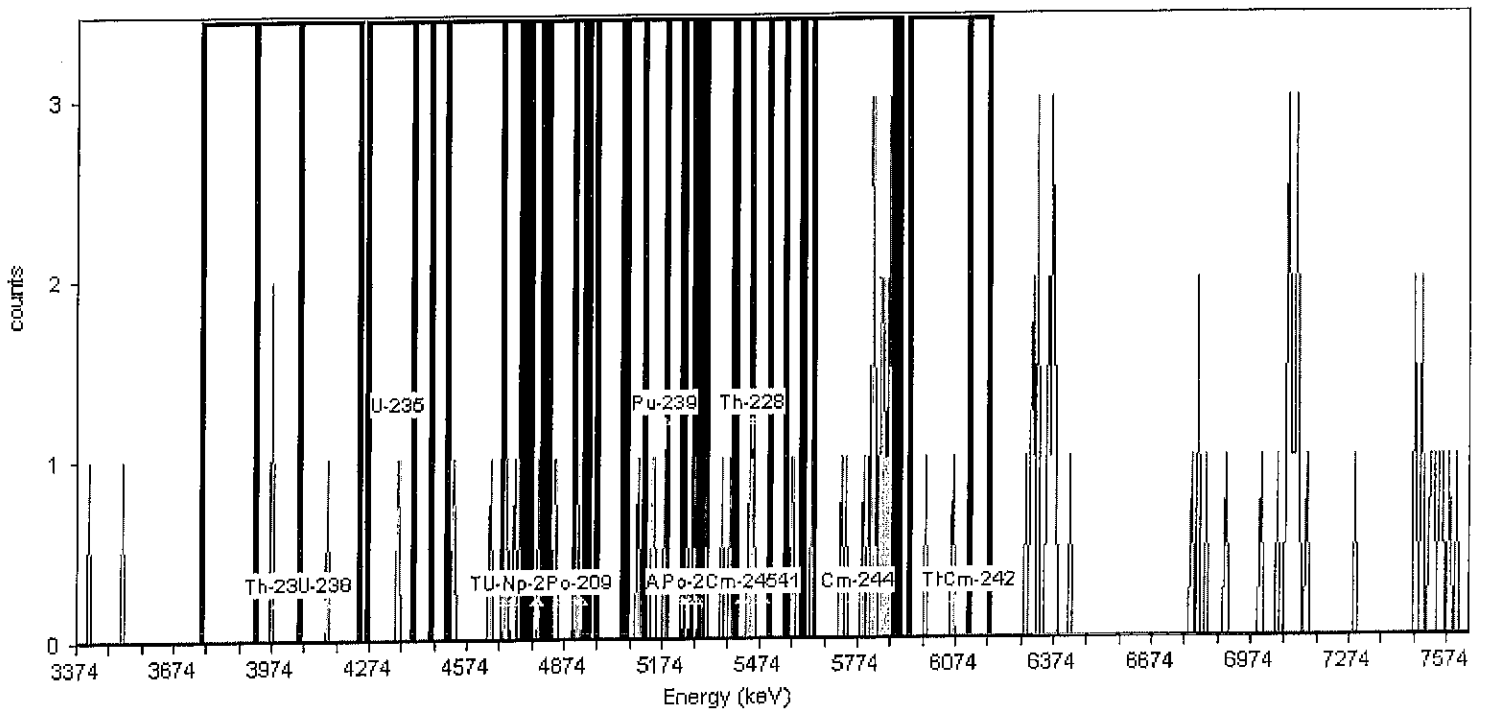
Analyst: 60040

Acquisition

Detector: AV68 , SN: 48-45884
Acquisition Start Date: 7/24/2012 9:07:30PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-8877;AV68-20120610
Calibration Date: 6/11/2012 3:31:53PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.40% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 97.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	3.00	3.125E-003	2.083E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	6.00	6.250E-003	2.756E-003
U-234	4.71	4.51	4.82	7.00	7.292E-003	2.946E-003
Pu-242	4.90	4.68	4.95	7.00	7.292E-003	2.946E-003
Th-229	4.86	4.74	5.12	4.00	4.167E-003	2.329E-003
Np-237	4.78	4.77	4.81	1.00	1.042E-003	1.473E-003
Po-209	4.92	4.90	4.93	1.00	1.042E-003	1.473E-003
Pu-239	5.18	4.97	5.24	4.00	4.167E-003	2.329E-003
Am-243	5.23	5.05	5.31	7.00	7.292E-003	2.946E-003
U-232	5.25	5.06	5.40	9.00	9.375E-003	3.294E-003
Th-228	5.45	5.19	5.51	8.00	8.333E-003	3.125E-003
Po-210	5.28	5.23	5.29	2.00	2.083E-003	1.804E-003
Pu-238	5.47	5.27	5.55	7.00	7.292E-003	2.946E-003
Am-241	5.48	5.30	5.60	7.00	7.292E-003	2.946E-003
Cm-245	5.42	5.40	5.45	2.00	2.083E-003	1.804E-003
Pu-236	5.76	5.61	5.89	18.00	1.875E-002	4.541E-003
Cm-244	5.78	5.64	5.90	17.00	1.771E-002	4.419E-003
Th-227	6.07	5.93	6.18	2.00	2.083E-003	1.804E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:12:26PM 7/25/2012

Sample

Sample Name: ICB;AV69
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

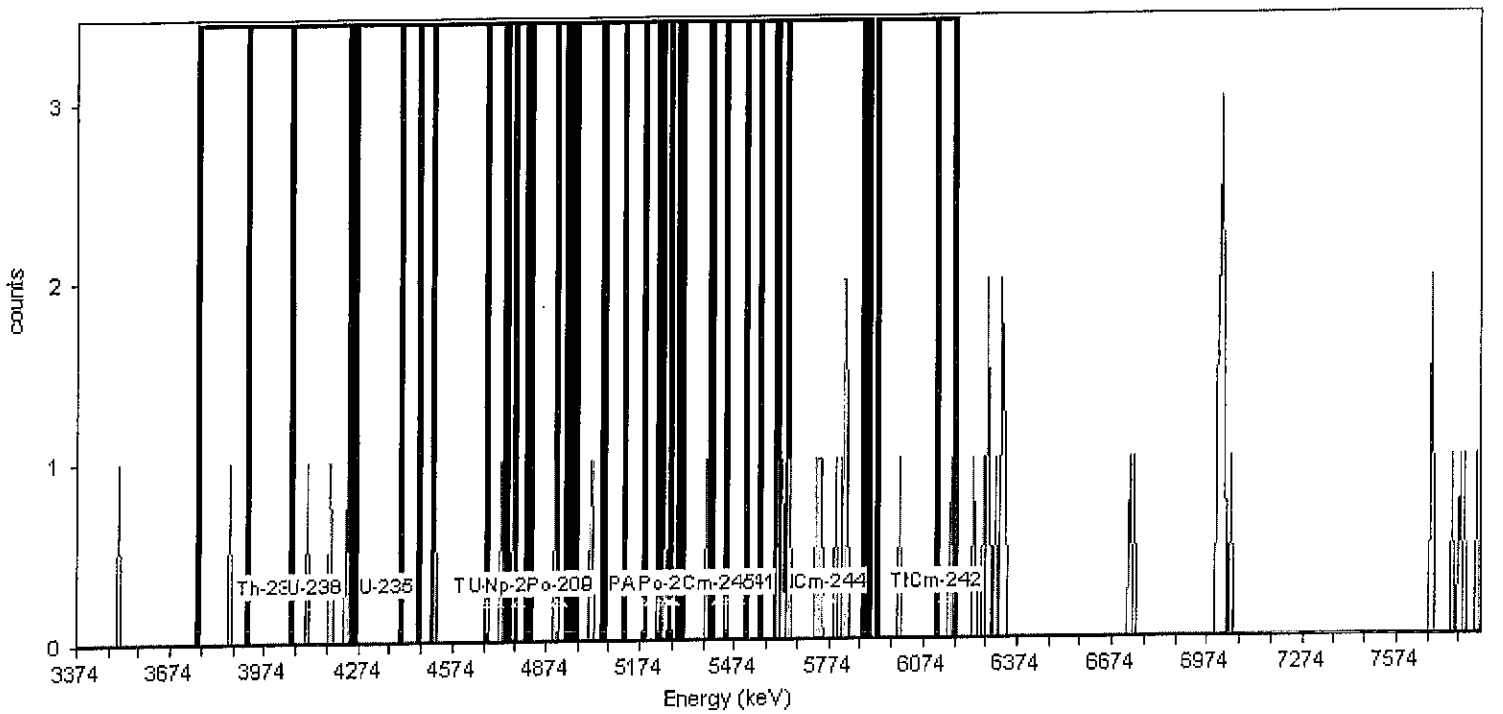
Analyst: 60040

Acquisition

Detector: AV69 , SN: 49-155DD5
Acquisition Start Date: 7/24/2012 9:07:31PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: ICV-8877;AV69-20120611a
Calibration Date: 6/11/2012 4:44:35PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.62% +/- 0.44% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 54.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	3.00	3.125E-003	2.083E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	2.00	2.083E-003	1.804E-003
U-234	4.71	4.51	4.82	3.00	3.125E-003	2.083E-003
Pu-242	4.90	4.68	4.95	3.00	3.125E-003	2.083E-003
Th-229	4.86	4.74	5.12	3.00	3.125E-003	2.083E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	1.00	1.042E-003	1.473E-003
U-232	5.25	5.06	5.40	2.00	2.083E-003	1.804E-003
Th-228	5.45	5.19	5.51	2.00	2.083E-003	1.804E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	1.00	1.042E-003	1.473E-003
Am-241	5.48	5.30	5.60	1.00	1.042E-003	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	14.00	1.458E-002	4.034E-003
Cm-244	5.78	5.64	5.90	12.00	1.250E-002	3.756E-003
Th-227	6.07	5.93	6.18	3.00	3.125E-003	2.083E-003
Cm-242	6.15	6.12	6.18	2.00	2.083E-003	1.804E-003

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Monthly CCV
Alpha Vision
July 2012
AV1-146

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV1						
IC-7107;AV1-20120607	6/7/2012 3:02:16 PM	82232-334	0.2756	Pass		
CCV-7107;AV1-20120724	7/24/2012 1:37:50 PM	82232-334	0.2749	Pass	99.7401	Pass
AV2						
IC-8874;AV2-20120607	6/7/2012 3:02:23 PM	82233-334	0.2693	Pass		
CCV-8874;AV2-20120724	7/24/2012 1:38:06 PM	82233-334	0.2737	Pass	101.617	Pass
AV3						
IC-8875;AV3-20120607	6/7/2012 3:02:28 PM	82234-334	0.2857	Pass		
CCV-8875;AV3-20120724	7/24/2012 1:38:18 PM	82234-334	0.2813	Pass	98.4574	Pass
AV4						
IC-8876;AV4-20120607	6/7/2012 3:02:32 PM	82235-334	0.2793	Pass		
CCV-8876;AV4-20120724	7/24/2012 1:38:33 PM	82235-334	0.2759	Pass	98.7801	Pass
AV6						
IC-9520;AV6-20120607a	6/7/2012 3:56:30 PM	82237-334	0.2792	Pass		
CCV-9520;AV6-20120724	7/24/2012 1:38:57 PM	82237-334	0.2815	Pass	100.837	Pass
AV7						
IC-8879;AV7-20120607	6/7/2012 4:03:51 PM	82238-334	0.2731	Pass		
CCV-8879;AV7-20120724	7/24/2012 1:39:10 PM	82238-334	0.2696	Pass	98.7133	Pass
AV8						
IC-9792;AV8-20120607	6/7/2012 4:06:21 PM	82240-334	0.2787	Pass		
CCV-9792;AV8-20120724	7/24/2012 1:39:22 PM	82240-334	0.2791	Pass	100.131	Pass
AV9						
IC-9793;AV9-20120607	6/7/2012 4:06:26 PM	82241-334	0.2781	Pass		
CCV-9793;AV9-20120724	7/24/2012 1:39:34 PM	82241-334	0.2797	Pass	100.590	Pass
AV10						
IC-9794;AV10-20120621	6/21/2012 2:01:39 PM	82242-334	0.2725	Pass		
AV11						
IC-9795;AV11-20120607	6/7/2012 7:50:12 PM	82243-334	0.2751	Pass		
CCV-9795;AV11-20120724	7/24/2012 1:40:24 PM	82243-334	0.2762	Pass	100.416	Pass
AV12						
IC-9817;AV12-20120607	6/7/2012 7:50:16 PM	82244-334	0.2699	Pass		
CCV-9817;AV12-20120724	7/24/2012 1:40:35 PM	82244-334	0.2659	Pass	98.5073	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV13						
IC-9884;AV13-20120607	6/7/2012 7:50:19 PM	82245-334	0.2758	Pass		
CCV-9884;AV13-20120724	7/24/2012 1:40:46 PM	82245-334	0.2906	Pass	105.355	Fail
CCV-9884;AV13-20120724a	7/24/2012 5:02:56 PM	82245-334	0.2748	Pass	99.6538	Pass
CCV-9884;AV13-20120725	7/25/2012 11:44:29 AM	82245-334	0.2727	Pass	98.8754	Pass
AV14						
IC-9885;AV14-20120607	6/7/2012 7:50:22 PM	82246-334	0.2724	Pass		
CCV-9885;AV14-20120724	7/24/2012 1:41:00 PM	82246-334	0.2691	Pass	98.7814	Pass
AV15						
IC-9886;AV15-20120607	6/7/2012 7:50:24 PM	82247-334	0.2743	Pass		
CCV-9886;AV15-20120724	7/24/2012 1:41:10 PM	82247-334	0.2744	Pass	100.039	Pass
AV16						
IC-7107;AV16-20120607a	6/8/2012 12:12:55 AM	82232-334	0.2798	Pass		
CCV-7107;AV16-20120724	7/24/2012 5:03:06 PM	82232-334	0.2799	Pass	100.019	Pass
AV17						
IC-8874;AV17-20120607	6/8/2012 12:13:37 AM	82233-334	0.2631	Pass		
CCV-8874;AV17-20120724	7/24/2012 5:03:21 PM	82233-334	0.2669	Pass	101.451	Pass
AV18						
IC-8875;AV18-20120607	6/8/2012 12:13:58 AM	82234-334	0.2748	Pass		
CCV-8875;AV18-20120724	7/24/2012 5:05:40 PM	82234-334	0.2730	Pass	99.3381	Pass
AV19						
IC-8876;AV19-20120607	6/8/2012 12:14:05 AM	82235-334	0.2694	Pass		
CCV-8876;AV19-20120724	7/24/2012 5:03:44 PM	82235-334	0.2681	Pass	99.5055	Pass
AV20						
IC-8877;AV20-20120607	6/7/2012 7:50:28 PM	82236-334	0.2703	Pass		
CCV-8877;AV20-20120724	7/24/2012 1:38:45 PM	82236-334	0.2677	Pass	99.0551	Pass
AV21						
IC-9520;AV21-20120607	6/8/2012 12:14:09 AM	82237-334	0.2708	Pass		
CCV-9520;AV21-20120724	7/24/2012 5:03:53 PM	82237-334	0.2734	Pass	100.966	Pass
AV22						
IC-8879;AV22-20120607	6/8/2012 12:14:14 AM	82238-334	0.2679	Pass		
CCV-8879;AV22-20120724	7/24/2012 5:04:03 PM	82238-334	0.2639	Pass	98.5154	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV23						
IC-9792;AV23-20120607	6/8/2012 12:14:18 AM	82240-334	0.2673	Pass		
CCV-9792;AV23-20120724	7/24/2012 5:04:14 PM	82240-334	0.2688	Pass	100.552	Pass
AV24						
IC-9793;AV24-20120607	6/8/2012 12:14:21 AM	82241-334	0.2734	Pass		
CCV-9793;AV24-20120724	7/24/2012 5:04:24 PM	82241-334	0.2766	Pass	101.156	Pass
AV43						
IC-9794;AV43-20120607	6/7/2012 7:50:31 PM	82242-334	0.2699	Pass		
CCV-9794;AV43-20120725	7/25/2012 10:28:07 PM	82242-334	0.2686	Pass	99.5158	Pass
AV44						
IC-9795;AV44-20120610	6/11/2012 3:27:57 PM	82243-334	0.2664	Pass		
CCV-9795;AV44-20120725	7/25/2012 10:28:12 PM	82243-334	0.2682	Pass	100.672	Pass
AV45						
IC-9817;AV45-20120610	6/11/2012 3:28:22 PM	82244-334	0.2704	Pass		
CCV-9817;AV45-20120725	7/25/2012 10:28:16 PM	82244-334	0.0001	Eval	5.53444	Fail
AV46						
IC-9884;AV46-20120610	6/11/2012 3:28:47 PM	82245-334	0.2849	Pass		
CCV-9884;AV46-20120725	7/25/2012 10:28:19 PM	82245-334	0.2804	Pass	98.4164	Pass
AV47						
IC-9885;AV47-20120611a	6/12/2012 1:04:12 AM	82246-334	0.2678	Pass		
AV48						
IC-9886;AV48-20120610	6/11/2012 3:29:40 PM	82247-334	0.2764	Pass		
CCV-9886;AV48-20120725	7/25/2012 10:28:31 PM	82247-334	0.0004	Eval	0.13021	Fail
AV49						
IC-7107;AV49-20120610	6/10/2012 8:17:41 PM	82232-334	0.2927	Pass		
CCV-7107;AV49-20120725	7/25/2012 10:28:34 PM	82232-334	0.2909	Pass	99.3834	Pass
AV50						
IC-8874;AV50-20120610	6/10/2012 8:17:58 PM	82233-334	0.2754	Pass		
CCV-8874;AV50-20120726	7/26/2012 1:58:10 PM	82233-334	0.2729	Pass	99.0921	Pass
AV51						
IC-8875;AV51-20120610	6/10/2012 8:18:12 PM	82234-334	0.2819	Pass		
CCV-8875;AV51-20120725	7/25/2012 10:28:38 PM	82234-334	0.2814	Pass	99.8447	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV52						
IC-8876;AV52-20120610	6/10/2012 8:18:26 PM	82235-334	0.2911	Pass		
CCV-8876;AV52-20120726	7/26/2012 1:58:30 PM	82235-334	0.2925	Pass	100.496	Pass
AV53						
IC-8877;AV53-20120610	6/10/2012 8:18:38 PM	82236-334	0.2773	Pass		
CCV-8877;AV53-20120725	7/25/2012 10:28:41 PM	82236-334	0.2775	Pass	100.055	Pass
AV54						
IC-9520;AV54-20120610	6/10/2012 8:18:52 PM	82237-334	0.2798	Pass		
CCV-9520;AV54-20120726	7/26/2012 1:58:49 PM	82237-334	0.2760	Pass	98.6444	Pass
AV55						
IC-8879;AV55-20120610	6/10/2012 8:19:03 PM	82238-334	0.2720	Pass		
CCV-8879;AV55-20120725	7/25/2012 10:28:45 PM	82238-334	0.2697	Pass	99.1518	Pass
AV56						
IC-9792;AV56-20120610	6/10/2012 8:19:16 PM	82240-334	0.2709	Pass		
CCV-9792;AV56-20120725	7/25/2012 10:28:48 PM	82240-334	0.0003	Eval	0.11605	Fail
AV57						
IC-9793;AV57-20120610	6/10/2012 8:19:29 PM	82241-334	0.2764	Pass		
CCV-9793;AV57-20120725	7/25/2012 10:28:52 PM	82241-334	0.2763	Pass	99.9520	Pass
AV58						
IC-9794;AV58-20120610	6/10/2012 8:19:36 PM	82242-334	0.2550	Pass		
AV59						
IC-9795;AV59-20120610	6/10/2012 8:19:39 PM	82243-334	0.2753	Pass		
AV60						
IC-9817;AV60-20120610	6/10/2012 8:19:43 PM	82244-334	0.2682	Pass		
CCV-9817;AV60-20120725a	7/26/2012 12:42:30 AM	82244-334	0.2705	Pass	100.836	Pass
AV61						
IC-9884;AV61-20120610	6/10/2012 8:19:46 PM	82245-334	0.2792	Pass		
CCV-9884;AV61-20120725	7/26/2012 12:42:24 AM	82245-334	0.2785	Pass	99.7356	Pass
AV62						
IC-9885;AV62-20120610	6/10/2012 8:19:49 PM	82246-334	0.2742	Pass		
CCV-9885;AV62-20120725	7/26/2012 12:42:33 AM	82246-334	0.2738	Pass	99.8594	Pass
AV63						
IC-9886;AV63-20120610	6/10/2012 8:19:57 PM	82247-334	0.2707	Pass		
CCV-9886;AV63-20120725	7/26/2012 12:42:36 AM	82247-334	0.2716	Pass	100.323	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV64						
IC-7107;AV64-20120610	6/11/2012 3:30:09 PM	82232-334	0.2935	Pass		
CCV-7107;AV64-20120726	7/26/2012 1:58:00 PM	82232-334	0.2935	Pass	99.9978	Pass
AV65						
IC-8874;AV65-20120610	6/11/2012 3:30:33 PM	82233-334	0.2759	Pass		
CCV-8874;AV65-20120725	7/25/2012 10:28:56 PM	82233-334	0.2745	Pass	99.4624	Pass
AV66						
IC-8875;AV66-20120610	6/11/2012 3:30:58 PM	82234-334	0.2846	Pass		
CCV-8875;AV66-20120725	7/26/2012 12:42:39 AM	82234-334	0.2809	Pass	98.6783	Pass
AV67						
IC-8876;AV67-20120610	6/11/2012 3:31:27 PM	82235-334	0.2953	Pass		
CCV-8876;AV67-20120726	7/26/2012 5:34:37 PM	82235-334	0.2975	Pass	100.722	Pass
AV68						
IC-8877;AV68-20120610	6/11/2012 3:31:53 PM	82236-334	0.2740	Pass		
CCV-8877;AV68-20120725	7/26/2012 12:42:42 AM	82236-334	0.2748	Pass	100.313	Pass
AV69						
IC-9520;AV69-20120610	6/11/2012 3:32:14 PM	82237-334	0.2763	Pass		
CCV-9520;AV69-20120725	7/25/2012 10:29:25 PM	82237-334	0.2730	Pass	98.8075	Pass
AV70						
IC-8879;AV70-20120610	6/11/2012 3:32:41 PM	82238-334	0.2732	Pass		
CCV-8879;AV70-20120725	7/26/2012 12:42:45 AM	82238-334	0.2708	Pass	99.1119	Pass
AV71						
IC-9792;AV71-20120610	6/11/2012 3:33:08 PM	82240-334	0.2763	Pass		
CCV-9792;AV71-20120725	7/26/2012 12:42:50 AM	82240-334	0.2755	Pass	99.7117	Pass
AV72						
IC-9793;AV72-20120610	6/11/2012 3:33:25 PM	82241-334	0.2910	Pass		
CCV-9793;AV72-20120725	7/26/2012 12:42:53 AM	82241-334	0.2858	Pass	98.2175	Pass
AV73						
IC-9794;AV73-20120610	6/11/2012 3:33:47 PM	82242-334	0.2766	Pass		
CCV-9794;AV73-20120725	7/26/2012 12:42:56 AM	82242-334	0.2759	Pass	99.7532	Pass
AV74						
IC-9795;AV74-20120611a	6/12/2012 1:04:18 AM	82243-334	0.2701	Pass		
CCV-9795;AV74-20120726	7/26/2012 8:37:17 AM	82243-334	0.2731	Pass	101.096	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV75						
IC-9817;AV75-20120611a	6/12/2012 1:04:21 AM	82244-334	0.2656	Pass		
CCV-9817;AV75-20120724	7/24/2012 8:51:29 PM	82244-334	0.2666	Pass	100.388	Pass
AV76						
IC-9884;AV76-20120611a	6/12/2012 1:04:24 AM	82245-334	0.2723	Pass		
CCV-9884;AV76-20120724a	7/24/2012 10:38:47 PM	82245-334	0.2757	Pass	101.240	Pass
AV77						
IC-9885;AV77-20120612	6/12/2012 10:16:22 PM	82246-334	0.2674	Pass		
CCV-9885;AV77-20120724	7/24/2012 8:51:53 PM	82246-334	0.2687	Pass	100.497	Pass
AV78						
IC-9886;AV78-20120611a	6/12/2012 1:04:27 AM	82247-334	0.2751	Pass		
CCV-9886;AV78-20120724	7/24/2012 8:51:41 PM	82247-334	0.2748	Pass	99.8636	Pass
AV79						
IC-7107;AV79-20120611a	6/12/2012 1:04:30 AM	82232-334	0.2824	Pass		
CCV-7107;AV79-20120724	7/24/2012 8:51:57 PM	82232-334	0.2837	Pass	100.462	Pass
AV80						
IC-8874;AV80-20120611a	6/12/2012 1:04:34 AM	82233-334	0.2692	Pass		
CCV-8874;AV80-20120724	7/24/2012 8:51:46 PM	82233-334	0.2697	Pass	100.177	Pass
AV81						
IC-8875;AV81-20120611a	6/12/2012 1:04:37 AM	82234-334	0.2858	Pass		
CCV-8875;AV81-20120724	7/24/2012 8:51:49 PM	82234-334	0.2899	Pass	101.429	Pass
AV82						
IC-8876;AV82-20120611a	6/12/2012 1:04:40 AM	82235-334	0.2768	Pass		
CCV-8876;AV82-20120724	7/24/2012 8:52:00 PM	82235-334	0.2737	Pass	98.8822	Pass
AV83						
IC-8877;AV83-20120611a	6/12/2012 1:04:44 AM	82236-334	0.2727	Pass		
CCV-8877;AV83-20120724	7/24/2012 8:52:04 PM	82236-334	0.2757	Pass	101.099	Pass
AV84						
IC-9520;AV84-20120611a	6/12/2012 1:04:47 AM	82237-334	0.2790	Pass		
CCV-9520;AV84-20120724	7/24/2012 8:52:07 PM	82237-334	0.2748	Pass	98.4876	Pass
AV85						
IC-8879;AV85-20120611a	6/12/2012 1:04:50 AM	82238-334	0.2774	Pass		
CCV-8879;AV85-20120724	7/24/2012 8:52:11 PM	82238-334	0.2782	Pass	100.258	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV86						
IC-9792;AV86-20120611a	6/12/2012 1:04:54 AM	82240-334	0.2769	Pass		
CCV-9792;AV86-20120724	7/24/2012 8:52:16 PM	82240-334	0.2771	Pass	100.046	Pass
AV87						
IC-9793;AV87-20120611a	6/12/2012 1:04:56 AM	82241-334	0.2951	Pass		
CCV-9793;AV87-20120724	7/24/2012 8:52:20 PM	82241-334	0.2909	Pass	98.5861	Pass
AV88						
IC-9794;AV88-20120611a	6/12/2012 1:04:59 AM	82242-334	0.2744	Pass		
CCV-9794;AV88-20120724	7/24/2012 5:04:33 PM	82242-334	0.2741	Pass	99.8889	Pass
AV89						
IC-9795;AV89-20120612	6/12/2012 3:39:24 PM	82243-334	0.2684	Pass		
CCV-9795;AV89-20120724	7/24/2012 5:04:44 PM	82243-334	0.2679	Pass	99.8091	Pass
AV90						
IC-9817;AV90-20120612	6/12/2012 3:39:50 PM	82244-334	0.2731	Pass		
CCV-9817;AV90	7/24/2012 5:05:02 PM	82244-334	0.2721	Pass	99.6298	Pass
AV91						
IC-9884;AV91-20120612	6/12/2012 3:40:10 PM	82245-334	0.2787	Pass		
CCV-9884;AV91-20120724	7/24/2012 11:50:47 PM	82245-334	0.2800	Pass	100.497	Pass
AV92						
IC-9885;AV92-20120613	6/13/2012 10:43:01 AM	82246-334	0.2705	Pass		
CCV-9885;AV92-20120724	7/24/2012 5:08:08 PM	82246-334	0.2723	Pass	100.677	Pass
AV93						
IC-9886;AV93-20120612	6/12/2012 3:40:55 PM	82247-334	0.2715	Pass		
CCV-9886;AV93-20120724	7/24/2012 5:08:42 PM	82247-334	0.2720	Pass	100.196	Pass
AV94						
IC-7107;AV94-20120612a	6/12/2012 3:41:17 PM	82232-334	0.2797	Pass		
CCV-7107;AV94-20120724	7/24/2012 10:38:52 PM	82232-334	0.2772	Pass	99.0992	Pass
AV95						
IC-8874;AV95-20120608	6/8/2012 8:45:55 AM	82233-334	0.2719	Pass		
CCV-8874;AV95-20120724	7/24/2012 10:38:55 PM	82233-334	0.2708	Pass	99.6240	Pass
AV96						
IC-8875;AV96-20120612	6/12/2012 3:41:40 PM	82234-334	0.2831	Pass		
CCV-8875;;AV96-20120724	7/24/2012 10:39:01 PM	82234-334	0.0004	Eval	0.14859	Fail

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV97						
IC-8876;AV97-20120612a	6/12/2012 10:16:26 PM	82235-334	0.2765	Pass		
CCV-8876;;AV97-20120724	7/24/2012 10:39:04 PM	82235-334	0.2779	Pass	100.508	Pass
AV98						
IC-8877;AV98-20120608	6/8/2012 8:46:02 AM	82236-334	0.2818	Pass		
CCV-8877;AV98-20120724	7/24/2012 5:06:05 PM	82236-334	0.2793	Pass	99.1155	Pass
AV99						
IC-9520;AV99-20120608	6/8/2012 8:46:10 AM	82237-334	0.2703	Pass		
AV100						
IC-8879;AV100-20120608	6/8/2012 8:46:24 AM	82238-334	0.2719	Pass		
CCV-8879;AV100-20120726	7/26/2012 1:58:58 PM	82238-334	0.2703	Pass	99.4168	Pass
AV101						
IC-9792;AV101-20120608	6/8/2012 8:46:34 AM	82240-334	0.2802	Pass		
CCV-9792;AV101-20120726	7/26/2012 8:37:09 AM	82240-334	0.2787	Pass	99.4560	Pass
AV102						
IC-9793;AV102-20120608	6/8/2012 8:46:41 AM	82241-334	0.2826	Pass		
CCV-9793;AV102-20120726	7/26/2012 8:37:21 AM	82241-334	0.2794	Pass	98.8711	Pass
AV103						
IC-9794;AV103-20120607	6/8/2012 12:14:29 AM	82242-334	0.2709	Pass		
CCV-9794;AV103-20120726	7/26/2012 1:59:26 PM	82242-334	0.2718	Pass	100.319	Pass
AV104						
IC-9795;AV104-20120607	6/8/2012 12:14:40 AM	82243-334	0.2646	Pass		
CCV-9795;AV104-20120726	7/26/2012 1:59:37 PM	82243-334	0.0056	Eval	2.11169	Fail
AV105						
IC-9817;AV105-20120607	6/8/2012 12:14:48 AM	82244-334	0.2474	Pass		
CCV-9817;AV10520120726	7/26/2012 1:59:46 PM	82244-334	0.2451	Pass	99.0547	Pass
AV106						
IC-9884;AV106-20120607	6/8/2012 12:15:09 AM	82245-334	0.2797	Pass		
CCV-9884;AV106-20120726	7/26/2012 1:59:55 PM	82245-334	0.2758	Pass	98.5711	Pass
AV107						
IC-9885;AV107-20120607	6/8/2012 12:14:52 AM	82246-334	0.2711	Pass		
CCV-9885;AV107-20120726	7/26/2012 2:00:04 PM	82246-334	0.2733	Pass	100.841	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV108						
IC-9886;AV108-20120607	6/8/2012 12:14:56 AM	82247-334	0.2812	Pass		
CCV-9886;AV108-20120726	7/26/2012 2:00:19 PM	82247-334	0.2814	Pass	100.046	Pass
AV109						
IC-7107;AV109-20120608	6/8/2012 8:46:47 AM	82232-334	0.2782	Pass		
CCV-7107;AV109-20120725	7/26/2012 12:42:58 AM	82232-334	0.2245	Pass	80.7030	Fail
CCV-7107;AV109-20120726	7/26/2012 5:32:41 PM	82232-334	0.2819	Pass	101.326	Pass
CCV-7107;AV109-20120726a	7/26/2012 7:44:53 PM	82232-334	0.2763	Pass	99.3002	Pass
AV111						
IC-8875;AV111-20120608	6/8/2012 8:46:55 AM	82234-334	0.2800	Pass		
CCV-8875;AV111-20120726	7/26/2012 8:37:25 AM	82234-334	0.2787	Pass	99.5396	Pass
AV112						
IC-8876;AV112-20120608	6/8/2012 8:47:01 AM	82235-334	0.2750	Pass		
CCV-8876;AV112-20120725	7/25/2012 10:31:58 PM	82235-334	0.2735	Pass	99.4658	Pass
AV113						
IC-8877;AV113-20120607	6/8/2012 12:15:02 AM	82236-334	0.2765	Pass		
CCV-8877;AV113-20120726	7/26/2012 8:37:29 AM	82236-334	0.2772	Pass	100.255	Pass
AV114						
IC-9520;AV114-20120612	6/12/2012 3:42:22 PM	82237-334	0.2746	Pass		
CCV-9520;AV114-20120726	7/26/2012 5:34:48 PM	82237-334	0.2758	Pass	100.401	Pass
AV115						
IC-8879;AV115-20120612	6/12/2012 3:42:43 PM	82238-334	0.2756	Pass		
CCV-8879;AV115-20120726	7/26/2012 5:34:59 PM	82238-334	0.2762	Pass	100.213	Pass
AV116						
IC-9792;AV116-20120612	6/12/2012 3:43:02 PM	82240-334	0.2914	Pass		
CCV-9792;AV116-20120726	7/26/2012 1:59:07 PM	82240-334	0.2773	Pass	95.1508	Pass
AV117						
IC-9793;AV117-20120612	6/12/2012 3:43:27 PM	82241-334	0.2628	Pass		
CCV-9793;AV117-20120726	7/26/2012 1:59:16 PM	82241-334	0.2683	Pass	102.098	Pass
AV118						
IC-9794;AV118-20120608	6/8/2012 8:47:07 AM	82242-334	0.2728	Pass		
CCV-9794;AV118-20120726	7/26/2012 8:37:33 AM	82242-334	0.2689	Pass	98.5708	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV119						
IC-9795;AV119-20120608	6/8/2012 8:47:13 AM	82243-334	0.2655	Pass		
CCV-9795;AV119-20120726	7/26/2012 10:05:57 PM	82243-334	0.2655	Pass	99.9791	Pass
AV120						
IC-9817;AV120-20120608	6/8/2012 8:47:18 AM	82244-334	0.2668	Pass		
CCV-9817;AV120-20120726	7/26/2012 8:37:37 AM	82244-334	0.2689	Pass	100.796	Pass
AV121						
IC-9884;AV121-20120608	6/8/2012 8:54:38 AM	82245-334	0.2825	Pass		
CCV-9884;AV121-20120726	7/26/2012 8:37:41 AM	82245-334	0.2811	Pass	99.4897	Pass
AV122						
IC-9885;AV122-20120608	6/8/2012 8:54:44 AM	82246-334	0.2678	Pass		
CCV-9885;AV122-20120726	7/26/2012 8:37:46 AM	82246-334	0.2712	Pass	101.254	Pass
AV123						
IC-9886;AV123-20120614	6/15/2012 11:45:44 AM	82247-334	0.2691	Pass		
CCV-9886;AV123-20120726	7/26/2012 8:37:50 AM	82247-334	0.2654	Pass	98.6278	Pass
AV124						
IC-7107;AV124-20120614	6/15/2012 11:46:08 AM	82232-334	0.2653	Pass		
CCV-7107;AV124-20120726	7/26/2012 10:16:23 PM	82232-334	0.2661	Pass	100.282	Pass
AV125						
IC-8874;AV125-20120614	6/15/2012 11:46:45 AM	82233-334	0.2675	Pass		
CCV-8874;AV125-20120725	7/26/2012 12:43:01 AM	82233-334	0.2694	Pass	100.701	Pass
AV126						
IC-8875;AV126-20120614	6/15/2012 11:47:26 AM	82234-334	0.2760	Pass		
CCV-8875;AV126-20120726	7/26/2012 1:58:20 PM	82234-334	0.2746	Pass	99.5062	Pass
AV127						
IC-8876;AV127-20120614	6/15/2012 11:48:11 AM	82235-334	0.2775	Pass		
CCV-8876;AV127-20120725	7/26/2012 12:43:05 AM	82235-334	0.0003	Eval	0.11569	Fail
AV128						
IC-8877;AV128-20120614	6/15/2012 11:48:54 AM	82236-334	0.2685	Pass		
CCV-8877;AV128-20120726	7/26/2012 1:58:40 PM	82236-334	0.0003	Eval	0.11553	Fail
AV129						
IC-9520;AV12920120614	6/15/2012 11:49:36 AM	82237-334	0.2710	Pass		
CCV-9520;AV129-20120725	7/26/2012 12:43:08 AM	82237-334	0.2730	Pass	100.742	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV130						
IC-8879;AV130-20120614	6/15/2012 11:50:34 AM	82238-334	0.2707	Pass		
CCV-8879;AV130-20120726	7/26/2012 8:37:58 AM	82238-334	0.2711	Pass	100.151	Pass
AV131						
IC-9792;AV131-20120612	6/12/2012 10:16:29 PM	82240-334	0.2777	Pass		
CCV-9792;AV131-20120726	7/26/2012 7:43:47 PM	82240-334	0.2754	Pass	99.1770	Pass
AV132						
IC-9793;AV132-20120612	6/12/2012 10:16:32 PM	82241-334	0.2711	Pass		
CCV-9793;AV132-20120726	7/26/2012 5:35:09 PM	82241-334	0.2728	Pass	100.644	Pass
AV133						
IC-9794;AV133-20120612	6/12/2012 3:43:51 PM	82242-334	0.2627	Pass		
CCV-9794;AV133-20120726	7/26/2012 7:43:55 PM	82242-334	0.2629	Pass	100.084	Pass
AV134						
IC-9795;AV134-20120612	6/12/2012 10:16:35 PM	82243-334	0.2665	Pass		
CCV-9795;AV134-20120726	7/26/2012 7:44:04 PM	82243-334	0.2637	Pass	98.9425	Pass
AV135						
IC-9817;AV135-20120612	6/12/2012 10:16:38 PM	82244-334	0.2610	Pass		
CCV-9817;AV135-20120726	7/26/2012 7:44:16 PM	82244-334	0.2622	Pass	100.442	Pass
AV136						
IC-9884;AV136-20120612	6/12/2012 10:16:41 PM	82245-334	0.2745	Pass		
CCV-9884;AV13620120726	7/26/2012 7:44:27 PM	82245-334	0.2725	Pass	99.2766	Pass
AV137						
IC-9885;AV137-20120621	6/21/2012 2:01:56 PM	82246-334	0.2674	Pass		
CCV-9885;AV137-20120726	7/26/2012 7:44:35 PM	82246-334	0.2648	Pass	99.0375	Pass
AV138						
IC-9886;AV138-20120608	6/8/2012 8:55:45 AM	82247-334	0.2683	Pass		
CCV-9886;AV138-20120726	7/26/2012 7:44:43 PM	82247-334	0.2672	Pass	99.5864	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Monthly Backgrounds
Alpha Vision
July 2012
AV1-146

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:12:38PM 7/25/2012

Sample

Sample Name: ICB;AV70
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

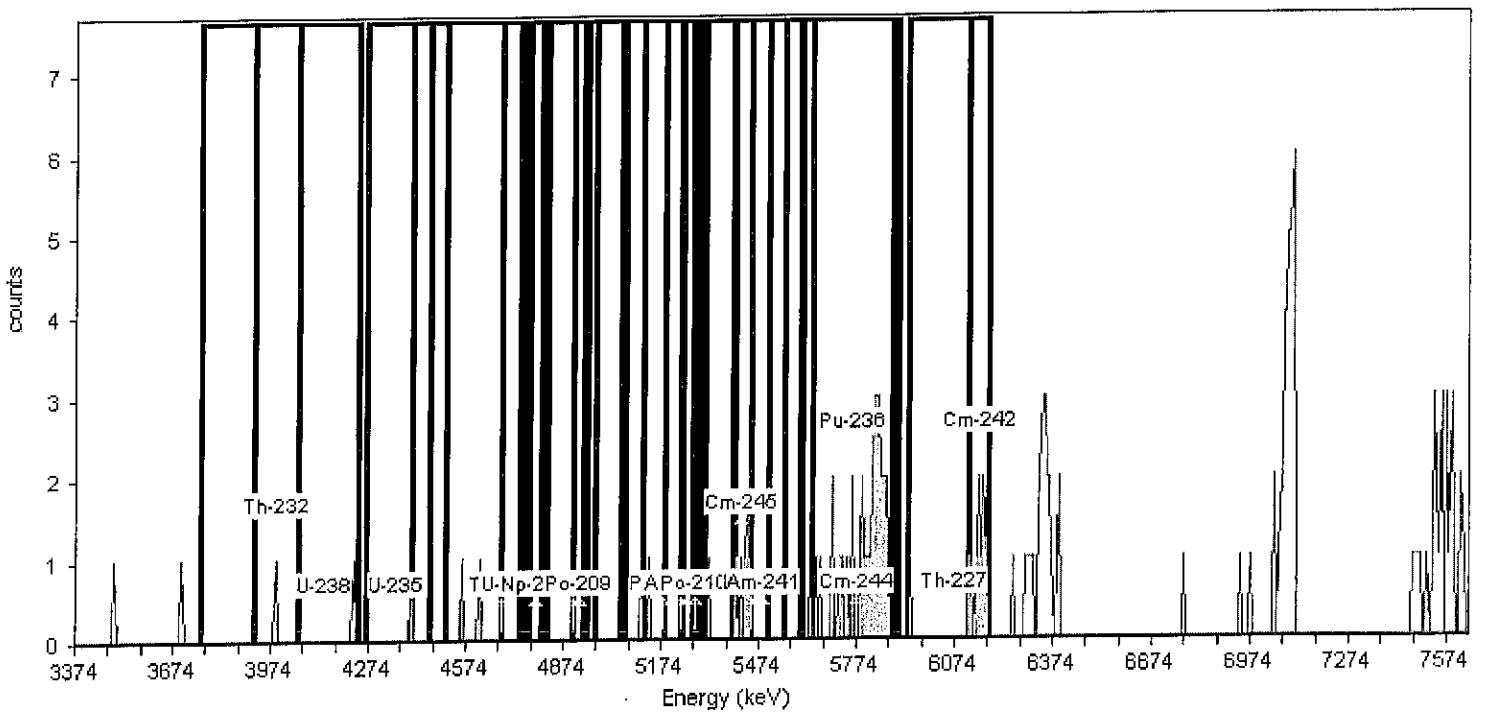
Analyst: 60040

Acquisition

Detector: AV70 , SN: 48-158FF1
Acquisition Start Date: 7/24/2012 9:07:33PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-8879;AV70-20120610
Calibration Date: 6/11/2012 3:32:41PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.32% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 136.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	2.00	2.083E-003	1.804E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	3.00	3.125E-003	2.083E-003
U-234	4.71	4.51	4.82	2.00	2.083E-003	1.804E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	1.00	1.042E-003	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	2.00	2.083E-003	1.804E-003
U-232	5.25	5.06	5.40	4.00	4.167E-003	2.329E-003
Th-228	5.45	5.19	5.51	6.00	6.250E-003	2.756E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	6.00	6.250E-003	2.756E-003
Am-241	5.48	5.30	5.60	6.00	6.250E-003	2.756E-003
Cm-245	5.42	5.40	5.45	5.00	5.208E-003	2.552E-003
Pu-236	5.76	5.61	5.89	32.00	3.333E-002	5.984E-003
Cm-244	5.78	5.64	5.90	31.00	3.229E-002	5.893E-003
Th-227	6.07	5.93	6.18	10.00	1.042E-002	3.455E-003
Cm-242	6.15	6.12	6.18	9.00	9.375E-003	3.294E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:12:55PM 7/25/2012

Sample

Sample Name: ICB;AV71
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

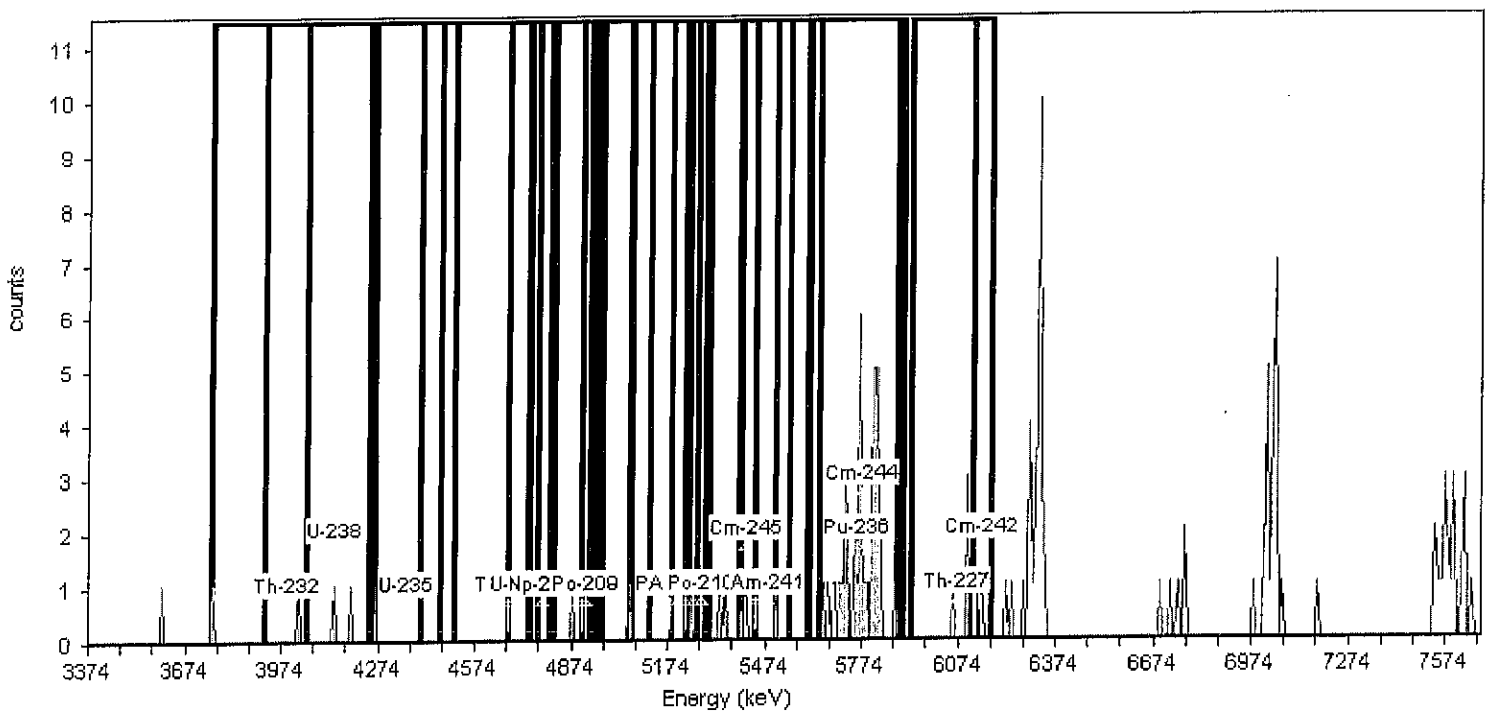
Analyst: 60040

Acquisition

Detector: AV71 , SN: 48-158EE6
Acquisition Start Date: 7/24/2012 9:07:35PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9792;AV71-20120610
Calibration Date: 6/11/2012 3:33:08PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.63% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 148.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	3.00	3.125E-003	2.083E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	2.00	2.083E-003	1.804E-003
U-232	5.25	5.06	5.40	4.00	4.167E-003	2.329E-003
Th-228	5.45	5.19	5.51	6.00	6.250E-003	2.756E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	5.00	5.208E-003	2.552E-003
Am-241	5.48	5.30	5.60	5.00	5.208E-003	2.552E-003
Cm-245	5.42	5.40	5.45	2.00	2.083E-003	1.804E-003
Pu-236	5.76	5.61	5.89	41.00	4.271E-002	6.751E-003
Cm-244	5.78	5.64	5.90	41.00	4.271E-002	6.751E-003
Th-227	6.07	5.93	6.18	8.00	8.333E-003	3.125E-003
Cm-242	6.15	6.12	6.18	4.00	4.167E-003	2.329E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:13:06PM 7/25/2012

Sample

Sample Name: ICB;AV72
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

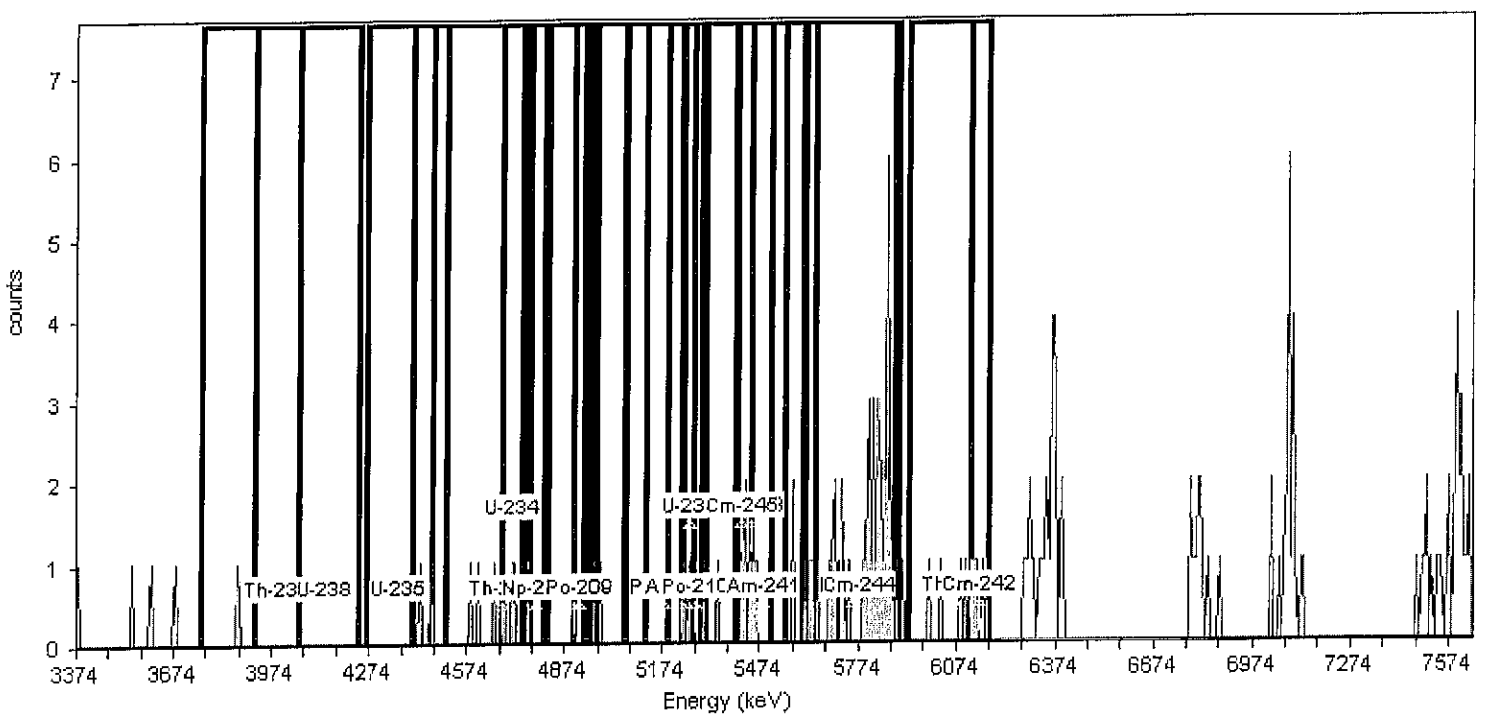
Analyst: 60040

Acquisition

Detector: AV72 , SN: 48-05a21
Acquisition Start Date: 7/24/2012 9:07:35PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9793;AV72-20120610
Calibration Date: 6/11/2012 3:33:25PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 29.10% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 163.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	0.00	0.000E+000	1.473E-003
U-235	4.36	4.26	4.46	2.00	2.083E-003	1.804E-003
Th-230	4.68	4.40	4.75	8.00	8.333E-003	3.125E-003
U-234	4.71	4.51	4.82	7.00	7.292E-003	2.946E-003
Pu-242	4.90	4.68	4.95	4.00	4.167E-003	2.329E-003
Th-229	4.86	4.74	5.12	3.00	3.125E-003	2.083E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	3.00	3.125E-003	2.083E-003
U-232	5.25	5.06	5.40	4.00	4.167E-003	2.329E-003
Th-228	5.45	5.19	5.51	11.00	1.146E-002	3.608E-003
Po-210	5.28	5.23	5.29	2.00	2.083E-003	1.804E-003
Pu-238	5.47	5.27	5.55	9.00	9.375E-003	3.294E-003
Am-241	5.48	5.30	5.60	11.00	1.146E-002	3.608E-003
Cm-245	5.42	5.40	5.45	5.00	5.208E-003	2.552E-003
Pu-236	5.76	5.61	5.89	39.00	4.062E-002	6.588E-003
Cm-244	5.78	5.64	5.90	37.00	3.854E-002	6.421E-003
Th-227	6.07	5.93	6.18	10.00	1.042E-002	3.455E-003
Cm-242	6.15	6.12	6.18	6.00	6.250E-003	2.756E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:13:18PM 7/25/2012

Sample

Sample Name: ICB;AV73
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

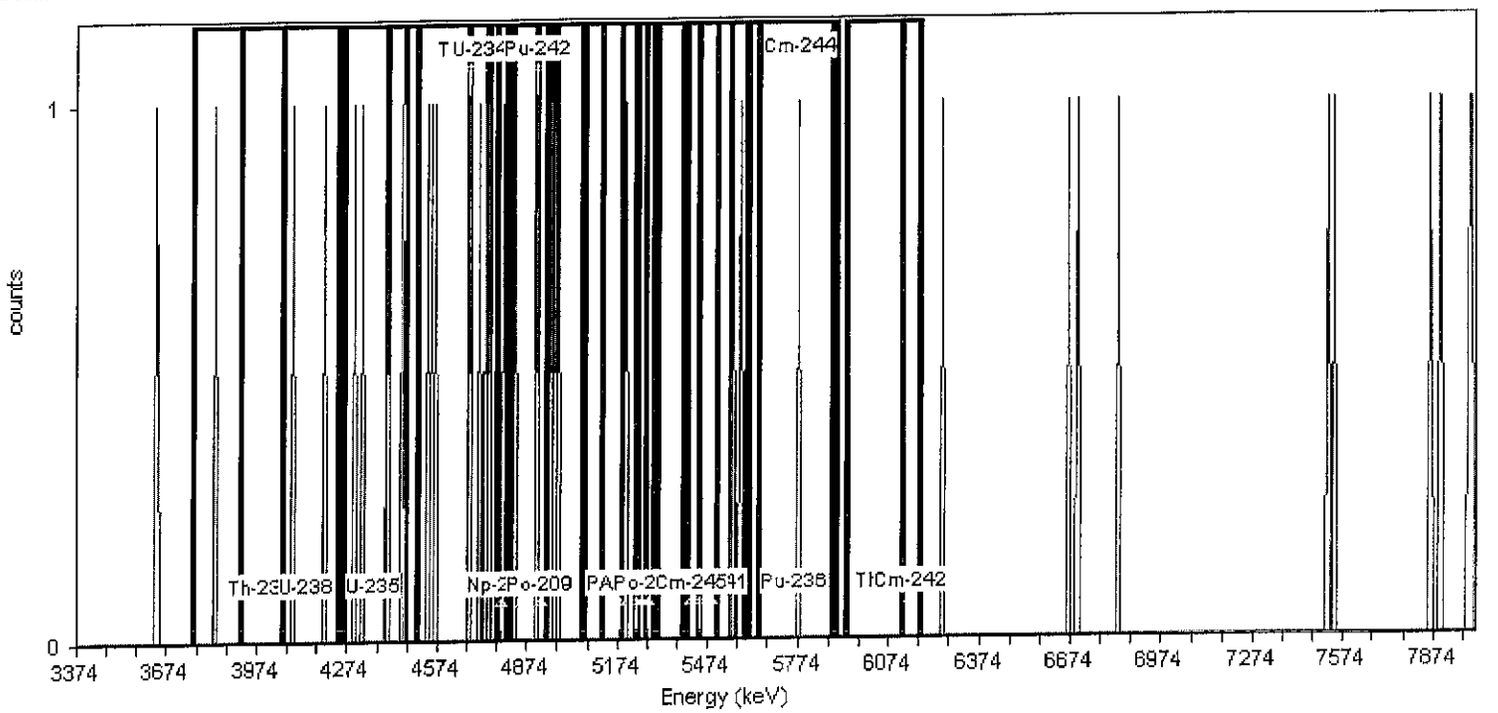
Analyst: 60040

Acquisition

Detector: AV73 , SN: 49-155N4
Acquisition Start Date: 7/24/2012 9:07:37PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9794;AV73-20120610
Calibration Date: 6/11/2012 3:33:47PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.66% +/- 0.34% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 36.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	2.00	2.083E-003	1.804E-003
U-235	4.36	4.26	4.46	4.00	4.167E-003	2.329E-003
Th-230	4.68	4.40	4.75	9.00	9.375E-003	3.294E-003
U-234	4.71	4.51	4.82	8.00	8.333E-003	3.125E-003
Pu-242	4.90	4.68	4.95	8.00	8.333E-003	3.125E-003
Th-229	4.86	4.74	5.12	7.00	7.292E-003	2.946E-003
Np-237	4.78	4.77	4.81	1.00	1.042E-003	1.473E-003
Po-209	4.92	4.90	4.93	1.00	1.042E-003	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	1.00	1.042E-003	1.473E-003
U-232	5.25	5.06	5.40	1.00	1.042E-003	1.473E-003
Th-228	5.45	5.19	5.51	1.00	1.042E-003	1.473E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	0.00	0.000E+000	1.473E-003
Am-241	5.48	5.30	5.60	2.00	2.083E-003	1.804E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	1.00	1.042E-003	1.473E-003
Cm-244	5.78	5.64	5.90	1.00	1.042E-003	1.473E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:13:30PM 7/25/2012

Sample

Sample Name: ICB;AV74
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

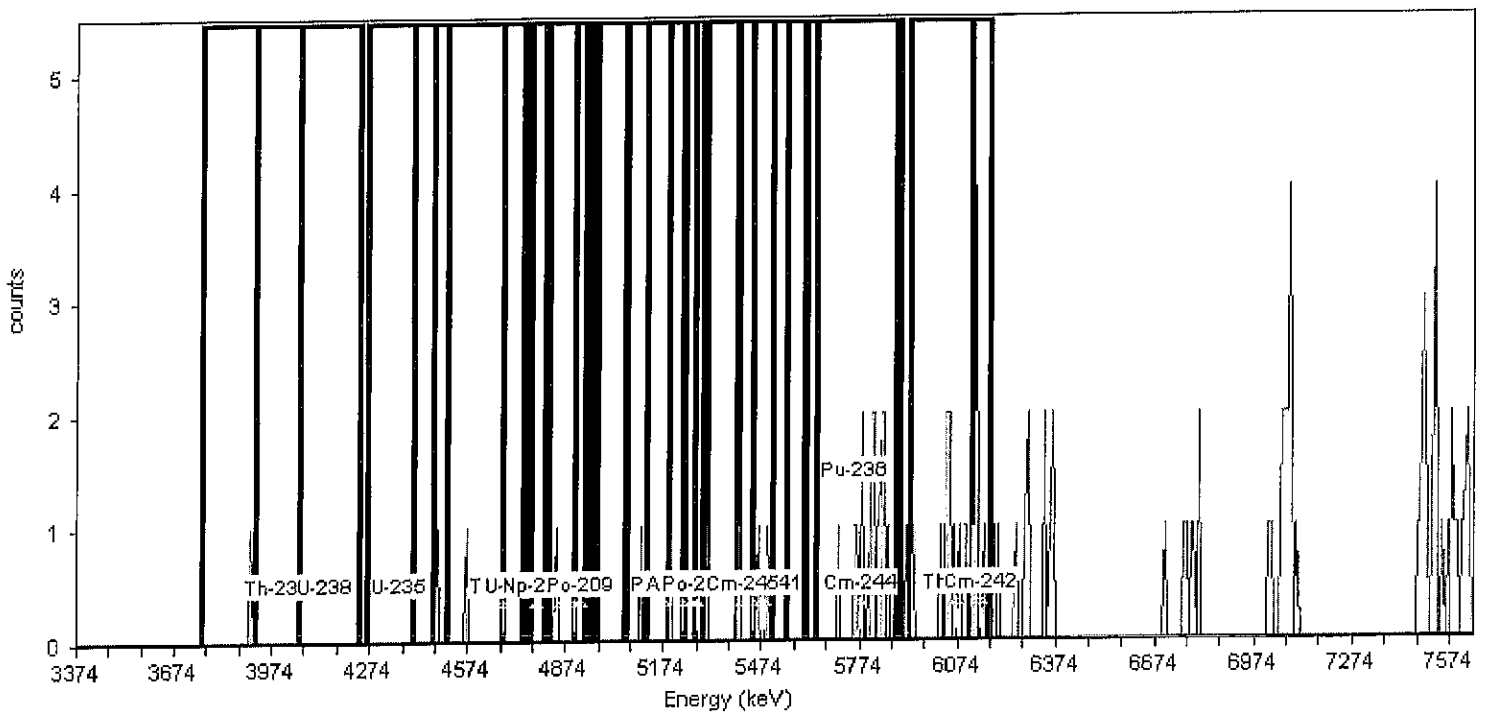
Analyst: 60040

Acquisition

Detector: AV74 , SN: 50-051C6
Acquisition Start Date: 7/24/2012 9:07:39PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9795;AV74-20120611a
Calibration Date: 6/12/2012 1:04:18AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.01% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 104.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	0.00	0.000E+000	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	2.00	2.083E-003	1.804E-003
U-234	4.71	4.51	4.82	1.00	1.042E-003	1.473E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	3.00	3.125E-003	2.083E-003
U-232	5.25	5.06	5.40	4.00	4.167E-003	2.329E-003
Th-228	5.45	5.19	5.51	5.00	5.208E-003	2.552E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	4.00	4.167E-003	2.329E-003
Am-241	5.48	5.30	5.60	4.00	4.167E-003	2.329E-003
Cm-245	5.42	5.40	5.45	1.00	1.042E-003	1.473E-003
Pu-236	5.76	5.61	5.89	16.00	1.667E-002	4.295E-003
Cm-244	5.78	5.64	5.90	16.00	1.667E-002	4.295E-003
Th-227	6.07	5.93	6.18	17.00	1.771E-002	4.419E-003
Cm-242	6.15	6.12	6.18	7.00	7.292E-003	2.946E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:35:53AM 7/24/2012

Sample

Sample Name: ICB;AV75
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012a
Description:

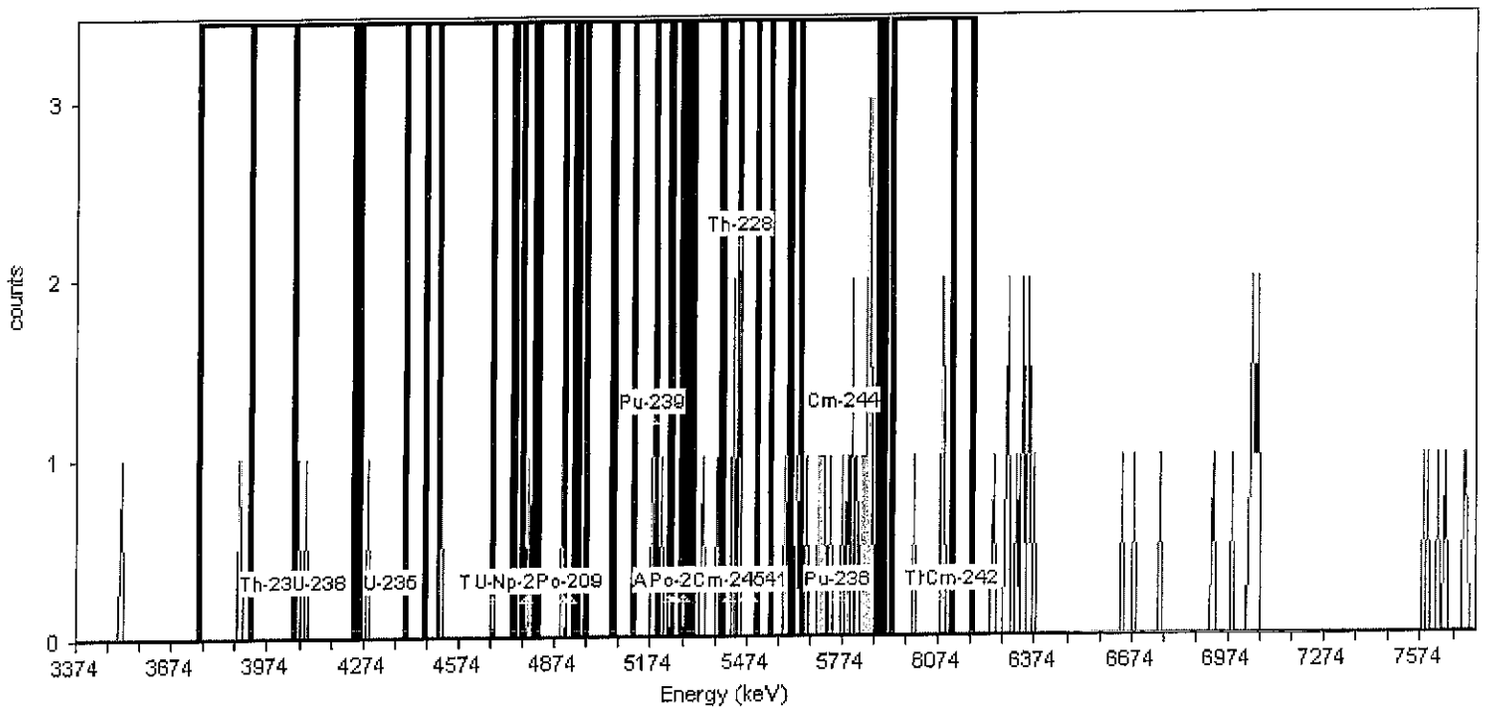
Analyst: 60040

Acquisition

Detector: AV75 , SN: 46-033P6
Acquisition Start Date: 7/23/2012 7:27:05PM
Live Time: 960.00 min.
Real Time: 960.95 min.
Calibration Name: IC-9817;AV75-20120611a
Calibration Date: 6/12/2012 1:04:21AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.56% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 67.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	2.00	2.083E-003	1.804E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	1.00	1.042E-003	1.473E-003
U-234	4.71	4.51	4.82	2.00	2.083E-003	1.804E-003
Pu-242	4.90	4.68	4.95	2.00	2.083E-003	1.804E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	1.00	1.042E-003	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	2.00	2.083E-003	1.804E-003
U-232	5.25	5.06	5.40	4.00	4.167E-003	2.329E-003
Th-228	5.45	5.19	5.51	7.00	7.292E-003	2.946E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	6.00	6.250E-003	2.756E-003
Am-241	5.48	5.30	5.60	7.00	7.292E-003	2.946E-003
Cm-245	5.42	5.40	5.45	4.00	4.167E-003	2.329E-003
Pu-236	5.76	5.61	5.89	18.00	1.875E-002	4.541E-003
Cm-244	5.78	5.64	5.90	17.00	1.771E-002	4.419E-003
Th-227	6.07	5.93	6.18	3.00	3.125E-003	2.083E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:35:59AM 7/24/2012

Sample

Sample Name: ICB;AV76
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012a
Description:

Analyst: 60040

Acquisition

Detector: AV76 , SN: 49-155N6
Acquisition Start Date: 7/23/2012 7:27:06PM
Live Time: 960.00 min.
Real Time: 960.95 min.
Calibration Name: IC-9884;AV76-20120611a
Calibration Date: 6/12/2012 1:04:24AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.23% +/- 0.38% TPU(2 sigma)

General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 35.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	5.00	5.208E-003	2.552E-003
U-238	4.14	3.92	4.24	4.00	4.167E-003	2.329E-003
U-235	4.36	4.26	4.46	9.00	9.375E-003	3.294E-003
Th-230	4.68	4.40	4.75	7.00	7.292E-003	2.946E-003
U-234	4.71	4.51	4.82	7.00	7.292E-003	2.946E-003
Pu-242	4.90	4.68	4.95	3.00	3.125E-003	2.083E-003
Th-229	4.86	4.74	5.12	3.00	3.125E-003	2.083E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	5.00	5.208E-003	2.552E-003
Am-243	5.23	5.05	5.31	4.00	4.167E-003	2.329E-003
U-232	5.25	5.06	5.40	4.00	4.167E-003	2.329E-003
Th-228	5.45	5.19	5.51	4.00	4.167E-003	2.329E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	0.00	0.000E+000	1.473E-003
Am-241	5.48	5.30	5.60	0.00	0.000E+000	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	1.00	1.042E-003	1.473E-003
Cm-244	5.78	5.64	5.90	1.00	1.042E-003	1.473E-003
Th-227	6.07	5.93	6.18	4.00	4.167E-003	2.329E-003
Cm-242	6.15	6.12	6.18	4.00	4.167E-003	2.329E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:36:05AM 7/24/2012

Sample

Sample Name: ICB;AV77
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012a
Description:

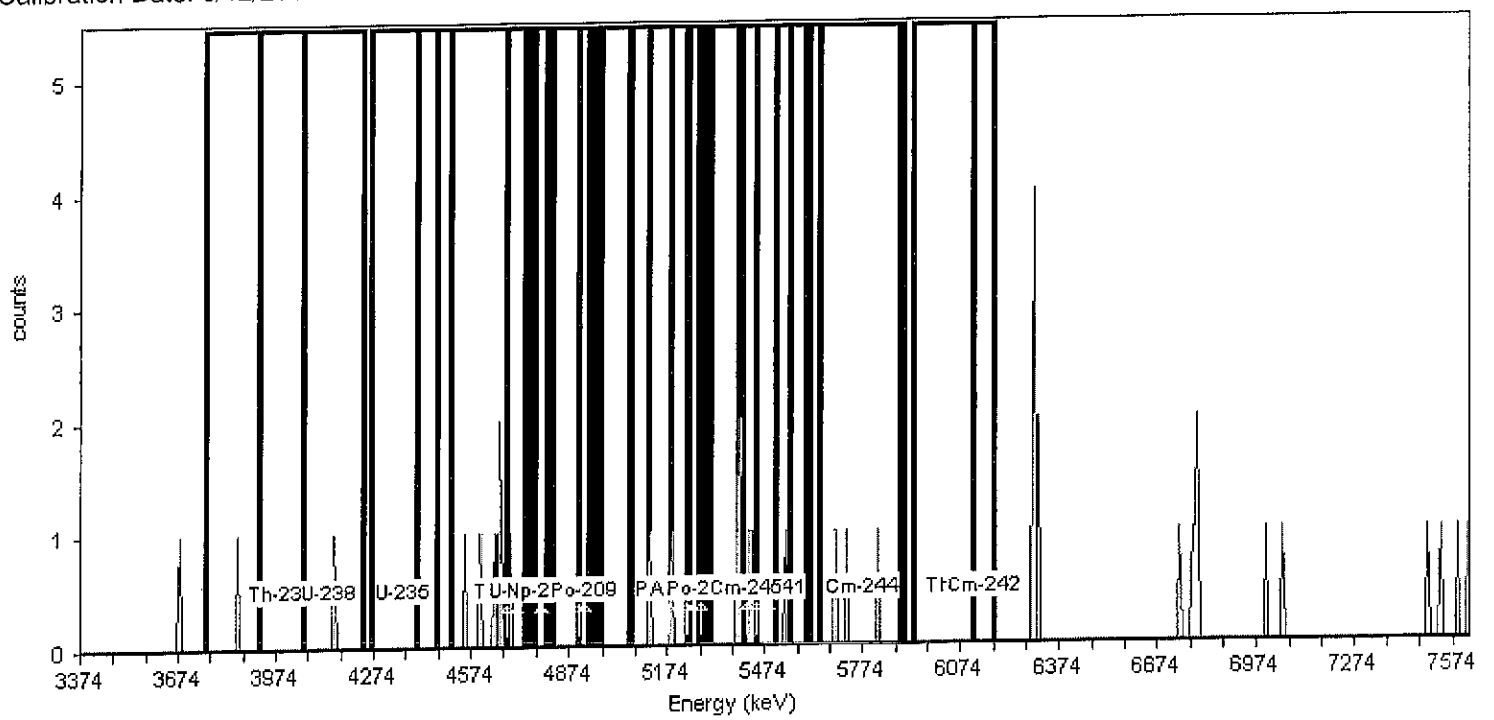
Analyst: 60040

Acquisition

Detector: AV77 , SN: 49-155N7
Acquisition Start Date: 7/23/2012 7:27:07PM
Live Time: 960.00 min.
Real Time: 960.95 min.
Calibration Name: IC-9885;AV77-20120612
Calibration Date: 6/12/2012 10:16:22PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.74% +/- 0.39% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 40.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	7.00	7.292E-003	2.946E-003
U-234	4.71	4.51	4.82	7.00	7.292E-003	2.946E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	1.00	1.042E-003	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	2.00	2.083E-003	1.804E-003
U-232	5.25	5.06	5.40	5.00	5.208E-003	2.552E-003
Th-228	5.45	5.19	5.51	6.00	6.250E-003	2.756E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	6.00	6.250E-003	2.756E-003
Am-241	5.48	5.30	5.60	6.00	6.250E-003	2.756E-003
Cm-245	5.42	5.40	5.45	4.00	4.167E-003	2.329E-003
Pu-236	5.76	5.61	5.89	4.00	4.167E-003	2.329E-003
Cm-244	5.78	5.64	5.90	4.00	4.167E-003	2.329E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:36:11AM 7/24/2012

Sample

Sample Name: ICB;AV78
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012a
Description:

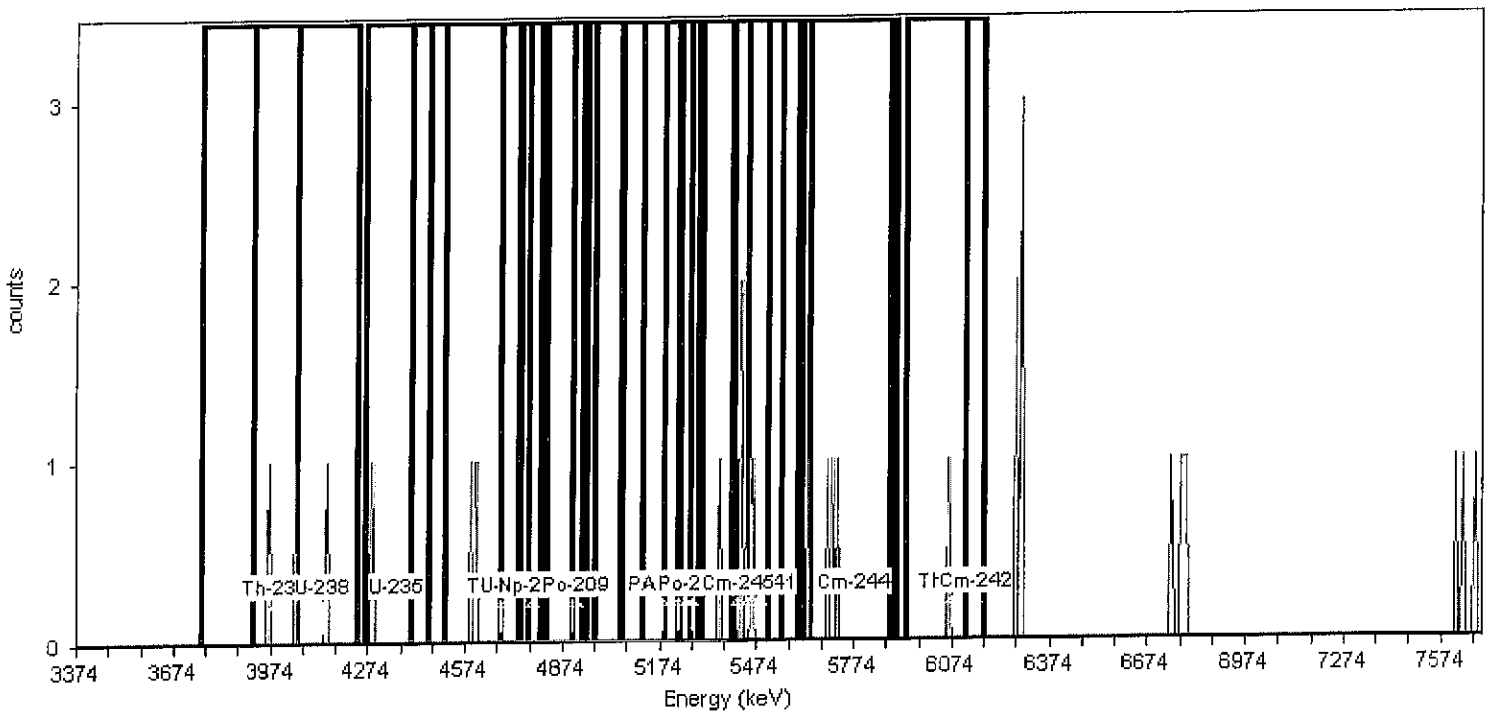
Analyst: 60040

Acquisition

Detector: AV78 , SN: 46-033FF4
Acquisition Start Date: 7/23/2012 7:27:09PM
Live Time: 960.00 min.
Real Time: 960.95 min.
Calibration Name: IC-9886;AV78-20120611a
Calibration Date: 6/12/2012 1:04:27AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.51% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 29.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	3.00	3.125E-003	2.083E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	2.00	2.083E-003	1.804E-003
U-234	4.71	4.51	4.82	2.00	2.083E-003	1.804E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	0.00	0.000E+000	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	0.00	0.000E+000	1.473E-003
Am-243	5.23	5.05	5.31	0.00	0.000E+000	1.473E-003
U-232	5.25	5.06	5.40	1.00	1.042E-003	1.473E-003
Th-228	5.45	5.19	5.51	6.00	6.250E-003	2.756E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	6.00	6.250E-003	2.756E-003
Am-241	5.48	5.30	5.60	6.00	6.250E-003	2.756E-003
Cm-245	5.42	5.40	5.45	3.00	3.125E-003	2.083E-003
Pu-236	5.76	5.61	5.89	4.00	4.167E-003	2.329E-003
Cm-244	5.78	5.64	5.90	3.00	3.125E-003	2.083E-003
Th-227	6.07	5.93	6.18	1.00	1.042E-003	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:36:17AM 7/24/2012

Sample

Sample Name: ICB;AV79
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012a
Description:

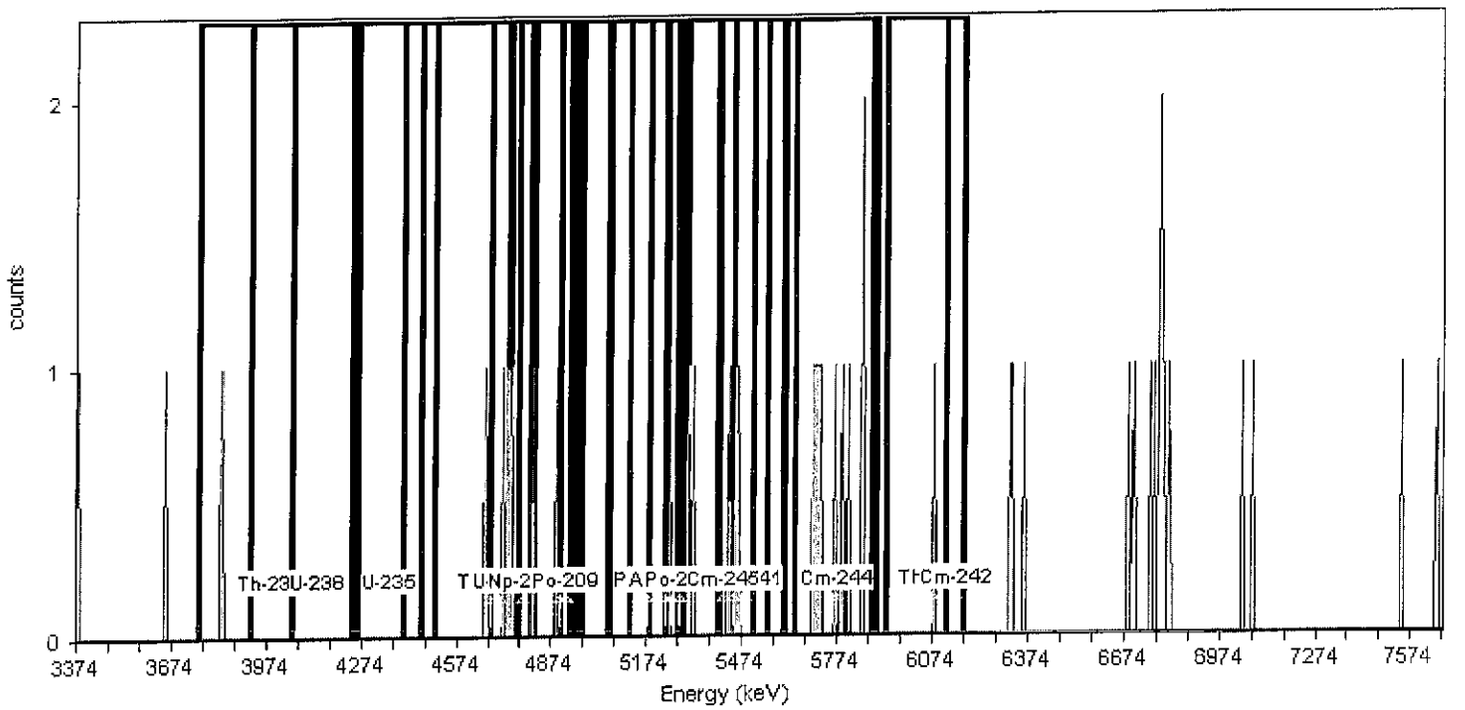
Analyst: 60040

Acquisition

Detector: AV79 , SN: 46-033Q5
Acquisition Start Date: 7/23/2012 7:27:11PM
Live Time: 960.00 min.
Real Time: 960.95 min.
Calibration Name: IC-7107;AV79-20120611a
Calibration Date: 6/12/2012 1:04:30AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 28.24% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 42.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	0.00	0.000E+000	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	5.00	5.208E-003	2.552E-003
U-234	4.71	4.51	4.82	6.00	6.250E-003	2.756E-003
Pu-242	4.90	4.68	4.95	6.00	6.250E-003	2.756E-003
Th-229	4.86	4.74	5.12	4.00	4.167E-003	2.329E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	0.00	0.000E+000	1.473E-003
Am-243	5.23	5.05	5.31	2.00	2.083E-003	1.804E-003
U-232	5.25	5.06	5.40	3.00	3.125E-003	2.083E-003
Th-228	5.45	5.19	5.51	6.00	6.250E-003	2.756E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	5.00	5.208E-003	2.552E-003
Am-241	5.48	5.30	5.60	5.00	5.208E-003	2.552E-003
Cm-245	5.42	5.40	5.45	1.00	1.042E-003	1.473E-003
Pu-236	5.76	5.61	5.89	9.00	9.375E-003	3.294E-003
Cm-244	5.78	5.64	5.90	9.00	9.375E-003	3.294E-003
Th-227	6.07	5.93	6.18	1.00	1.042E-003	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Monthly CCV
Alpha Vision
July 2012
AV1-146

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV1						
IC-7107;AV1-20120607	6/7/2012 3:02:16 PM	82232-334	0.2756	Pass		
CCV-7107;AV1-20120724	7/24/2012 1:37:50 PM	82232-334	0.2749	Pass	99.7401	Pass
AV2						
IC-8874;AV2-20120607	6/7/2012 3:02:23 PM	82233-334	0.2693	Pass		
CCV-8874;AV2-20120724	7/24/2012 1:38:06 PM	82233-334	0.2737	Pass	101.617	Pass
AV3						
IC-8875;AV3-20120607	6/7/2012 3:02:28 PM	82234-334	0.2857	Pass		
CCV-8875;AV3-20120724	7/24/2012 1:38:18 PM	82234-334	0.2813	Pass	98.4574	Pass
AV4						
IC-8876;AV4-20120607	6/7/2012 3:02:32 PM	82235-334	0.2793	Pass		
CCV-8876;AV4-20120724	7/24/2012 1:38:33 PM	82235-334	0.2759	Pass	98.7801	Pass
AV6						
IC-9520;AV6-20120607a	6/7/2012 3:56:30 PM	82237-334	0.2792	Pass		
CCV-9520;AV6-20120724	7/24/2012 1:38:57 PM	82237-334	0.2815	Pass	100.837	Pass
AV7						
IC-8879;AV7-20120607	6/7/2012 4:03:51 PM	82238-334	0.2731	Pass		
CCV-8879;AV7-20120724	7/24/2012 1:39:10 PM	82238-334	0.2696	Pass	98.7133	Pass
AV8						
IC-9792;AV8-20120607	6/7/2012 4:06:21 PM	82240-334	0.2787	Pass		
CCV-9792;AV8-20120724	7/24/2012 1:39:22 PM	82240-334	0.2791	Pass	100.131	Pass
AV9						
IC-9793;AV9-20120607	6/7/2012 4:06:26 PM	82241-334	0.2781	Pass		
CCV-9793;AV9-20120724	7/24/2012 1:39:34 PM	82241-334	0.2797	Pass	100.590	Pass
AV10						
IC-9794;AV10-20120621	6/21/2012 2:01:39 PM	82242-334	0.2725	Pass		
AV11						
IC-9795;AV11-20120607	6/7/2012 7:50:12 PM	82243-334	0.2751	Pass		
CCV-9795;AV11-20120724	7/24/2012 1:40:24 PM	82243-334	0.2762	Pass	100.416	Pass
AV12						
IC-9817;AV12-20120607	6/7/2012 7:50:16 PM	82244-334	0.2699	Pass		
CCV-9817;AV12-20120724	7/24/2012 1:40:35 PM	82244-334	0.2659	Pass	98.5073	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Friday, July 27, 2012

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV13						
IC-9884;AV13-20120607	6/7/2012 7:50:19 PM	82245-334	0.2758	Pass		
CCV-9884;AV13-20120724	7/24/2012 1:40:46 PM	82245-334	0.2906	Pass	105.355	Fail
CCV-9884;AV13-20120724a	7/24/2012 5:02:56 PM	82245-334	0.2748	Pass	99.6538	Pass
CCV-9884;AV13-20120725	7/25/2012 11:44:29 AM	82245-334	0.2727	Pass	98.8754	Pass
AV14						
IC-9885;AV14-20120607	6/7/2012 7:50:22 PM	82246-334	0.2724	Pass		
CCV-9885;AV14-20120724	7/24/2012 1:41:00 PM	82246-334	0.2691	Pass	98.7814	Pass
AV15						
IC-9886;AV15-20120607	6/7/2012 7:50:24 PM	82247-334	0.2743	Pass		
CCV-9886;AV15-20120724	7/24/2012 1:41:10 PM	82247-334	0.2744	Pass	100.039	Pass
AV16						
IC-7107;AV16-20120607a	6/8/2012 12:12:55 AM	82232-334	0.2798	Pass		
CCV-7107;AV16-20120724	7/24/2012 5:03:06 PM	82232-334	0.2799	Pass	100.019	Pass
AV17						
IC-8874;AV17-20120607	6/8/2012 12:13:37 AM	82233-334	0.2631	Pass		
CCV-8874;AV17-20120724	7/24/2012 5:03:21 PM	82233-334	0.2669	Pass	101.451	Pass
AV18						
IC-8875;AV18-20120607	6/8/2012 12:13:58 AM	82234-334	0.2748	Pass		
CCV-8875;AV18-20120724	7/24/2012 5:05:40 PM	82234-334	0.2730	Pass	99.3381	Pass
AV19						
IC-8876;AV19-20120607	6/8/2012 12:14:05 AM	82235-334	0.2694	Pass		
CCV-8876;AV19-20120724	7/24/2012 5:03:44 PM	82235-334	0.2681	Pass	99.5055	Pass
AV20						
IC-8877;AV20-20120607	6/7/2012 7:50:28 PM	82236-334	0.2703	Pass		
CCV-8877;AV20-20120724	7/24/2012 1:38:45 PM	82236-334	0.2677	Pass	99.0551	Pass
AV21						
IC-9520;AV21-20120607	6/8/2012 12:14:09 AM	82237-334	0.2708	Pass		
CCV-9520;AV21-20120724	7/24/2012 5:03:53 PM	82237-334	0.2734	Pass	100.966	Pass
AV22						
IC-8879;AV22-20120607	6/8/2012 12:14:14 AM	82238-334	0.2679	Pass		
CCV-8879;AV22-20120724	7/24/2012 5:04:03 PM	82238-334	0.2639	Pass	98.5154	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV23						
IC-9792;AV23-20120607	6/8/2012 12:14:18 AM	82240-334	0.2673	Pass		
CCV-9792;AV23-20120724	7/24/2012 5:04:14 PM	82240-334	0.2688	Pass	100.552	Pass
AV24						
IC-9793;AV24-20120607	6/8/2012 12:14:21 AM	82241-334	0.2734	Pass		
CCV-9793;AV24-20120724	7/24/2012 5:04:24 PM	82241-334	0.2766	Pass	101.156	Pass
AV43						
IC-9794;AV43-20120607	6/7/2012 7:50:31 PM	82242-334	0.2699	Pass		
CCV-9794;AV43-20120725	7/25/2012 10:28:07 PM	82242-334	0.2686	Pass	99.5158	Pass
AV44						
IC-9795;AV44-20120610	6/11/2012 3:27:57 PM	82243-334	0.2664	Pass		
CCV-9795;AV44-20120725	7/25/2012 10:28:12 PM	82243-334	0.2682	Pass	100.672	Pass
AV45						
IC-9817;AV45-20120610	6/11/2012 3:28:22 PM	82244-334	0.2704	Pass		
CCV-9817;AV45-20120725	7/25/2012 10:28:16 PM	82244-334	0.0001	Eval	5.53444	Fail
AV46						
IC-9884;AV46-20120610	6/11/2012 3:28:47 PM	82245-334	0.2849	Pass		
CCV-9884;AV46-20120725	7/25/2012 10:28:19 PM	82245-334	0.2804	Pass	98.4164	Pass
AV47						
IC-9885;AV47-20120611a	6/12/2012 1:04:12 AM	82246-334	0.2678	Pass		
AV48						
IC-9886;AV48-20120610	6/11/2012 3:29:40 PM	82247-334	0.2764	Pass		
CCV-9886;AV48-20120725	7/25/2012 10:28:31 PM	82247-334	0.0004	Eval	0.13021	Fail
AV49						
IC-7107;AV49-20120610	6/10/2012 8:17:41 PM	82232-334	0.2927	Pass		
CCV-7107;AV49-20120725	7/25/2012 10:28:34 PM	82232-334	0.2909	Pass	99.3834	Pass
AV50						
IC-8874;AV50-20120610	6/10/2012 8:17:58 PM	82233-334	0.2754	Pass		
CCV-8874;AV50-20120726	7/26/2012 1:58:10 PM	82233-334	0.2729	Pass	99.0921	Pass
AV51						
IC-8875;AV51-20120610	6/10/2012 8:18:12 PM	82234-334	0.2819	Pass		
CCV-8875;AV51-20120725	7/25/2012 10:28:38 PM	82234-334	0.2814	Pass	99.8447	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV52						
IC-8876;AV52-20120610	6/10/2012 8:18:26 PM	82235-334	0.2911	Pass		
CCV-8876;AV52-20120726	7/26/2012 1:58:30 PM	82235-334	0.2925	Pass	100.496	Pass
AV53						
IC-8877;AV53-20120610	6/10/2012 8:18:38 PM	82236-334	0.2773	Pass		
CCV-8877;AV53-20120725	7/25/2012 10:28:41 PM	82236-334	0.2775	Pass	100.055	Pass
AV54						
IC-9520;AV54-20120610	6/10/2012 8:18:52 PM	82237-334	0.2798	Pass		
CCV-9520;AV54-20120726	7/26/2012 1:58:49 PM	82237-334	0.2760	Pass	98.6444	Pass
AV55						
IC-8879;AV55-20120610	6/10/2012 8:19:03 PM	82238-334	0.2720	Pass		
CCV-8879;AV55-20120725	7/25/2012 10:28:45 PM	82238-334	0.2697	Pass	99.1518	Pass
AV56						
IC-9792;AV56-20120610	6/10/2012 8:19:16 PM	82240-334	0.2709	Pass		
CCV-9792;AV56-20120725	7/25/2012 10:28:48 PM	82240-334	0.0003	Eval	0.11605	Fail
AV57						
IC-9793;AV57-20120610	6/10/2012 8:19:29 PM	82241-334	0.2764	Pass		
CCV-9793;AV57-20120725	7/25/2012 10:28:52 PM	82241-334	0.2763	Pass	99.9520	Pass
AV58						
IC-9794;AV58-20120610	6/10/2012 8:19:36 PM	82242-334	0.2550	Pass		
AV59						
IC-9795;AV59-20120610	6/10/2012 8:19:39 PM	82243-334	0.2753	Pass		
AV60						
IC-9817;AV60-20120610	6/10/2012 8:19:43 PM	82244-334	0.2682	Pass		
CCV-9817;AV60-20120725a	7/26/2012 12:42:30 AM	82244-334	0.2705	Pass	100.836	Pass
AV61						
IC-9884;AV61-20120610	6/10/2012 8:19:46 PM	82245-334	0.2792	Pass		
CCV-9884;AV61-20120725	7/26/2012 12:42:24 AM	82245-334	0.2785	Pass	99.7356	Pass
AV62						
IC-9885;AV62-20120610	6/10/2012 8:19:49 PM	82246-334	0.2742	Pass		
CCV-9885;AV62-20120725	7/26/2012 12:42:33 AM	82246-334	0.2738	Pass	99.8594	Pass
AV63						
IC-9886;AV63-20120610	6/10/2012 8:19:57 PM	82247-334	0.2707	Pass		
CCV-9886;AV63-20120725	7/26/2012 12:42:36 AM	82247-334	0.2716	Pass	100.323	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV64						
IC-7107;AV64-20120610	6/11/2012 3:30:09 PM	82232-334	0.2935	Pass		
CCV-7107;AV64-20120726	7/26/2012 1:58:00 PM	82232-334	0.2935	Pass	99.9978	Pass
AV65						
IC-8874;AV65-20120610	6/11/2012 3:30:33 PM	82233-334	0.2759	Pass		
CCV-8874;AV65-20120725	7/25/2012 10:28:56 PM	82233-334	0.2745	Pass	99.4624	Pass
AV66						
IC-8875;AV66-20120610	6/11/2012 3:30:58 PM	82234-334	0.2846	Pass		
CCV-8875;AV66-20120725	7/26/2012 12:42:39 AM	82234-334	0.2809	Pass	98.6783	Pass
AV67						
IC-8876;AV67-20120610	6/11/2012 3:31:27 PM	82235-334	0.2953	Pass		
CCV-8876;AV67-20120726	7/26/2012 5:34:37 PM	82235-334	0.2975	Pass	100.722	Pass
AV68						
IC-8877;AV68-20120610	6/11/2012 3:31:53 PM	82236-334	0.2740	Pass		
CCV-8877;AV68-20120725	7/26/2012 12:42:42 AM	82236-334	0.2748	Pass	100.313	Pass
AV69						
IC-9520;AV69-20120610	6/11/2012 3:32:14 PM	82237-334	0.2763	Pass		
CCV-9520;AV69-20120725	7/25/2012 10:29:25 PM	82237-334	0.2730	Pass	98.8075	Pass
AV70						
IC-8879;AV70-20120610	6/11/2012 3:32:41 PM	82238-334	0.2732	Pass		
CCV-8879;AV70-20120725	7/26/2012 12:42:45 AM	82238-334	0.2708	Pass	99.1119	Pass
AV71						
IC-9792;AV71-20120610	6/11/2012 3:33:08 PM	82240-334	0.2763	Pass		
CCV-9792;AV71-20120725	7/26/2012 12:42:50 AM	82240-334	0.2755	Pass	99.7117	Pass
AV72						
IC-9793;AV72-20120610	6/11/2012 3:33:25 PM	82241-334	0.2910	Pass		
CCV-9793;AV72-20120725	7/26/2012 12:42:53 AM	82241-334	0.2858	Pass	98.2175	Pass
AV73						
IC-9794;AV73-20120610	6/11/2012 3:33:47 PM	82242-334	0.2766	Pass		
CCV-9794;AV73-20120725	7/26/2012 12:42:56 AM	82242-334	0.2759	Pass	99.7532	Pass
AV74						
IC-9795;AV74-20120611a	6/12/2012 1:04:18 AM	82243-334	0.2701	Pass		
CCV-9795;AV74-20120726	7/26/2012 8:37:17 AM	82243-334	0.2731	Pass	101.096	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV75						
IC-9817;AV75-20120611a	6/12/2012 1:04:21 AM	82244-334	0.2656	Pass		
CCV-9817;AV75-20120724	7/24/2012 8:51:29 PM	82244-334	0.2666	Pass	100.388	Pass
AV76						
IC-9884;AV76-20120611a	6/12/2012 1:04:24 AM	82245-334	0.2723	Pass		
CCV-9884;AV76-20120724a	7/24/2012 10:38:47 PM	82245-334	0.2757	Pass	101.240	Pass
AV77						
IC-9885;AV77-20120612	6/12/2012 10:16:22 PM	82246-334	0.2674	Pass		
CCV-9885;AV77-20120724	7/24/2012 8:51:53 PM	82246-334	0.2687	Pass	100.497	Pass
AV78						
IC-9886;AV78-20120611a	6/12/2012 1:04:27 AM	82247-334	0.2751	Pass		
CCV-9886;AV78-20120724	7/24/2012 8:51:41 PM	82247-334	0.2748	Pass	99.8636	Pass
AV79						
IC-7107;AV79-20120611a	6/12/2012 1:04:30 AM	82232-334	0.2824	Pass		
CCV-7107;AV79-20120724	7/24/2012 8:51:57 PM	82232-334	0.2837	Pass	100.462	Pass
AV80						
IC-8874;AV80-20120611a	6/12/2012 1:04:34 AM	82233-334	0.2692	Pass		
CCV-8874;AV80-20120724	7/24/2012 8:51:46 PM	82233-334	0.2697	Pass	100.177	Pass
AV81						
IC-8875;AV81-20120611a	6/12/2012 1:04:37 AM	82234-334	0.2858	Pass		
CCV-8875;AV81-20120724	7/24/2012 8:51:49 PM	82234-334	0.2899	Pass	101.429	Pass
AV82						
IC-8876;AV82-20120611a	6/12/2012 1:04:40 AM	82235-334	0.2768	Pass		
CCV-8876;AV82-20120724	7/24/2012 8:52:00 PM	82235-334	0.2737	Pass	98.8822	Pass
AV83						
IC-8877;AV83-20120611a	6/12/2012 1:04:44 AM	82236-334	0.2727	Pass		
CCV-8877;AV83-20120724	7/24/2012 8:52:04 PM	82236-334	0.2757	Pass	101.099	Pass
AV84						
IC-9520;AV84-20120611a	6/12/2012 1:04:47 AM	82237-334	0.2790	Pass		
CCV-9520;AV84-20120724	7/24/2012 8:52:07 PM	82237-334	0.2748	Pass	98.4876	Pass
AV85						
IC-8879;AV85-20120611a	6/12/2012 1:04:50 AM	82238-334	0.2774	Pass		
CCV-8879;AV85-20120724	7/24/2012 8:52:11 PM	82238-334	0.2782	Pass	100.258	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV86						
IC-9792;AV86-20120611a	6/12/2012 1:04:54 AM	82240-334	0.2769	Pass		
CCV-9792;AV86-20120724	7/24/2012 8:52:16 PM	82240-334	0.2771	Pass	100.046	Pass
AV87						
IC-9793;AV87-20120611a	6/12/2012 1:04:56 AM	82241-334	0.2951	Pass		
CCV-9793;AV87-20120724	7/24/2012 8:52:20 PM	82241-334	0.2909	Pass	98.5861	Pass
AV88						
IC-9794;AV88-20120611a	6/12/2012 1:04:59 AM	82242-334	0.2744	Pass		
CCV-9794;AV88-20120724	7/24/2012 5:04:33 PM	82242-334	0.2741	Pass	99.8889	Pass
AV89						
IC-9795;AV89-20120612	6/12/2012 3:39:24 PM	82243-334	0.2684	Pass		
CCV-9795;AV89-20120724	7/24/2012 5:04:44 PM	82243-334	0.2679	Pass	99.8091	Pass
AV90						
IC-9817;AV90-20120612	6/12/2012 3:39:50 PM	82244-334	0.2731	Pass		
CCV-9817;AV90	7/24/2012 5:05:02 PM	82244-334	0.2721	Pass	99.6298	Pass
AV91						
IC-9884;AV91-20120612	6/12/2012 3:40:10 PM	82245-334	0.2787	Pass		
CCV-9884;AV91-20120724	7/24/2012 11:50:47 PM	82245-334	0.2800	Pass	100.497	Pass
AV92						
IC-9885;AV92-20120613	6/13/2012 10:43:01 AM	82246-334	0.2705	Pass		
CCV-9885;AV92-20120724	7/24/2012 5:08:08 PM	82246-334	0.2723	Pass	100.677	Pass
AV93						
IC-9886;AV93-20120612	6/12/2012 3:40:55 PM	82247-334	0.2715	Pass		
CCV-9886;AV93-20120724	7/24/2012 5:08:42 PM	82247-334	0.2720	Pass	100.196	Pass
AV94						
IC-7107;AV94-20120612a	6/12/2012 3:41:17 PM	82232-334	0.2797	Pass		
CCV-7107;AV94-20120724	7/24/2012 10:38:52 PM	82232-334	0.2772	Pass	99.0992	Pass
AV95						
IC-8874;AV95-20120608	6/8/2012 8:45:55 AM	82233-334	0.2719	Pass		
CCV-8874;AV95-20120724	7/24/2012 10:38:55 PM	82233-334	0.2708	Pass	99.6240	Pass
AV96						
IC-8875;AV96-20120612	6/12/2012 3:41:40 PM	82234-334	0.2831	Pass		
CCV-8875;;AV96-20120724	7/24/2012 10:39:01 PM	82234-334	0.0004	Eval	0.14859	Fail

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV97						
IC-8876;AV97-20120612a	6/12/2012 10:16:26 PM	82235-334	0.2765	Pass		
CCV-8876;;AV97-20120724	7/24/2012 10:39:04 PM	82235-334	0.2779	Pass	100.508	Pass
AV98						
IC-8877;AV98-20120608	6/8/2012 8:46:02 AM	82236-334	0.2818	Pass		
CCV-8877;AV98-20120724	7/24/2012 5:06:05 PM	82236-334	0.2793	Pass	99.1155	Pass
AV99						
IC-9520;AV99-20120608	6/8/2012 8:46:10 AM	82237-334	0.2703	Pass		
AV100						
IC-8879;AV100-20120608	6/8/2012 8:46:24 AM	82238-334	0.2719	Pass		
CCV-8879;AV100-20120726	7/26/2012 1:58:58 PM	82238-334	0.2703	Pass	99.4168	Pass
AV101						
IC-9792;AV101-20120608	6/8/2012 8:46:34 AM	82240-334	0.2802	Pass		
CCV-9792;AV101-20120726	7/26/2012 8:37:09 AM	82240-334	0.2787	Pass	99.4560	Pass
AV102						
IC-9793;AV102-20120608	6/8/2012 8:46:41 AM	82241-334	0.2826	Pass		
CCV-9793;AV102-20120726	7/26/2012 8:37:21 AM	82241-334	0.2794	Pass	98.8711	Pass
AV103						
IC-9794;AV103-20120607	6/8/2012 12:14:29 AM	82242-334	0.2709	Pass		
CCV-9794;AV103-20120726	7/26/2012 1:59:26 PM	82242-334	0.2718	Pass	100.319	Pass
AV104						
IC-9795;AV104-20120607	6/8/2012 12:14:40 AM	82243-334	0.2646	Pass		
CCV-9795;AV104-20120726	7/26/2012 1:59:37 PM	82243-334	0.0056	Eval	2.11169	Fail
AV105						
IC-9817;AV105-20120607	6/8/2012 12:14:48 AM	82244-334	0.2474	Pass		
CCV-9817;AV10520120726	7/26/2012 1:59:46 PM	82244-334	0.2451	Pass	99.0547	Pass
AV106						
IC-9884;AV106-20120607	6/8/2012 12:15:09 AM	82245-334	0.2797	Pass		
CCV-9884;AV106-20120726	7/26/2012 1:59:55 PM	82245-334	0.2758	Pass	98.5711	Pass
AV107						
IC-9885;AV107-20120607	6/8/2012 12:14:52 AM	82246-334	0.2711	Pass		
CCV-9885;AV107-20120726	7/26/2012 2:00:04 PM	82246-334	0.2733	Pass	100.841	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV108						
IC-9886;AV108-20120607	6/8/2012 12:14:56 AM	82247-334	0.2812	Pass		
CCV-9886;AV108-20120726	7/26/2012 2:00:19 PM	82247-334	0.2814	Pass	100.046	Pass
AV109						
IC-7107;AV109-20120608	6/8/2012 8:46:47 AM	82232-334	0.2782	Pass		
CCV-7107;AV109-20120725	7/26/2012 12:42:58 AM	82232-334	0.2245	Pass	80.7030	Fail
CCV-7107;AV109-20120726	7/26/2012 5:32:41 PM	82232-334	0.2819	Pass	101.326	Pass
CCV-7107;AV109-20120726a	7/26/2012 7:44:53 PM	82232-334	0.2763	Pass	99.3002	Pass
AV111						
IC-8875;AV111-20120608	6/8/2012 8:46:55 AM	82234-334	0.2800	Pass		
CCV-8875;AV111-20120726	7/26/2012 8:37:25 AM	82234-334	0.2787	Pass	99.5396	Pass
AV112						
IC-8876;AV112-20120608	6/8/2012 8:47:01 AM	82235-334	0.2750	Pass		
CCV-8876;AV112-20120725	7/25/2012 10:31:58 PM	82235-334	0.2735	Pass	99.4658	Pass
AV113						
IC-8877;AV113-20120607	6/8/2012 12:15:02 AM	82236-334	0.2765	Pass		
CCV-8877;AV113-20120726	7/26/2012 8:37:29 AM	82236-334	0.2772	Pass	100.255	Pass
AV114						
IC-9520;AV114-20120612	6/12/2012 3:42:22 PM	82237-334	0.2746	Pass		
CCV-9520;AV114-20120726	7/26/2012 5:34:48 PM	82237-334	0.2758	Pass	100.401	Pass
AV115						
IC-8879;AV115-20120612	6/12/2012 3:42:43 PM	82238-334	0.2756	Pass		
CCV-8879;AV115-20120726	7/26/2012 5:34:59 PM	82238-334	0.2762	Pass	100.213	Pass
AV116						
IC-9792;AV116-20120612	6/12/2012 3:43:02 PM	82240-334	0.2914	Pass		
CCV-9792;AV116-20120726	7/26/2012 1:59:07 PM	82240-334	0.2773	Pass	95.1508	Pass
AV117						
IC-9793;AV117-20120612	6/12/2012 3:43:27 PM	82241-334	0.2628	Pass		
CCV-9793;AV117-20120726	7/26/2012 1:59:16 PM	82241-334	0.2683	Pass	102.098	Pass
AV118						
IC-9794;AV118-20120608	6/8/2012 8:47:07 AM	82242-334	0.2728	Pass		
CCV-9794;AV118-20120726	7/26/2012 8:37:33 AM	82242-334	0.2689	Pass	98.5708	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV119						
IC-9795;AV119-20120608	6/8/2012 8:47:13 AM	82243-334	0.2655	Pass		
CCV-9795;AV119-20120726	7/26/2012 10:05:57 PM	82243-334	0.2655	Pass	99.9791	Pass
AV120						
IC-9817;AV120-20120608	6/8/2012 8:47:18 AM	82244-334	0.2668	Pass		
CCV-9817;AV120-20120726	7/26/2012 8:37:37 AM	82244-334	0.2689	Pass	100.796	Pass
AV121						
IC-9884;AV121-20120608	6/8/2012 8:54:38 AM	82245-334	0.2825	Pass		
CCV-9884;AV121-20120726	7/26/2012 8:37:41 AM	82245-334	0.2811	Pass	99.4897	Pass
AV122						
IC-9885;AV122-20120608	6/8/2012 8:54:44 AM	82246-334	0.2678	Pass		
CCV-9885;AV122-20120726	7/26/2012 8:37:46 AM	82246-334	0.2712	Pass	101.254	Pass
AV123						
IC-9886;AV123-20120614	6/15/2012 11:45:44 AM	82247-334	0.2691	Pass		
CCV-9886;AV123-20120726	7/26/2012 8:37:50 AM	82247-334	0.2654	Pass	98.6278	Pass
AV124						
IC-7107;AV124-20120614	6/15/2012 11:46:08 AM	82232-334	0.2653	Pass		
CCV-7107;AV124-20120726	7/26/2012 10:16:23 PM	82232-334	0.2661	Pass	100.282	Pass
AV125						
IC-8874;AV125-20120614	6/15/2012 11:46:45 AM	82233-334	0.2675	Pass		
CCV-8874;AV125-20120725	7/26/2012 12:43:01 AM	82233-334	0.2694	Pass	100.701	Pass
AV126						
IC-8875;AV126-20120614	6/15/2012 11:47:26 AM	82234-334	0.2760	Pass		
CCV-8875;AV126-20120726	7/26/2012 1:58:20 PM	82234-334	0.2746	Pass	99.5062	Pass
AV127						
IC-8876;AV127-20120614	6/15/2012 11:48:11 AM	82235-334	0.2775	Pass		
CCV-8876;AV127-20120725	7/26/2012 12:43:05 AM	82235-334	0.0003	Eval	0.11569	Fail
AV128						
IC-8877;AV128-20120614	6/15/2012 11:48:54 AM	82236-334	0.2685	Pass		
CCV-8877;AV128-20120726	7/26/2012 1:58:40 PM	82236-334	0.0003	Eval	0.11553	Fail
AV129						
IC-9520;AV12920120614	6/15/2012 11:49:36 AM	82237-334	0.2710	Pass		
CCV-9520;AV129-20120725	7/26/2012 12:43:08 AM	82237-334	0.2730	Pass	100.742	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV130						
IC-8879;AV130-20120614	6/15/2012 11:50:34 AM	82238-334	0.2707	Pass		
CCV-8879;AV130-20120726	7/26/2012 8:37:58 AM	82238-334	0.2711	Pass	100.151	Pass
AV131						
IC-9792;AV131-20120612	6/12/2012 10:16:29 PM	82240-334	0.2777	Pass		
CCV-9792;AV131-20120726	7/26/2012 7:43:47 PM	82240-334	0.2754	Pass	99.1770	Pass
AV132						
IC-9793;AV132-20120612	6/12/2012 10:16:32 PM	82241-334	0.2711	Pass		
CCV-9793;AV132-20120726	7/26/2012 5:35:09 PM	82241-334	0.2728	Pass	100.644	Pass
AV133						
IC-9794;AV133-20120612	6/12/2012 3:43:51 PM	82242-334	0.2627	Pass		
CCV-9794;AV133-20120726	7/26/2012 7:43:55 PM	82242-334	0.2629	Pass	100.084	Pass
AV134						
IC-9795;AV134-20120612	6/12/2012 10:16:35 PM	82243-334	0.2665	Pass		
CCV-9795;AV134-20120726	7/26/2012 7:44:04 PM	82243-334	0.2637	Pass	98.9425	Pass
AV135						
IC-9817;AV135-20120612	6/12/2012 10:16:38 PM	82244-334	0.2610	Pass		
CCV-9817;AV135-20120726	7/26/2012 7:44:16 PM	82244-334	0.2622	Pass	100.442	Pass
AV136						
IC-9884;AV136-20120612	6/12/2012 10:16:41 PM	82245-334	0.2745	Pass		
CCV-9884;AV13620120726	7/26/2012 7:44:27 PM	82245-334	0.2725	Pass	99.2766	Pass
AV137						
IC-9885;AV137-20120621	6/21/2012 2:01:56 PM	82246-334	0.2674	Pass		
CCV-9885;AV137-20120726	7/26/2012 7:44:35 PM	82246-334	0.2648	Pass	99.0375	Pass
AV138						
IC-9886;AV138-20120608	6/8/2012 8:55:45 AM	82247-334	0.2683	Pass		
CCV-9886;AV138-20120726	7/26/2012 7:44:43 PM	82247-334	0.2672	Pass	99.5864	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Monthly Backgrounds
Alpha Vision
July 2012
AV1-146

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:12:32PM 7/25/2012

Sample

Sample Name: ICB;AV111
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

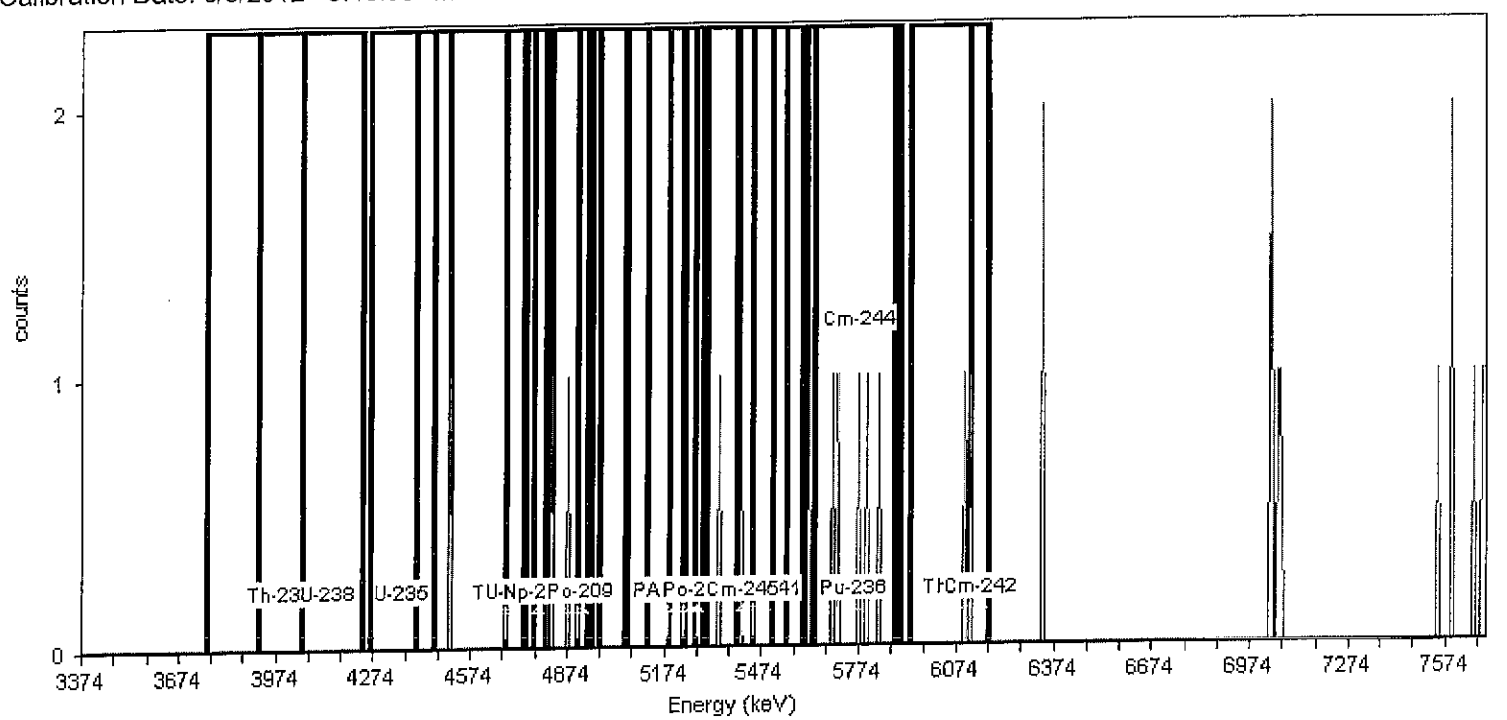
Analyst: 60040

Acquisition

Detector: AV111 , SN: 49-037E6
Acquisition Start Date: 7/24/2012 9:06:19PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-8875;AV111-20120608
Calibration Date: 6/8/2012 8:46:55AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 28.00% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 25.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	0.00	0.000E+000	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	1.00	1.042E-003	1.473E-003
U-234	4.71	4.51	4.82	2.00	2.083E-003	1.804E-003
Pu-242	4.90	4.68	4.95	2.00	2.083E-003	1.804E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	0.00	0.000E+000	1.473E-003
Am-243	5.23	5.05	5.31	0.00	0.000E+000	1.473E-003
U-232	5.25	5.06	5.40	1.00	1.042E-003	1.473E-003
Th-228	5.45	5.19	5.51	2.00	2.083E-003	1.804E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	2.00	2.083E-003	1.804E-003
Am-241	5.48	5.30	5.60	2.00	2.083E-003	1.804E-003
Cm-245	5.42	5.40	5.45	1.00	1.042E-003	1.473E-003
Pu-236	5.76	5.61	5.89	6.00	6.250E-003	2.756E-003
Cm-244	5.78	5.64	5.90	5.00	5.208E-003	2.552E-003
Th-227	6.07	5.93	6.18	2.00	2.083E-003	1.804E-003
Cm-242	6.15	6.12	6.18	1.00	1.042E-003	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:12:43PM 7/25/2012

Sample

Sample Name: ICB;AV112
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

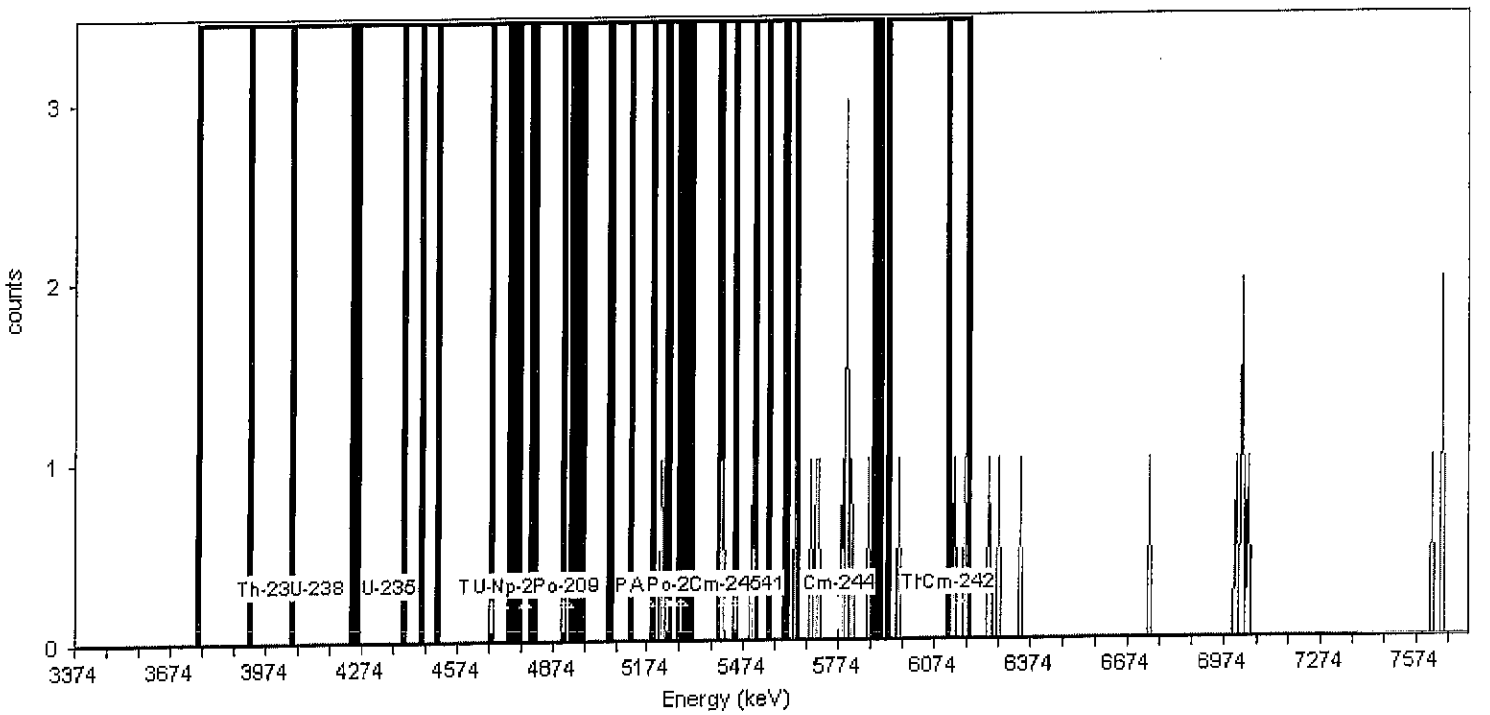
Analyst: 60040

Acquisition

Detector: AV112 , SN: 49-037G7
Acquisition Start Date: 7/24/2012 9:06:21PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-8876;AV112-20120608
Calibration Date: 6/8/2012 8:47:01AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.50% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 29.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	0.00	0.000E+000	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	0.00	0.000E+000	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	1.00	1.042E-003	1.473E-003
U-232	5.25	5.06	5.40	2.00	2.083E-003	1.804E-003
Th-228	5.45	5.19	5.51	4.00	4.167E-003	2.329E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	3.00	3.125E-003	2.083E-003
Am-241	5.48	5.30	5.60	3.00	3.125E-003	2.083E-003
Cm-245	5.42	5.40	5.45	2.00	2.083E-003	1.804E-003
Pu-236	5.76	5.61	5.89	10.00	1.042E-002	3.455E-003
Cm-244	5.78	5.64	5.90	9.00	9.375E-003	3.294E-003
Th-227	6.07	5.93	6.18	3.00	3.125E-003	2.083E-003
Cm-242	6.15	6.12	6.18	2.00	2.083E-003	1.804E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:13:00PM 7/25/2012

Sample

Sample Name: ICB;AV113
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

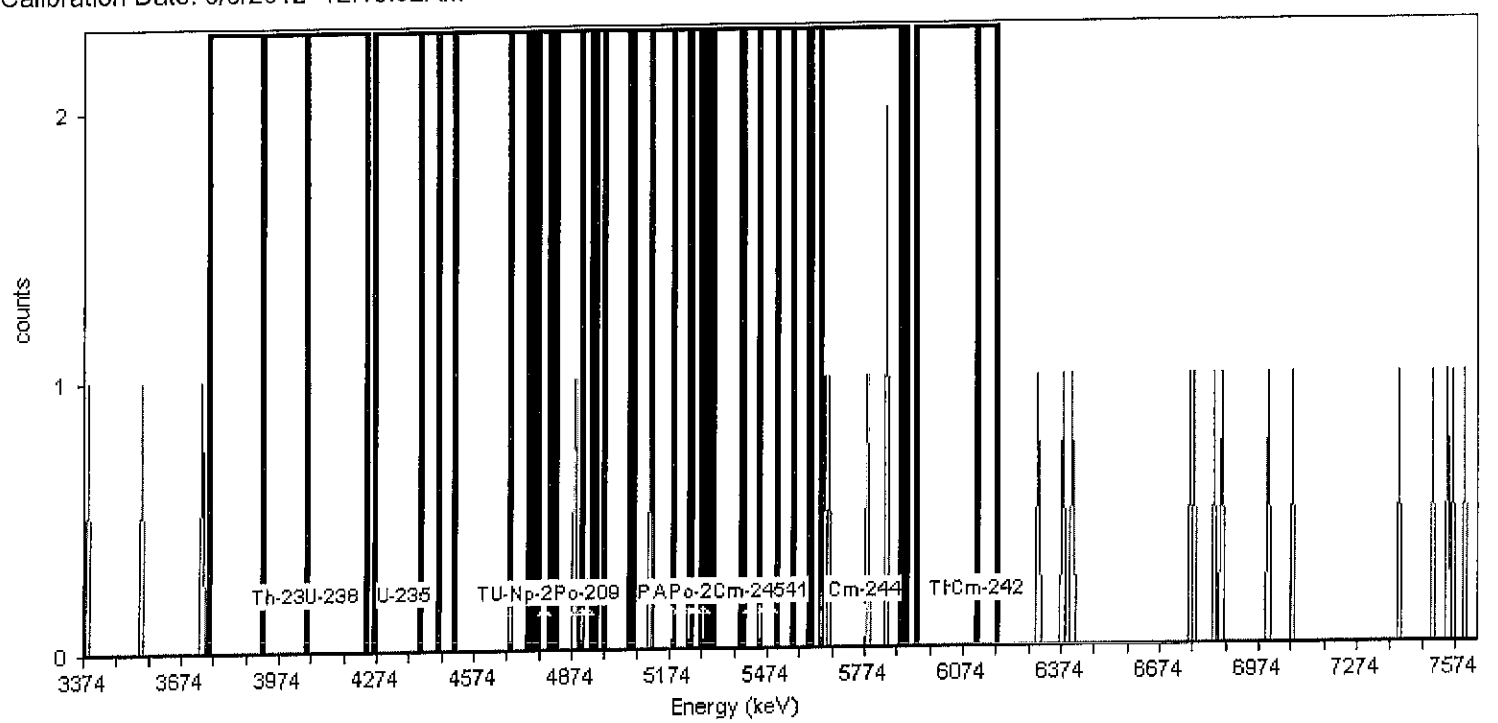
Analyst: 60040

Acquisition

Detector: AV113 , SN: 49-037X5
Acquisition Start Date: 7/24/2012 9:06:22PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-8877;AV113-20120607
Calibration Date: 6/8/2012 12:15:02AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.65% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 24.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	0.00	0.000E+000	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	1.00	1.042E-003	1.473E-003
U-232	5.25	5.06	5.40	1.00	1.042E-003	1.473E-003
Th-228	5.45	5.19	5.51	0.00	0.000E+000	1.473E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	0.00	0.000E+000	1.473E-003
Am-241	5.48	5.30	5.60	0.00	0.000E+000	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	5.00	5.208E-003	2.552E-003
Cm-244	5.78	5.64	5.90	5.00	5.208E-003	2.552E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:13:12PM 7/25/2012

Sample

Sample Name: ICB;AV114
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

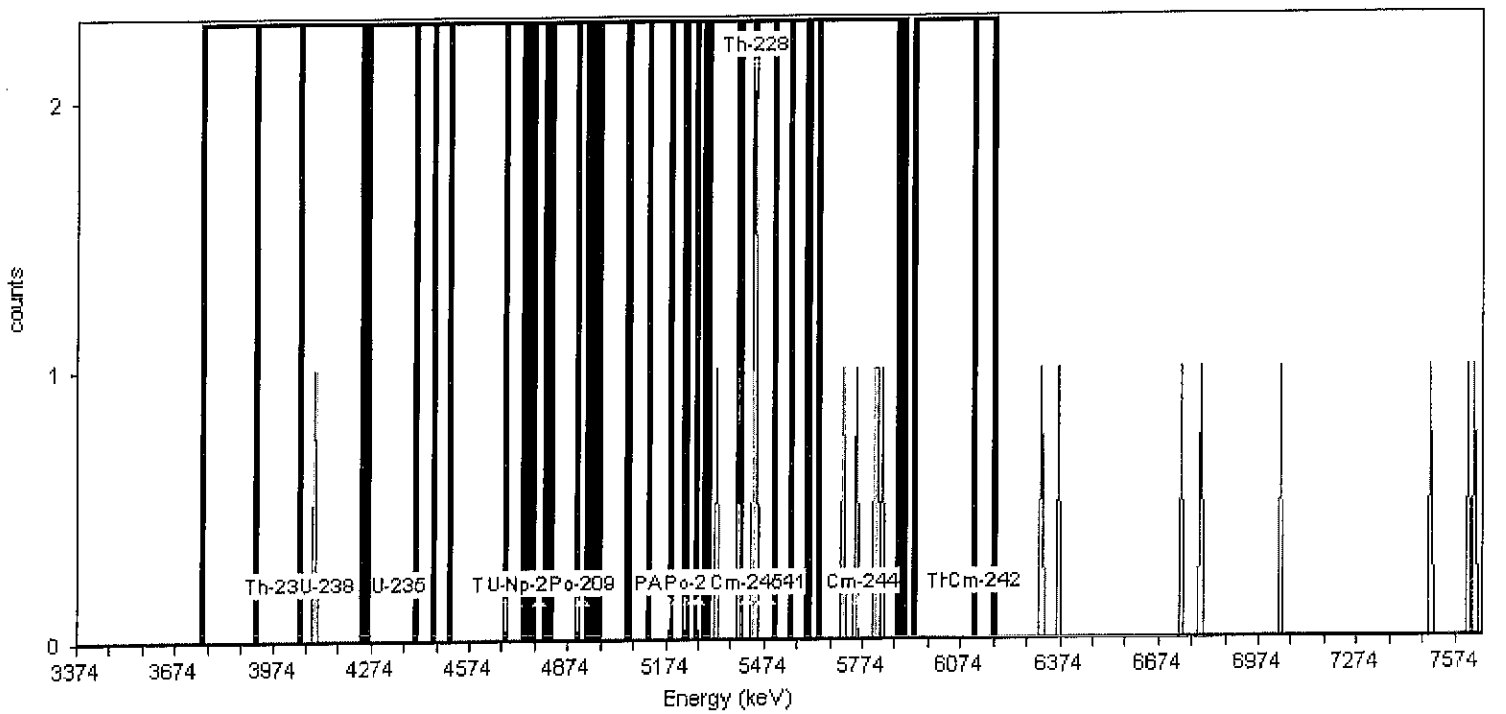
Analyst: 60040

Acquisition

Detector: AV114 , SN: 49-037E7
Acquisition Start Date: 7/24/2012 9:06:23PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9520;AV114-20120612
Calibration Date: 6/12/2012 3:42:22PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.46% +/- 0.37% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 19.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	0.00	0.000E+000	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	0.00	0.000E+000	1.473E-003
Am-243	5.23	5.05	5.31	0.00	0.000E+000	1.473E-003
U-232	5.25	5.06	5.40	2.00	2.083E-003	1.804E-003
Th-228	5.45	5.19	5.51	5.00	5.208E-003	2.552E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	5.00	5.208E-003	2.552E-003
Am-241	5.48	5.30	5.60	5.00	5.208E-003	2.552E-003
Cm-245	5.42	5.40	5.45	4.00	4.167E-003	2.329E-003
Pu-236	5.76	5.61	5.89	5.00	5.208E-003	2.552E-003
Cm-244	5.78	5.64	5.90	5.00	5.208E-003	2.552E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:13:24PM 7/25/2012

Sample

Sample Name: ICB;AV115
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

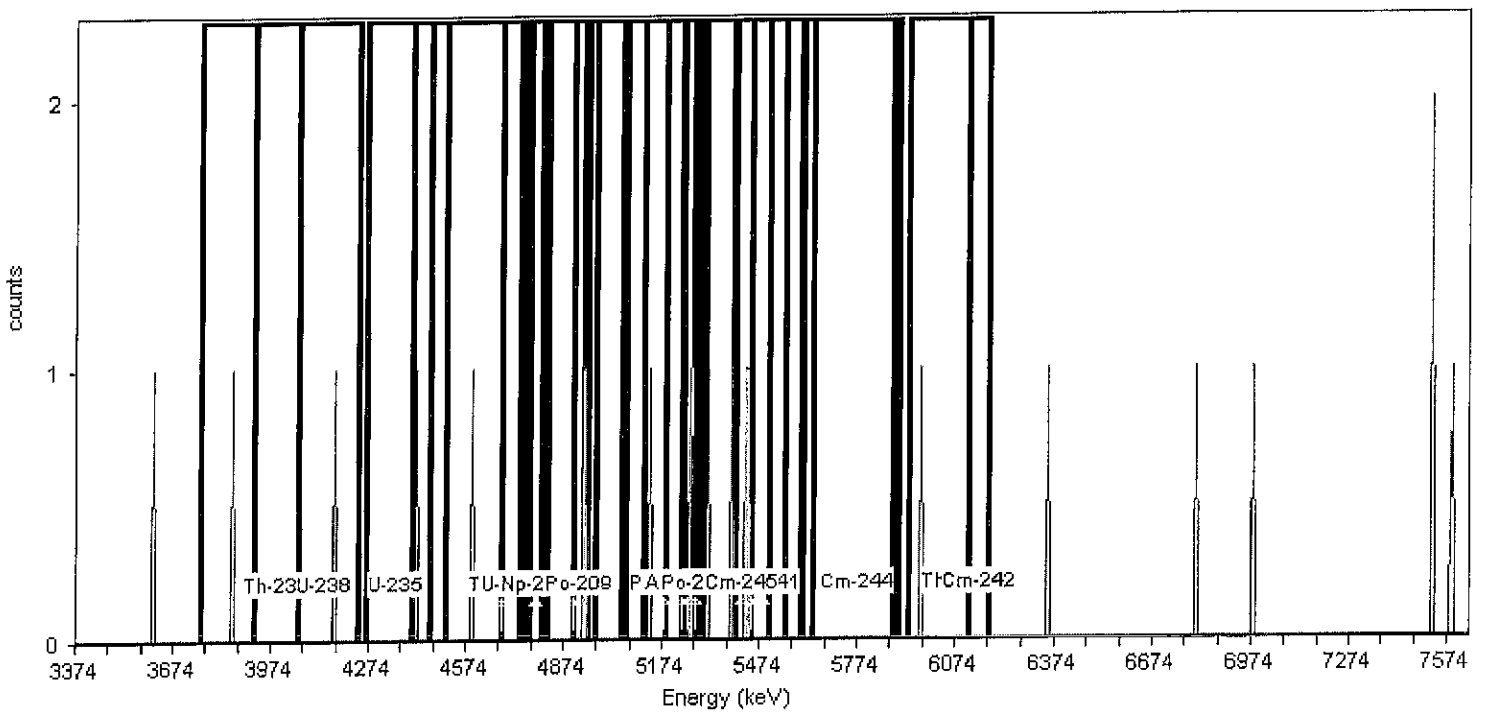
Analyst: 60040

Acquisition

Detector: AV115 , SN: 49-037E4
Acquisition Start Date: 7/24/2012 9:06:24PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-8879;AV115-20120612
Calibration Date: 6/12/2012 3:42:43PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.56% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 20.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	2.00	2.083E-003	1.804E-003
U-234	4.71	4.51	4.82	1.00	1.042E-003	1.473E-003
Pu-242	4.90	4.68	4.95	2.00	2.083E-003	1.804E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	1.00	1.042E-003	1.473E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	2.00	2.083E-003	1.804E-003
U-232	5.25	5.06	5.40	4.00	4.167E-003	2.329E-003
Th-228	5.45	5.19	5.51	5.00	5.208E-003	2.552E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	4.00	4.167E-003	2.329E-003
Am-241	5.48	5.30	5.60	4.00	4.167E-003	2.329E-003
Cm-245	5.42	5.40	5.45	2.00	2.083E-003	1.804E-003
Pu-236	5.76	5.61	5.89	0.00	0.000E+000	1.473E-003
Cm-244	5.78	5.64	5.90	0.00	0.000E+000	1.473E-003
Th-227	6.07	5.93	6.18	1.00	1.042E-003	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:13:36PM 7/25/2012

Sample

Sample Name: ICB;AV116
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

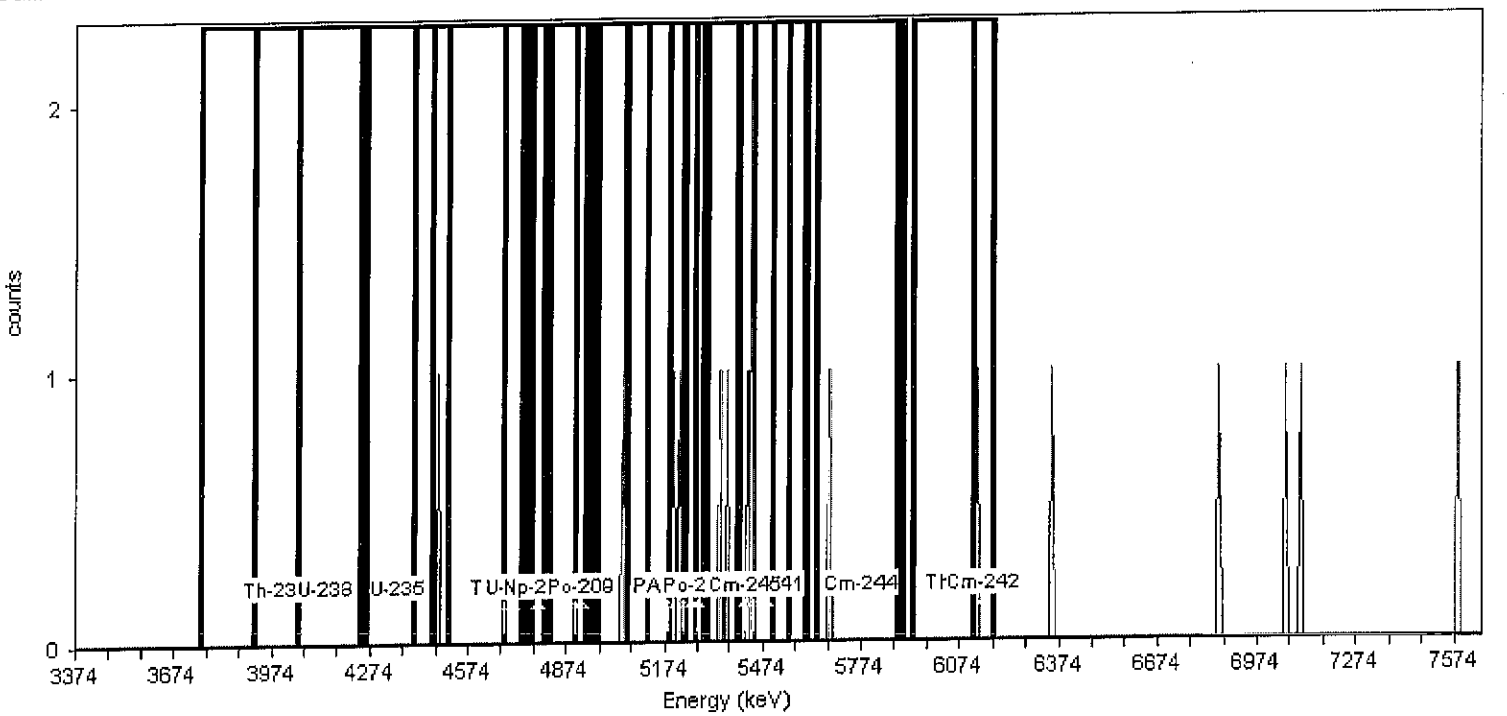
Analyst: 60040

Acquisition

Detector: AV116 , SN: 49-034G1
Acquisition Start Date: 7/24/2012 9:06:25PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9792;AV116-20120612
Calibration Date: 6/12/2012 3:43:02PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 29.14% +/- 0.33% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 17.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	0.00	0.000E+000	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	1.00	1.042E-003	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	1.00	1.042E-003	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	3.00	3.125E-003	2.083E-003
Am-243	5.23	5.05	5.31	2.00	2.083E-003	1.804E-003
U-232	5.25	5.06	5.40	4.00	4.167E-003	2.329E-003
Th-228	5.45	5.19	5.51	7.00	7.292E-003	2.946E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	5.00	5.208E-003	2.552E-003
Am-241	5.48	5.30	5.60	5.00	5.208E-003	2.552E-003
Cm-245	5.42	5.40	5.45	3.00	3.125E-003	2.083E-003
Pu-236	5.76	5.61	5.89	1.00	1.042E-003	1.473E-003
Cm-244	5.78	5.64	5.90	1.00	1.042E-003	1.473E-003
Th-227	6.07	5.93	6.18	1.00	1.042E-003	1.473E-003
Cm-242	6.15	6.12	6.18	1.00	1.042E-003	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:13:42PM 7/25/2012

Sample

Sample Name: ICB;AV117
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

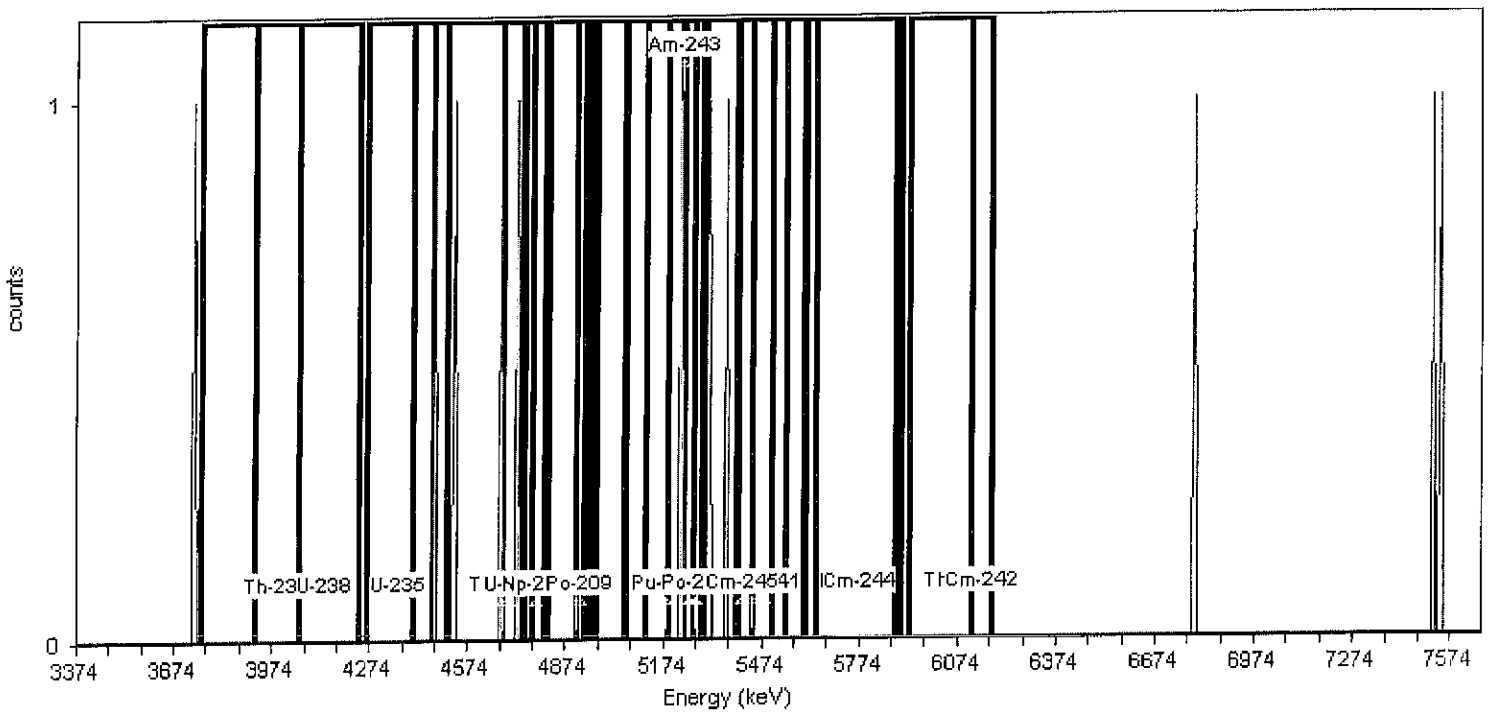
Analyst: 60040

Acquisition

Detector: AV117 , SN: 49-037X4
Acquisition Start Date: 7/24/2012 9:06:26PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9793;AV117-20120612
Calibration Date: 6/12/2012 3:43:27PM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.28% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 12.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	0.00	0.000E+000	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	4.00	4.167E-003	2.329E-003
U-234	4.71	4.51	4.82	3.00	3.125E-003	2.083E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	0.00	0.000E+000	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	2.00	2.083E-003	1.804E-003
Am-243	5.23	5.05	5.31	2.00	2.083E-003	1.804E-003
U-232	5.25	5.06	5.40	4.00	4.167E-003	2.329E-003
Th-228	5.45	5.19	5.51	4.00	4.167E-003	2.329E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	2.00	2.083E-003	1.804E-003
Am-241	5.48	5.30	5.60	2.00	2.083E-003	1.804E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	0.00	0.000E+000	1.473E-003
Cm-244	5.78	5.64	5.90	0.00	0.000E+000	1.473E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:13:48PM 7/25/2012

Sample

Sample Name: ICB;AV118
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

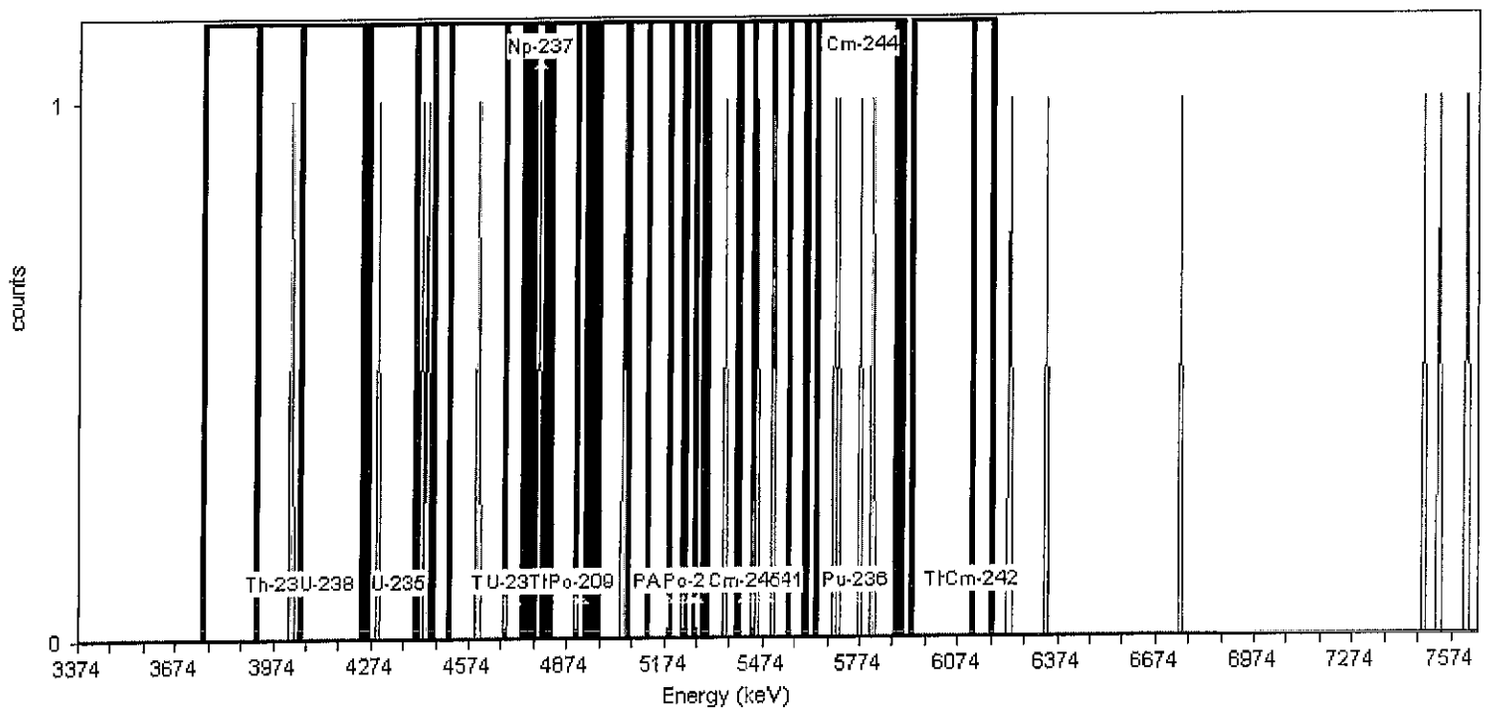
Analyst: 60040

Acquisition

Detector: AV118 , SN: 49-037F4
Acquisition Start Date: 7/24/2012 9:06:28PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9794;AV118-20120608
Calibration Date: 6/8/2012 8:47:07AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.28% +/- 0.34% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 21.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	3.00	3.125E-003	2.083E-003
Th-230	4.68	4.40	4.75	3.00	3.125E-003	2.083E-003
U-234	4.71	4.51	4.82	2.00	2.083E-003	1.804E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	1.00	1.042E-003	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	0.00	0.000E+000	1.473E-003
U-232	5.25	5.06	5.40	1.00	1.042E-003	1.473E-003
Th-228	5.45	5.19	5.51	3.00	3.125E-003	2.083E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	3.00	3.125E-003	2.083E-003
Am-241	5.48	5.30	5.60	3.00	3.125E-003	2.083E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	4.00	4.167E-003	2.329E-003
Cm-244	5.78	5.64	5.90	4.00	4.167E-003	2.329E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:13:55PM 7/25/2012

Sample

Sample Name: ICB;AV119
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

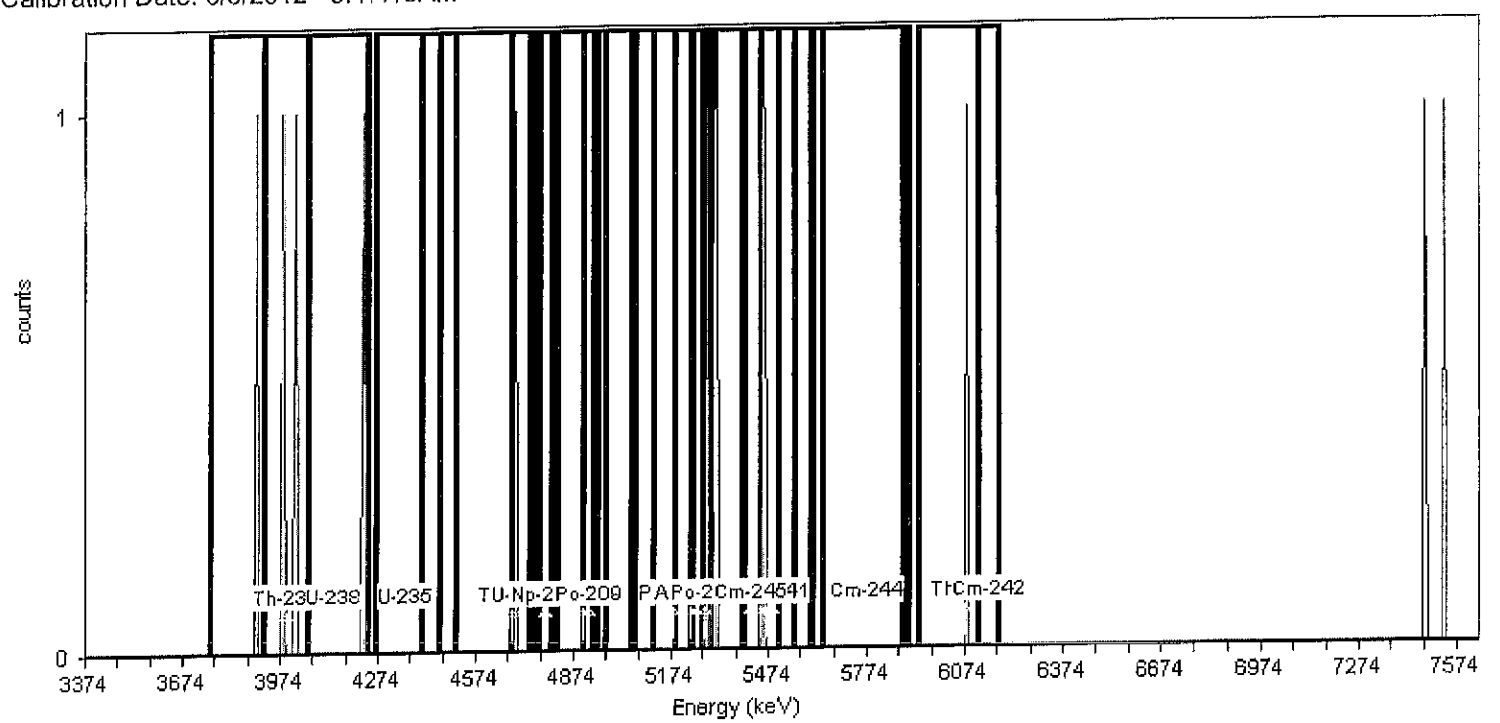
Analyst: 60040

Acquisition

Detector: AV119 , SN: 49-037G6
Acquisition Start Date: 7/24/2012 9:06:29PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9795;AV119-20120608
Calibration Date: 6/8/2012 8:47:13AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.55% +/- 0.35% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 13.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	3.00	3.125E-003	2.083E-003
U-238	4.14	3.92	4.24	3.00	3.125E-003	2.083E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	1.00	1.042E-003	1.473E-003
U-234	4.71	4.51	4.82	1.00	1.042E-003	1.473E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	0.00	0.000E+000	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	0.00	0.000E+000	1.473E-003
Am-243	5.23	5.05	5.31	2.00	2.083E-003	1.804E-003
U-232	5.25	5.06	5.40	3.00	3.125E-003	2.083E-003
Th-228	5.45	5.19	5.51	5.00	5.208E-003	2.552E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	5.00	5.208E-003	2.552E-003
Am-241	5.48	5.30	5.60	4.00	4.167E-003	2.329E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	0.00	0.000E+000	1.473E-003
Cm-244	5.78	5.64	5.90	0.00	0.000E+000	1.473E-003
Th-227	6.07	5.93	6.18	1.00	1.042E-003	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Monthly CCV
Alpha Vision
July 2012
AV1-146

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV1						
IC-7107;AV1-20120607	6/7/2012 3:02:16 PM	82232-334	0.2756	Pass		
CCV-7107;AV1-20120724	7/24/2012 1:37:50 PM	82232-334	0.2749	Pass	99.7401	Pass
AV2						
IC-8874;AV2-20120607	6/7/2012 3:02:23 PM	82233-334	0.2693	Pass		
CCV-8874;AV2-20120724	7/24/2012 1:38:06 PM	82233-334	0.2737	Pass	101.617	Pass
AV3						
IC-8875;AV3-20120607	6/7/2012 3:02:28 PM	82234-334	0.2857	Pass		
CCV-8875;AV3-20120724	7/24/2012 1:38:18 PM	82234-334	0.2813	Pass	98.4574	Pass
AV4						
IC-8876;AV4-20120607	6/7/2012 3:02:32 PM	82235-334	0.2793	Pass		
CCV-8876;AV4-20120724	7/24/2012 1:38:33 PM	82235-334	0.2759	Pass	98.7801	Pass
AV6						
IC-9520;AV6-20120607a	6/7/2012 3:56:30 PM	82237-334	0.2792	Pass		
CCV-9520;AV6-20120724	7/24/2012 1:38:57 PM	82237-334	0.2815	Pass	100.837	Pass
AV7						
IC-8879;AV7-20120607	6/7/2012 4:03:51 PM	82238-334	0.2731	Pass		
CCV-8879;AV7-20120724	7/24/2012 1:39:10 PM	82238-334	0.2696	Pass	98.7133	Pass
AV8						
IC-9792;AV8-20120607	6/7/2012 4:06:21 PM	82240-334	0.2787	Pass		
CCV-9792;AV8-20120724	7/24/2012 1:39:22 PM	82240-334	0.2791	Pass	100.131	Pass
AV9						
IC-9793;AV9-20120607	6/7/2012 4:06:26 PM	82241-334	0.2781	Pass		
CCV-9793;AV9-20120724	7/24/2012 1:39:34 PM	82241-334	0.2797	Pass	100.590	Pass
AV10						
IC-9794;AV10-20120621	6/21/2012 2:01:39 PM	82242-334	0.2725	Pass		
AV11						
IC-9795;AV11-20120607	6/7/2012 7:50:12 PM	82243-334	0.2751	Pass		
CCV-9795;AV11-20120724	7/24/2012 1:40:24 PM	82243-334	0.2762	Pass	100.416	Pass
AV12						
IC-9817;AV12-20120607	6/7/2012 7:50:16 PM	82244-334	0.2699	Pass		
CCV-9817;AV12-20120724	7/24/2012 1:40:35 PM	82244-334	0.2659	Pass	98.5073	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV13						
IC-9884;AV13-20120607	6/7/2012 7:50:19 PM	82245-334	0.2758	Pass		
CCV-9884;AV13-20120724	7/24/2012 1:40:46 PM	82245-334	0.2906	Pass	105.355	Fail
CCV-9884;AV13-20120724a	7/24/2012 5:02:56 PM	82245-334	0.2748	Pass	99.6538	Pass
CCV-9884;AV13-20120725	7/25/2012 11:44:29 AM	82245-334	0.2727	Pass	98.8754	Pass
AV14						
IC-9885;AV14-20120607	6/7/2012 7:50:22 PM	82246-334	0.2724	Pass		
CCV-9885;AV14-20120724	7/24/2012 1:41:00 PM	82246-334	0.2691	Pass	98.7814	Pass
AV15						
IC-9886;AV15-20120607	6/7/2012 7:50:24 PM	82247-334	0.2743	Pass		
CCV-9886;AV15-20120724	7/24/2012 1:41:10 PM	82247-334	0.2744	Pass	100.039	Pass
AV16						
IC-7107;AV16-20120607a	6/8/2012 12:12:55 AM	82232-334	0.2798	Pass		
CCV-7107;AV16-20120724	7/24/2012 5:03:06 PM	82232-334	0.2799	Pass	100.019	Pass
AV17						
IC-8874;AV17-20120607	6/8/2012 12:13:37 AM	82233-334	0.2631	Pass		
CCV-8874;AV17-20120724	7/24/2012 5:03:21 PM	82233-334	0.2669	Pass	101.451	Pass
AV18						
IC-8875;AV18-20120607	6/8/2012 12:13:58 AM	82234-334	0.2748	Pass		
CCV-8875;AV18-20120724	7/24/2012 5:05:40 PM	82234-334	0.2730	Pass	99.3381	Pass
AV19						
IC-8876;AV19-20120607	6/8/2012 12:14:05 AM	82235-334	0.2694	Pass		
CCV-8876;AV19-20120724	7/24/2012 5:03:44 PM	82235-334	0.2681	Pass	99.5055	Pass
AV20						
IC-8877;AV20-20120607	6/7/2012 7:50:28 PM	82236-334	0.2703	Pass		
CCV-8877;AV20-20120724	7/24/2012 1:38:45 PM	82236-334	0.2677	Pass	99.0551	Pass
AV21						
IC-9520;AV21-20120607	6/8/2012 12:14:09 AM	82237-334	0.2708	Pass		
CCV-9520;AV21-20120724	7/24/2012 5:03:53 PM	82237-334	0.2734	Pass	100.966	Pass
AV22						
IC-8879;AV22-20120607	6/8/2012 12:14:14 AM	82238-334	0.2679	Pass		
CCV-8879;AV22-20120724	7/24/2012 5:04:03 PM	82238-334	0.2639	Pass	98.5154	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV23						
IC-9792;AV23-20120607	6/8/2012 12:14:18 AM	82240-334	0.2673	Pass		
CCV-9792;AV23-20120724	7/24/2012 5:04:14 PM	82240-334	0.2688	Pass	100.552	Pass
AV24						
IC-9793;AV24-20120607	6/8/2012 12:14:21 AM	82241-334	0.2734	Pass		
CCV-9793;AV24-20120724	7/24/2012 5:04:24 PM	82241-334	0.2766	Pass	101.156	Pass
AV43						
IC-9794;AV43-20120607	6/7/2012 7:50:31 PM	82242-334	0.2699	Pass		
CCV-9794;AV43-20120725	7/25/2012 10:28:07 PM	82242-334	0.2686	Pass	99.5158	Pass
AV44						
IC-9795;AV44-20120610	6/11/2012 3:27:57 PM	82243-334	0.2664	Pass		
CCV-9795;AV44-20120725	7/25/2012 10:28:12 PM	82243-334	0.2682	Pass	100.672	Pass
AV45						
IC-9817;AV45-20120610	6/11/2012 3:28:22 PM	82244-334	0.2704	Pass		
CCV-9817;AV45-20120725	7/25/2012 10:28:16 PM	82244-334	0.0001	Eval	5.53444	Fail
AV46						
IC-9884;AV46-20120610	6/11/2012 3:28:47 PM	82245-334	0.2849	Pass		
CCV-9884;AV46-20120725	7/25/2012 10:28:19 PM	82245-334	0.2804	Pass	98.4164	Pass
AV47						
IC-9885;AV47-20120611a	6/12/2012 1:04:12 AM	82246-334	0.2678	Pass		
AV48						
IC-9886;AV48-20120610	6/11/2012 3:29:40 PM	82247-334	0.2764	Pass		
CCV-9886;AV48-20120725	7/25/2012 10:28:31 PM	82247-334	0.0004	Eval	0.13021	Fail
AV49						
IC-7107;AV49-20120610	6/10/2012 8:17:41 PM	82232-334	0.2927	Pass		
CCV-7107;AV49-20120725	7/25/2012 10:28:34 PM	82232-334	0.2909	Pass	99.3834	Pass
AV50						
IC-8874;AV50-20120610	6/10/2012 8:17:58 PM	82233-334	0.2754	Pass		
CCV-8874;AV50-20120726	7/26/2012 1:58:10 PM	82233-334	0.2729	Pass	99.0921	Pass
AV51						
IC-8875;AV51-20120610	6/10/2012 8:18:12 PM	82234-334	0.2819	Pass		
CCV-8875;AV51-20120725	7/25/2012 10:28:38 PM	82234-334	0.2814	Pass	99.8447	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV52						
IC-8876;AV52-20120610	6/10/2012 8:18:26 PM	82235-334	0.2911	Pass		
CCV-8876;AV52-20120726	7/26/2012 1:58:30 PM	82235-334	0.2925	Pass	100.496	Pass
AV53						
IC-8877;AV53-20120610	6/10/2012 8:18:38 PM	82236-334	0.2773	Pass		
CCV-8877;AV53-20120725	7/25/2012 10:28:41 PM	82236-334	0.2775	Pass	100.055	Pass
AV54						
IC-9520;AV54-20120610	6/10/2012 8:18:52 PM	82237-334	0.2798	Pass		
CCV-9520;AV54-20120726	7/26/2012 1:58:49 PM	82237-334	0.2760	Pass	98.6444	Pass
AV55						
IC-8879;AV55-20120610	6/10/2012 8:19:03 PM	82238-334	0.2720	Pass		
CCV-8879;AV55-20120725	7/25/2012 10:28:45 PM	82238-334	0.2697	Pass	99.1518	Pass
AV56						
IC-9792;AV56-20120610	6/10/2012 8:19:16 PM	82240-334	0.2709	Pass		
CCV-9792;AV56-20120725	7/25/2012 10:28:48 PM	82240-334	0.0003	Eval	0.11605	Fail
AV57						
IC-9793;AV57-20120610	6/10/2012 8:19:29 PM	82241-334	0.2764	Pass		
CCV-9793;AV57-20120725	7/25/2012 10:28:52 PM	82241-334	0.2763	Pass	99.9520	Pass
AV58						
IC-9794;AV58-20120610	6/10/2012 8:19:36 PM	82242-334	0.2550	Pass		
AV59						
IC-9795;AV59-20120610	6/10/2012 8:19:39 PM	82243-334	0.2753	Pass		
AV60						
IC-9817;AV60-20120610	6/10/2012 8:19:43 PM	82244-334	0.2682	Pass		
CCV-9817;AV60-20120725a	7/26/2012 12:42:30 AM	82244-334	0.2705	Pass	100.836	Pass
AV61						
IC-9884;AV61-20120610	6/10/2012 8:19:46 PM	82245-334	0.2792	Pass		
CCV-9884;AV61-20120725	7/26/2012 12:42:24 AM	82245-334	0.2785	Pass	99.7356	Pass
AV62						
IC-9885;AV62-20120610	6/10/2012 8:19:49 PM	82246-334	0.2742	Pass		
CCV-9885;AV62-20120725	7/26/2012 12:42:33 AM	82246-334	0.2738	Pass	99.8594	Pass
AV63						
IC-9886;AV63-20120610	6/10/2012 8:19:57 PM	82247-334	0.2707	Pass		
CCV-9886;AV63-20120725	7/26/2012 12:42:36 AM	82247-334	0.2716	Pass	100.323	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV64						
IC-7107;AV64-20120610	6/11/2012 3:30:09 PM	82232-334	0.2935	Pass		
CCV-7107;AV64-20120726	7/26/2012 1:58:00 PM	82232-334	0.2935	Pass	99.9978	Pass
AV65						
IC-8874;AV65-20120610	6/11/2012 3:30:33 PM	82233-334	0.2759	Pass		
CCV-8874;AV65-20120725	7/25/2012 10:28:56 PM	82233-334	0.2745	Pass	99.4624	Pass
AV66						
IC-8875;AV66-20120610	6/11/2012 3:30:58 PM	82234-334	0.2846	Pass		
CCV-8875;AV66-20120725	7/26/2012 12:42:39 AM	82234-334	0.2809	Pass	98.6783	Pass
AV67						
IC-8876;AV67-20120610	6/11/2012 3:31:27 PM	82235-334	0.2953	Pass		
CCV-8876;AV67-20120726	7/26/2012 5:34:37 PM	82235-334	0.2975	Pass	100.722	Pass
AV68						
IC-8877;AV68-20120610	6/11/2012 3:31:53 PM	82236-334	0.2740	Pass		
CCV-8877;AV68-20120725	7/26/2012 12:42:42 AM	82236-334	0.2748	Pass	100.313	Pass
AV69						
IC-9520;AV69-20120610	6/11/2012 3:32:14 PM	82237-334	0.2763	Pass		
CCV-9520;AV69-20120725	7/25/2012 10:29:25 PM	82237-334	0.2730	Pass	98.8075	Pass
AV70						
IC-8879;AV70-20120610	6/11/2012 3:32:41 PM	82238-334	0.2732	Pass		
CCV-8879;AV70-20120725	7/26/2012 12:42:45 AM	82238-334	0.2708	Pass	99.1119	Pass
AV71						
IC-9792;AV71-20120610	6/11/2012 3:33:08 PM	82240-334	0.2763	Pass		
CCV-9792;AV71-20120725	7/26/2012 12:42:50 AM	82240-334	0.2755	Pass	99.7117	Pass
AV72						
IC-9793;AV72-20120610	6/11/2012 3:33:25 PM	82241-334	0.2910	Pass		
CCV-9793;AV72-20120725	7/26/2012 12:42:53 AM	82241-334	0.2858	Pass	98.2175	Pass
AV73						
IC-9794;AV73-20120610	6/11/2012 3:33:47 PM	82242-334	0.2766	Pass		
CCV-9794;AV73-20120725	7/26/2012 12:42:56 AM	82242-334	0.2759	Pass	99.7532	Pass
AV74						
IC-9795;AV74-20120611a	6/12/2012 1:04:18 AM	82243-334	0.2701	Pass		
CCV-9795;AV74-20120726	7/26/2012 8:37:17 AM	82243-334	0.2731	Pass	101.096	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV75						
IC-9817;AV75-20120611a	6/12/2012 1:04:21 AM	82244-334	0.2656	Pass		
CCV-9817;AV75-20120724	7/24/2012 8:51:29 PM	82244-334	0.2666	Pass	100.388	Pass
AV76						
IC-9884;AV76-20120611a	6/12/2012 1:04:24 AM	82245-334	0.2723	Pass		
CCV-9884;AV76-20120724a	7/24/2012 10:38:47 PM	82245-334	0.2757	Pass	101.240	Pass
AV77						
IC-9885;AV77-20120612	6/12/2012 10:16:22 PM	82246-334	0.2674	Pass		
CCV-9885;AV77-20120724	7/24/2012 8:51:53 PM	82246-334	0.2687	Pass	100.497	Pass
AV78						
IC-9886;AV78-20120611a	6/12/2012 1:04:27 AM	82247-334	0.2751	Pass		
CCV-9886;AV78-20120724	7/24/2012 8:51:41 PM	82247-334	0.2748	Pass	99.8636	Pass
AV79						
IC-7107;AV79-20120611a	6/12/2012 1:04:30 AM	82232-334	0.2824	Pass		
CCV-7107;AV79-20120724	7/24/2012 8:51:57 PM	82232-334	0.2837	Pass	100.462	Pass
AV80						
IC-8874;AV80-20120611a	6/12/2012 1:04:34 AM	82233-334	0.2692	Pass		
CCV-8874;AV80-20120724	7/24/2012 8:51:46 PM	82233-334	0.2697	Pass	100.177	Pass
AV81						
IC-8875;AV81-20120611a	6/12/2012 1:04:37 AM	82234-334	0.2858	Pass		
CCV-8875;AV81-20120724	7/24/2012 8:51:49 PM	82234-334	0.2899	Pass	101.429	Pass
AV82						
IC-8876;AV82-20120611a	6/12/2012 1:04:40 AM	82235-334	0.2768	Pass		
CCV-8876;AV82-20120724	7/24/2012 8:52:00 PM	82235-334	0.2737	Pass	98.8822	Pass
AV83						
IC-8877;AV83-20120611a	6/12/2012 1:04:44 AM	82236-334	0.2727	Pass		
CCV-8877;AV83-20120724	7/24/2012 8:52:04 PM	82236-334	0.2757	Pass	101.099	Pass
AV84						
IC-9520;AV84-20120611a	6/12/2012 1:04:47 AM	82237-334	0.2790	Pass		
CCV-9520;AV84-20120724	7/24/2012 8:52:07 PM	82237-334	0.2748	Pass	98.4876	Pass
AV85						
IC-8879;AV85-20120611a	6/12/2012 1:04:50 AM	82238-334	0.2774	Pass		
CCV-8879;AV85-20120724	7/24/2012 8:52:11 PM	82238-334	0.2782	Pass	100.258	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV86						
IC-9792;AV86-20120611a	6/12/2012 1:04:54 AM	82240-334	0.2769	Pass		
CCV-9792;AV86-20120724	7/24/2012 8:52:16 PM	82240-334	0.2771	Pass	100.046	Pass
AV87						
IC-9793;AV87-20120611a	6/12/2012 1:04:56 AM	82241-334	0.2951	Pass		
CCV-9793;AV87-20120724	7/24/2012 8:52:20 PM	82241-334	0.2909	Pass	98.5861	Pass
AV88						
IC-9794;AV88-20120611a	6/12/2012 1:04:59 AM	82242-334	0.2744	Pass		
CCV-9794;AV88-20120724	7/24/2012 5:04:33 PM	82242-334	0.2741	Pass	99.8889	Pass
AV89						
IC-9795;AV89-20120612	6/12/2012 3:39:24 PM	82243-334	0.2684	Pass		
CCV-9795;AV89-20120724	7/24/2012 5:04:44 PM	82243-334	0.2679	Pass	99.8091	Pass
AV90						
IC-9817;AV90-20120612	6/12/2012 3:39:50 PM	82244-334	0.2731	Pass		
CCV-9817;AV90	7/24/2012 5:05:02 PM	82244-334	0.2721	Pass	99.6298	Pass
AV91						
IC-9884;AV91-20120612	6/12/2012 3:40:10 PM	82245-334	0.2787	Pass		
CCV-9884;AV91-20120724	7/24/2012 11:50:47 PM	82245-334	0.2800	Pass	100.497	Pass
AV92						
IC-9885;AV92-20120613	6/13/2012 10:43:01 AM	82246-334	0.2705	Pass		
CCV-9885;AV92-20120724	7/24/2012 5:08:08 PM	82246-334	0.2723	Pass	100.677	Pass
AV93						
IC-9886;AV93-20120612	6/12/2012 3:40:55 PM	82247-334	0.2715	Pass		
CCV-9886;AV93-20120724	7/24/2012 5:08:42 PM	82247-334	0.2720	Pass	100.196	Pass
AV94						
IC-7107;AV94-20120612a	6/12/2012 3:41:17 PM	82232-334	0.2797	Pass		
CCV-7107;AV94-20120724	7/24/2012 10:38:52 PM	82232-334	0.2772	Pass	99.0992	Pass
AV95						
IC-8874;AV95-20120608	6/8/2012 8:45:55 AM	82233-334	0.2719	Pass		
CCV-8874;AV95-20120724	7/24/2012 10:38:55 PM	82233-334	0.2708	Pass	99.6240	Pass
AV96						
IC-8875;AV96-20120612	6/12/2012 3:41:40 PM	82234-334	0.2831	Pass		
CCV-8875;;AV96-20120724	7/24/2012 10:39:01 PM	82234-334	0.0004	Eval	0.14859	Fail

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV97						
IC-8876;AV97-20120612a	6/12/2012 10:16:26 PM	82235-334	0.2765	Pass		
CCV-8876;;AV97-20120724	7/24/2012 10:39:04 PM	82235-334	0.2779	Pass	100.508	Pass
AV98						
IC-8877;AV98-20120608	6/8/2012 8:46:02 AM	82236-334	0.2818	Pass		
CCV-8877;AV98-20120724	7/24/2012 5:06:05 PM	82236-334	0.2793	Pass	99.1155	Pass
AV99						
IC-9520;AV99-20120608	6/8/2012 8:46:10 AM	82237-334	0.2703	Pass		
AV100						
IC-8879;AV100-20120608	6/8/2012 8:46:24 AM	82238-334	0.2719	Pass		
CCV-8879;AV100-20120726	7/26/2012 1:58:58 PM	82238-334	0.2703	Pass	99.4168	Pass
AV101						
IC-9792;AV101-20120608	6/8/2012 8:46:34 AM	82240-334	0.2802	Pass		
CCV-9792;AV101-20120726	7/26/2012 8:37:09 AM	82240-334	0.2787	Pass	99.4560	Pass
AV102						
IC-9793;AV102-20120608	6/8/2012 8:46:41 AM	82241-334	0.2826	Pass		
CCV-9793;AV102-20120726	7/26/2012 8:37:21 AM	82241-334	0.2794	Pass	98.8711	Pass
AV103						
IC-9794;AV103-20120607	6/8/2012 12:14:29 AM	82242-334	0.2709	Pass		
CCV-9794;AV103-20120726	7/26/2012 1:59:26 PM	82242-334	0.2718	Pass	100.319	Pass
AV104						
IC-9795;AV104-20120607	6/8/2012 12:14:40 AM	82243-334	0.2646	Pass		
CCV-9795;AV104-20120726	7/26/2012 1:59:37 PM	82243-334	0.0056	Eval	2.11169	Fail
AV105						
IC-9817;AV105-20120607	6/8/2012 12:14:48 AM	82244-334	0.2474	Pass		
CCV-9817;AV10520120726	7/26/2012 1:59:46 PM	82244-334	0.2451	Pass	99.0547	Pass
AV106						
IC-9884;AV106-20120607	6/8/2012 12:15:09 AM	82245-334	0.2797	Pass		
CCV-9884;AV106-20120726	7/26/2012 1:59:55 PM	82245-334	0.2758	Pass	98.5711	Pass
AV107						
IC-9885;AV107-20120607	6/8/2012 12:14:52 AM	82246-334	0.2711	Pass		
CCV-9885;AV107-20120726	7/26/2012 2:00:04 PM	82246-334	0.2733	Pass	100.841	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV108						
IC-9886;AV108-20120607	6/8/2012 12:14:56 AM	82247-334	0.2812	Pass		
CCV-9886;AV108-20120726	7/26/2012 2:00:19 PM	82247-334	0.2814	Pass	100.046	Pass
AV109						
IC-7107;AV109-20120608	6/8/2012 8:46:47 AM	82232-334	0.2782	Pass		
CCV-7107;AV109-20120725	7/26/2012 12:42:58 AM	82232-334	0.2245	Pass	80.7030	Fail
CCV-7107;AV109-20120726	7/26/2012 5:32:41 PM	82232-334	0.2819	Pass	101.326	Pass
CCV-7107;AV109-20120726a	7/26/2012 7:44:53 PM	82232-334	0.2763	Pass	99.3002	Pass
AV111						
IC-8875;AV111-20120608	6/8/2012 8:46:55 AM	82234-334	0.2800	Pass		
CCV-8875;AV111-20120726	7/26/2012 8:37:25 AM	82234-334	0.2787	Pass	99.5396	Pass
AV112						
IC-8876;AV112-20120608	6/8/2012 8:47:01 AM	82235-334	0.2750	Pass		
CCV-8876;AV112-20120725	7/25/2012 10:31:58 PM	82235-334	0.2735	Pass	99.4658	Pass
AV113						
IC-8877;AV113-20120607	6/8/2012 12:15:02 AM	82236-334	0.2765	Pass		
CCV-8877;AV113-20120726	7/26/2012 8:37:29 AM	82236-334	0.2772	Pass	100.255	Pass
AV114						
IC-9520;AV114-20120612	6/12/2012 3:42:22 PM	82237-334	0.2746	Pass		
CCV-9520;AV114-20120726	7/26/2012 5:34:48 PM	82237-334	0.2758	Pass	100.401	Pass
AV115						
IC-8879;AV115-20120612	6/12/2012 3:42:43 PM	82238-334	0.2756	Pass		
CCV-8879;AV115-20120726	7/26/2012 5:34:59 PM	82238-334	0.2762	Pass	100.213	Pass
AV116						
IC-9792;AV116-20120612	6/12/2012 3:43:02 PM	82240-334	0.2914	Pass		
CCV-9792;AV116-20120726	7/26/2012 1:59:07 PM	82240-334	0.2773	Pass	95.1508	Pass
AV117						
IC-9793;AV117-20120612	6/12/2012 3:43:27 PM	82241-334	0.2628	Pass		
CCV-9793;AV117-20120726	7/26/2012 1:59:16 PM	82241-334	0.2683	Pass	102.098	Pass
AV118						
IC-9794;AV118-20120608	6/8/2012 8:47:07 AM	82242-334	0.2728	Pass		
CCV-9794;AV118-20120726	7/26/2012 8:37:33 AM	82242-334	0.2689	Pass	98.5708	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV119						
IC-9795;AV119-20120608	6/8/2012 8:47:13 AM	82243-334	0.2655	Pass		
CCV-9795;AV119-20120726	7/26/2012 10:05:57 PM	82243-334	0.2655	Pass	99.9791	Pass
AV120						
IC-9817;AV120-20120608	6/8/2012 8:47:18 AM	82244-334	0.2668	Pass		
CCV-9817;AV120-20120726	7/26/2012 8:37:37 AM	82244-334	0.2689	Pass	100.796	Pass
AV121						
IC-9884;AV121-20120608	6/8/2012 8:54:38 AM	82245-334	0.2825	Pass		
CCV-9884;AV121-20120726	7/26/2012 8:37:41 AM	82245-334	0.2811	Pass	99.4897	Pass
AV122						
IC-9885;AV122-20120608	6/8/2012 8:54:44 AM	82246-334	0.2678	Pass		
CCV-9885;AV122-20120726	7/26/2012 8:37:46 AM	82246-334	0.2712	Pass	101.254	Pass
AV123						
IC-9886;AV123-20120614	6/15/2012 11:45:44 AM	82247-334	0.2691	Pass		
CCV-9886;AV123-20120726	7/26/2012 8:37:50 AM	82247-334	0.2654	Pass	98.6278	Pass
AV124						
IC-7107;AV124-20120614	6/15/2012 11:46:08 AM	82232-334	0.2653	Pass		
CCV-7107;AV124-20120726	7/26/2012 10:16:23 PM	82232-334	0.2661	Pass	100.282	Pass
AV125						
IC-8874;AV125-20120614	6/15/2012 11:46:45 AM	82233-334	0.2675	Pass		
CCV-8874;AV125-20120725	7/26/2012 12:43:01 AM	82233-334	0.2694	Pass	100.701	Pass
AV126						
IC-8875;AV126-20120614	6/15/2012 11:47:26 AM	82234-334	0.2760	Pass		
CCV-8875;AV126-20120726	7/26/2012 1:58:20 PM	82234-334	0.2746	Pass	99.5062	Pass
AV127						
IC-8876;AV127-20120614	6/15/2012 11:48:11 AM	82235-334	0.2775	Pass		
CCV-8876;AV127-20120725	7/26/2012 12:43:05 AM	82235-334	0.0003	Eval	0.11569	Fail
AV128						
IC-8877;AV128-20120614	6/15/2012 11:48:54 AM	82236-334	0.2685	Pass		
CCV-8877;AV128-20120726	7/26/2012 1:58:40 PM	82236-334	0.0003	Eval	0.11553	Fail
AV129						
IC-9520;AV12920120614	6/15/2012 11:49:36 AM	82237-334	0.2710	Pass		
CCV-9520;AV129-20120725	7/26/2012 12:43:08 AM	82237-334	0.2730	Pass	100.742	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV130						
IC-8879;AV130-20120614	6/15/2012 11:50:34 AM	82238-334	0.2707	Pass		
CCV-8879;AV130-20120726	7/26/2012 8:37:58 AM	82238-334	0.2711	Pass	100.151	Pass
AV131						
IC-9792;AV131-20120612	6/12/2012 10:16:29 PM	82240-334	0.2777	Pass		
CCV-9792;AV131-20120726	7/26/2012 7:43:47 PM	82240-334	0.2754	Pass	99.1770	Pass
AV132						
IC-9793;AV132-20120612	6/12/2012 10:16:32 PM	82241-334	0.2711	Pass		
CCV-9793;AV132-20120726	7/26/2012 5:35:09 PM	82241-334	0.2728	Pass	100.644	Pass
AV133						
IC-9794;AV133-20120612	6/12/2012 3:43:51 PM	82242-334	0.2627	Pass		
CCV-9794;AV133-20120726	7/26/2012 7:43:55 PM	82242-334	0.2629	Pass	100.084	Pass
AV134						
IC-9795;AV134-20120612	6/12/2012 10:16:35 PM	82243-334	0.2665	Pass		
CCV-9795;AV134-20120726	7/26/2012 7:44:04 PM	82243-334	0.2637	Pass	98.9425	Pass
AV135						
IC-9817;AV135-20120612	6/12/2012 10:16:38 PM	82244-334	0.2610	Pass		
CCV-9817;AV135-20120726	7/26/2012 7:44:16 PM	82244-334	0.2622	Pass	100.442	Pass
AV136						
IC-9884;AV136-20120612	6/12/2012 10:16:41 PM	82245-334	0.2745	Pass		
CCV-9884;AV13620120726	7/26/2012 7:44:27 PM	82245-334	0.2725	Pass	99.2766	Pass
AV137						
IC-9885;AV137-20120621	6/21/2012 2:01:56 PM	82246-334	0.2674	Pass		
CCV-9885;AV137-20120726	7/26/2012 7:44:35 PM	82246-334	0.2648	Pass	99.0375	Pass
AV138						
IC-9886;AV138-20120608	6/8/2012 8:55:45 AM	82247-334	0.2683	Pass		
CCV-9886;AV138-20120726	7/26/2012 7:44:43 PM	82247-334	0.2672	Pass	99.5864	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Monthly Backgrounds
Alpha Vision
July 2012
AV1-146

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:14:01PM 7/25/2012

Sample

Sample Name: ICB;AV120
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

Analyst: 60040

Acquisition

Detector: AV120 , SN: 49-037W3
Acquisition Start Date: 7/24/2012 9:06:31PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9817;AV120-20120608
Calibration Date: 6/8/2012 8:47:18AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.68% +/- 0.32% TPU(2 sigma)

General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 13.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	2.00	2.083E-003	1.804E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	1.00	1.042E-003	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	1.00	1.042E-003	1.473E-003
U-232	5.25	5.06	5.40	1.00	1.042E-003	1.473E-003
Th-228	5.45	5.19	5.51	3.00	3.125E-003	2.083E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	2.00	2.083E-003	1.804E-003
Am-241	5.48	5.30	5.60	2.00	2.083E-003	1.804E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	0.00	0.000E+000	1.473E-003
Cm-244	5.78	5.64	5.90	0.00	0.000E+000	1.473E-003
Th-227	6.07	5.93	6.18	1.00	1.042E-003	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:14:07PM 7/25/2012

Sample

Sample Name: ICB;AV121
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

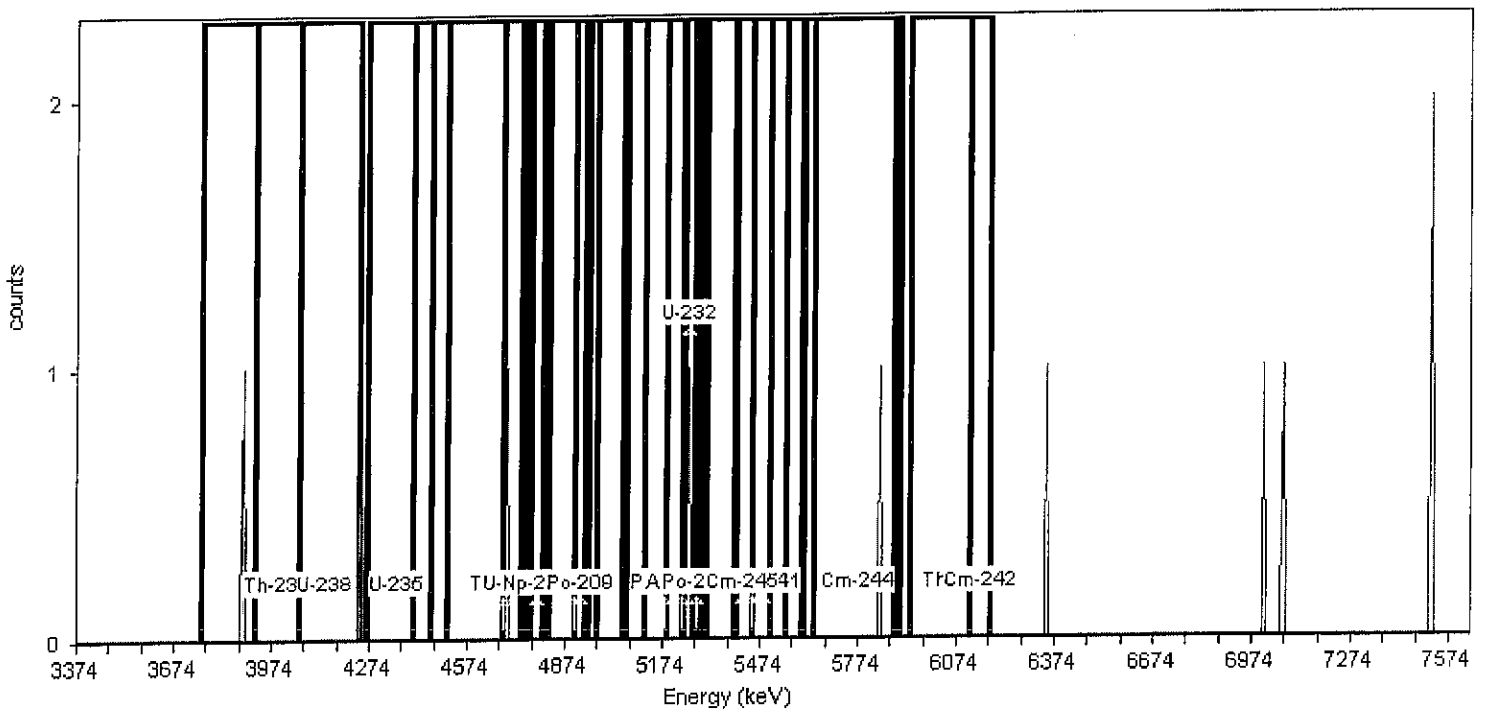
Analyst: 60040

Acquisition

Detector: AV121 , SN: 49-037W2
Acquisition Start Date: 7/24/2012 9:06:32PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9884;AV121-20120608
Calibration Date: 6/8/2012 8:54:38AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 28.25% +/- 0.39% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 10.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	0.00	0.000E+000	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	1.00	1.042E-003	1.473E-003
U-234	4.71	4.51	4.82	1.00	1.042E-003	1.473E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	0.00	0.000E+000	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	0.00	0.000E+000	1.473E-003
Am-243	5.23	5.05	5.31	1.00	1.042E-003	1.473E-003
U-232	5.25	5.06	5.40	1.00	1.042E-003	1.473E-003
Th-228	5.45	5.19	5.51	1.00	1.042E-003	1.473E-003
Po-210	5.28	5.23	5.29	1.00	1.042E-003	1.473E-003
Pu-238	5.47	5.27	5.55	0.00	0.000E+000	1.473E-003
Am-241	5.48	5.30	5.60	0.00	0.000E+000	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	1.00	1.042E-003	1.473E-003
Cm-244	5.78	5.64	5.90	1.00	1.042E-003	1.473E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:14:12PM 7/25/2012

Sample

Sample Name: ICB;AV122
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

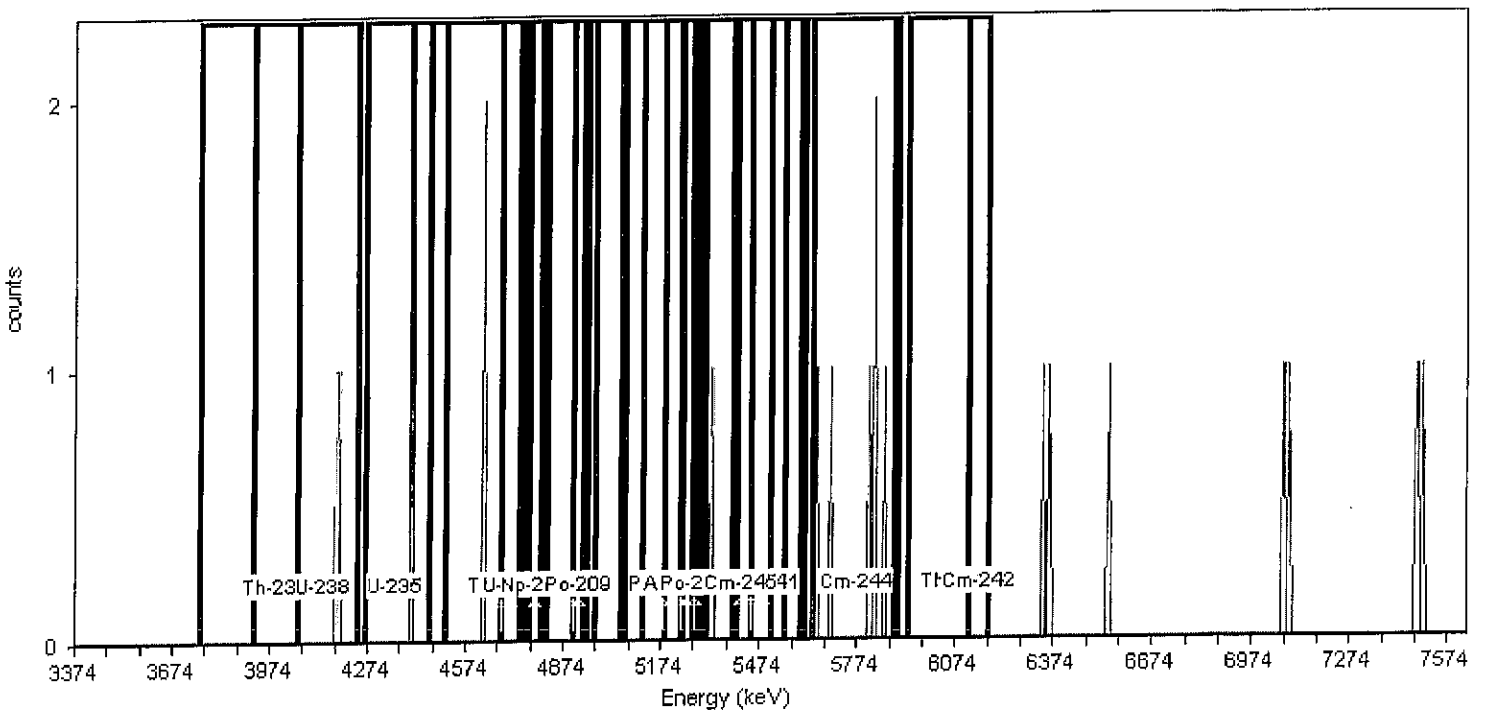
Analyst: 60040

Acquisition

Detector: AV122 , SN: 49-037G4
Acquisition Start Date: 7/24/2012 9:06:33PM
Live Time: 960.00 min.
Real Time: 960.01 min.
Calibration Name: IC-9885;AV122-20120608
Calibration Date: 6/8/2012 8:54:44AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.78% +/- 0.39% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 21.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	2.00	2.083E-003	1.804E-003
U-235	4.36	4.26	4.46	1.00	1.042E-003	1.473E-003
Th-230	4.68	4.40	4.75	3.00	3.125E-003	2.083E-003
U-234	4.71	4.51	4.82	2.00	2.083E-003	1.804E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	0.00	0.000E+000	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	0.00	0.000E+000	1.473E-003
Am-243	5.23	5.05	5.31	0.00	0.000E+000	1.473E-003
U-232	5.25	5.06	5.40	1.00	1.042E-003	1.473E-003
Th-228	5.45	5.19	5.51	1.00	1.042E-003	1.473E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	1.00	1.042E-003	1.473E-003
Am-241	5.48	5.30	5.60	1.00	1.042E-003	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	6.00	6.250E-003	2.756E-003
Cm-244	5.78	5.64	5.90	6.00	6.250E-003	2.756E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:14:18PM 7/25/2012

Sample

Sample Name: ICB;AV123
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

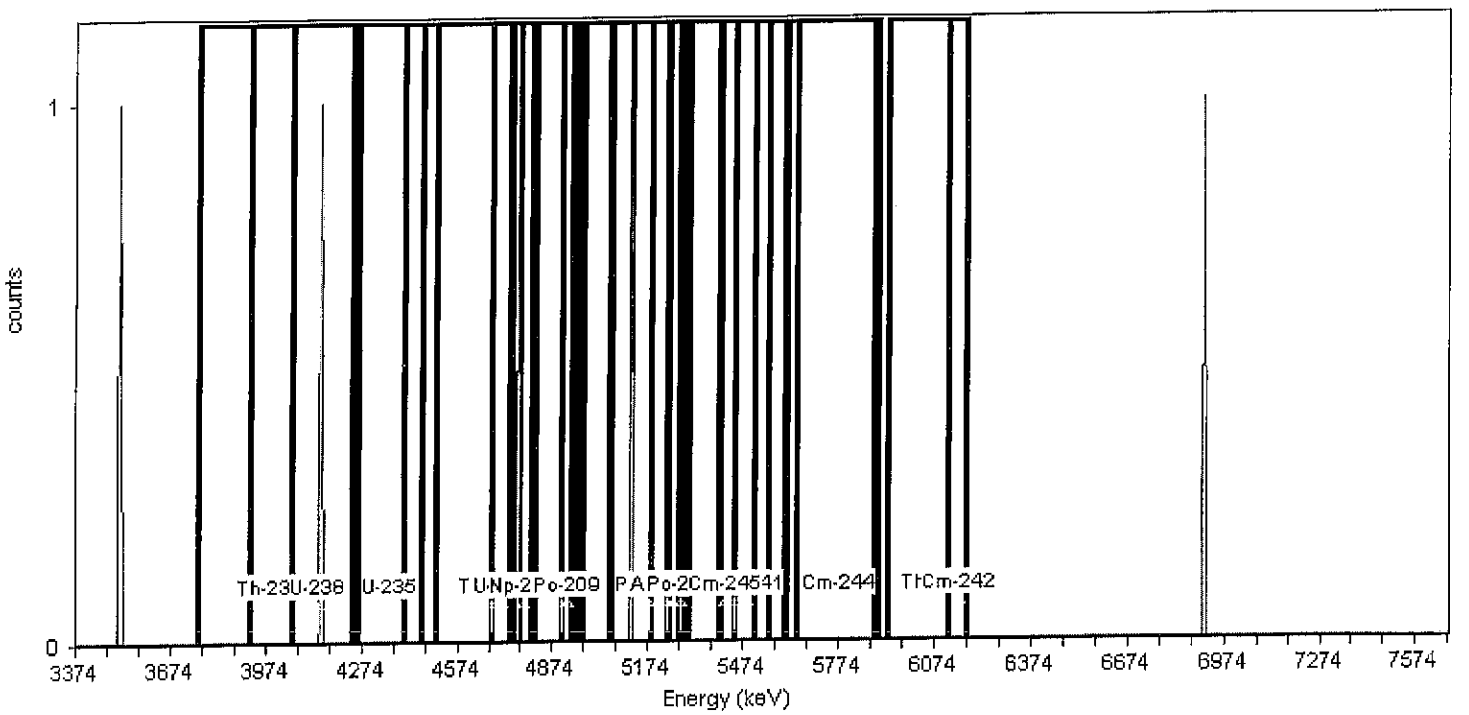
Analyst: 60040

Acquisition

Detector: AV123 , SN: 49-179C1
Acquisition Start Date: 7/24/2012 9:06:35PM
Live Time: 960.00 min.
Real Time: 960.10 min.
Calibration Name: IC-9886;AV123-20120614
Calibration Date: 6/15/2012 11:45:44AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.91% +/- 0.36% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 5.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	1.00	1.042E-003	1.473E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	1.00	1.042E-003	1.473E-003
U-232	5.25	5.06	5.40	1.00	1.042E-003	1.473E-003
Th-228	5.45	5.19	5.51	0.00	0.000E+000	1.473E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	0.00	0.000E+000	1.473E-003
Am-241	5.48	5.30	5.60	0.00	0.000E+000	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	0.00	0.000E+000	1.473E-003
Cm-244	5.78	5.64	5.90	0.00	0.000E+000	1.473E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:14:24PM 7/25/2012

Sample

Sample Name: ICB;AV124
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

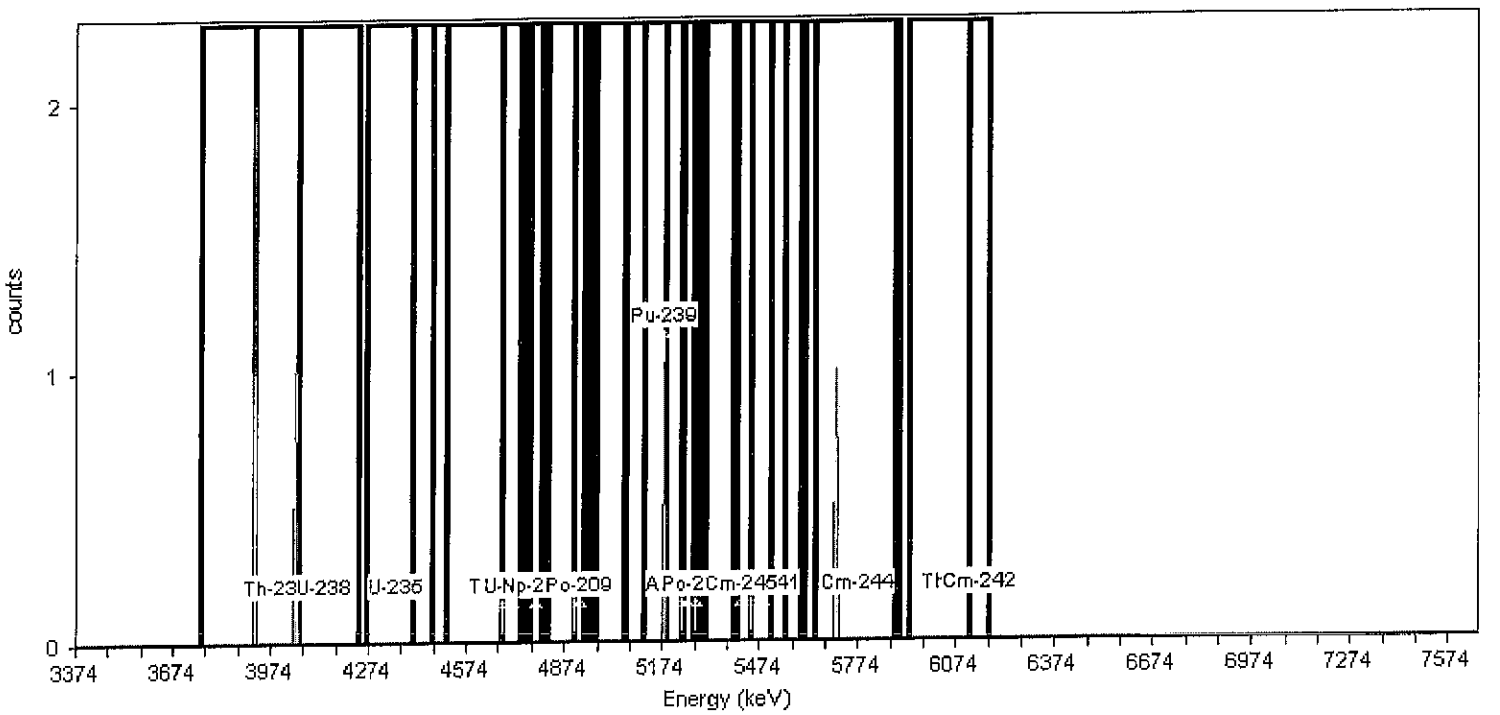
Analyst: 60040

Acquisition

Detector: AV124 , SN: 49-179C2
Acquisition Start Date: 7/24/2012 9:06:37PM
Live Time: 960.00 min.
Real Time: 960.10 min.
Calibration Name: IC-7107;AV124-20120614
Calibration Date: 6/15/2012 11:46:08AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.53% +/- 0.30% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 5.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	3.00	3.125E-003	2.083E-003
U-238	4.14	3.92	4.24	3.00	3.125E-003	2.083E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	0.00	0.000E+000	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	1.00	1.042E-003	1.473E-003
U-232	5.25	5.06	5.40	1.00	1.042E-003	1.473E-003
Th-228	5.45	5.19	5.51	0.00	0.000E+000	1.473E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	0.00	0.000E+000	1.473E-003
Am-241	5.48	5.30	5.60	0.00	0.000E+000	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	1.00	1.042E-003	1.473E-003
Cm-244	5.78	5.64	5.90	1.00	1.042E-003	1.473E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:14:30PM 7/25/2012

Sample

Sample Name: ICB;AV125
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

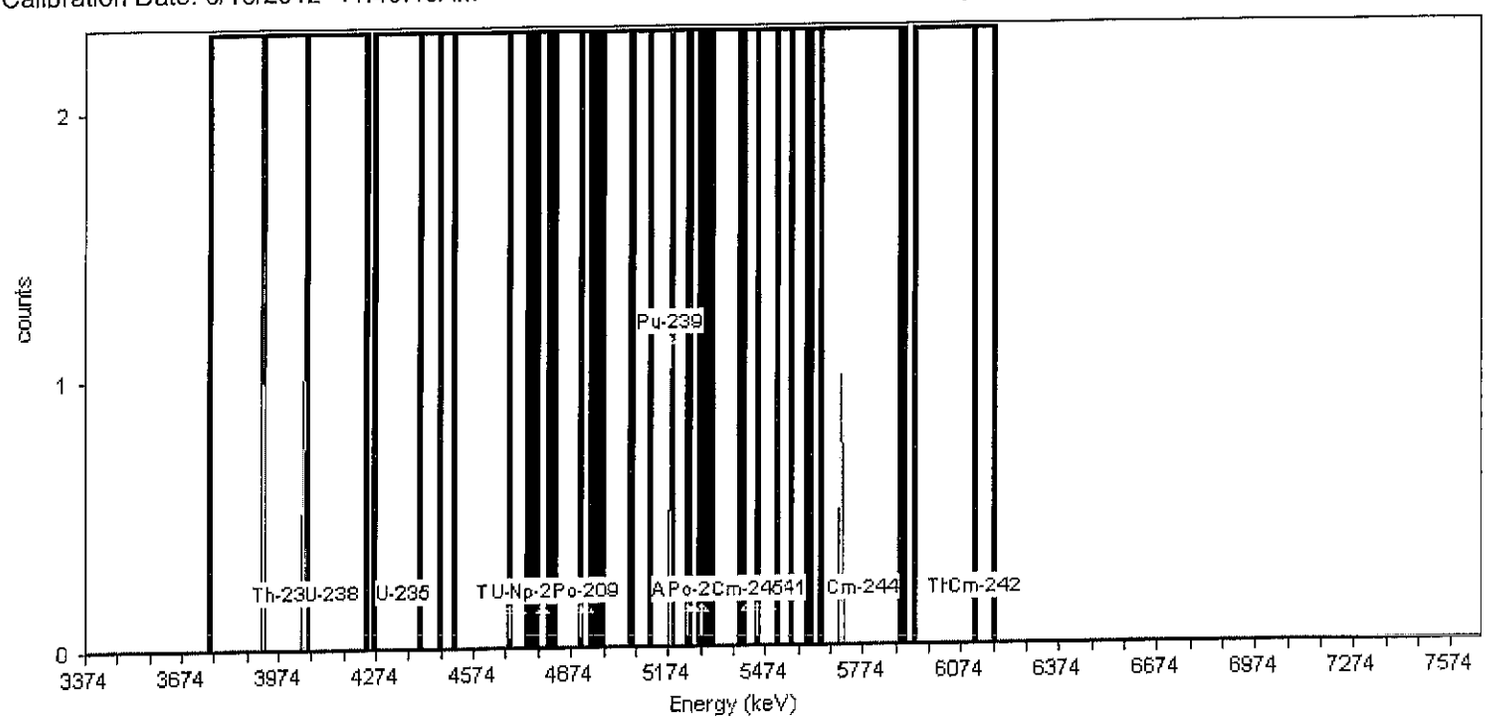
Analyst: 60040

Acquisition

Detector: AV125 , SN: 49-179C3
Acquisition Start Date: 7/24/2012 9:06:39PM
Live Time: 960.00 min.
Real Time: 960.10 min.
Calibration Name: IC-8874;AV125-20120614
Calibration Date: 6/15/2012 11:46:45AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.75% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 6.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	0.00	0.000E+000	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	0.00	0.000E+000	1.473E-003
Am-243	5.23	5.05	5.31	0.00	0.000E+000	1.473E-003
U-232	5.25	5.06	5.40	0.00	0.000E+000	1.473E-003
Th-228	5.45	5.19	5.51	0.00	0.000E+000	1.473E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	0.00	0.000E+000	1.473E-003
Am-241	5.48	5.30	5.60	0.00	0.000E+000	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	0.00	0.000E+000	1.473E-003
Cm-244	5.78	5.64	5.90	0.00	0.000E+000	1.473E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:16:45PM 7/25/2012

Sample

Sample Name: ICB;AV126
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012c
Description:

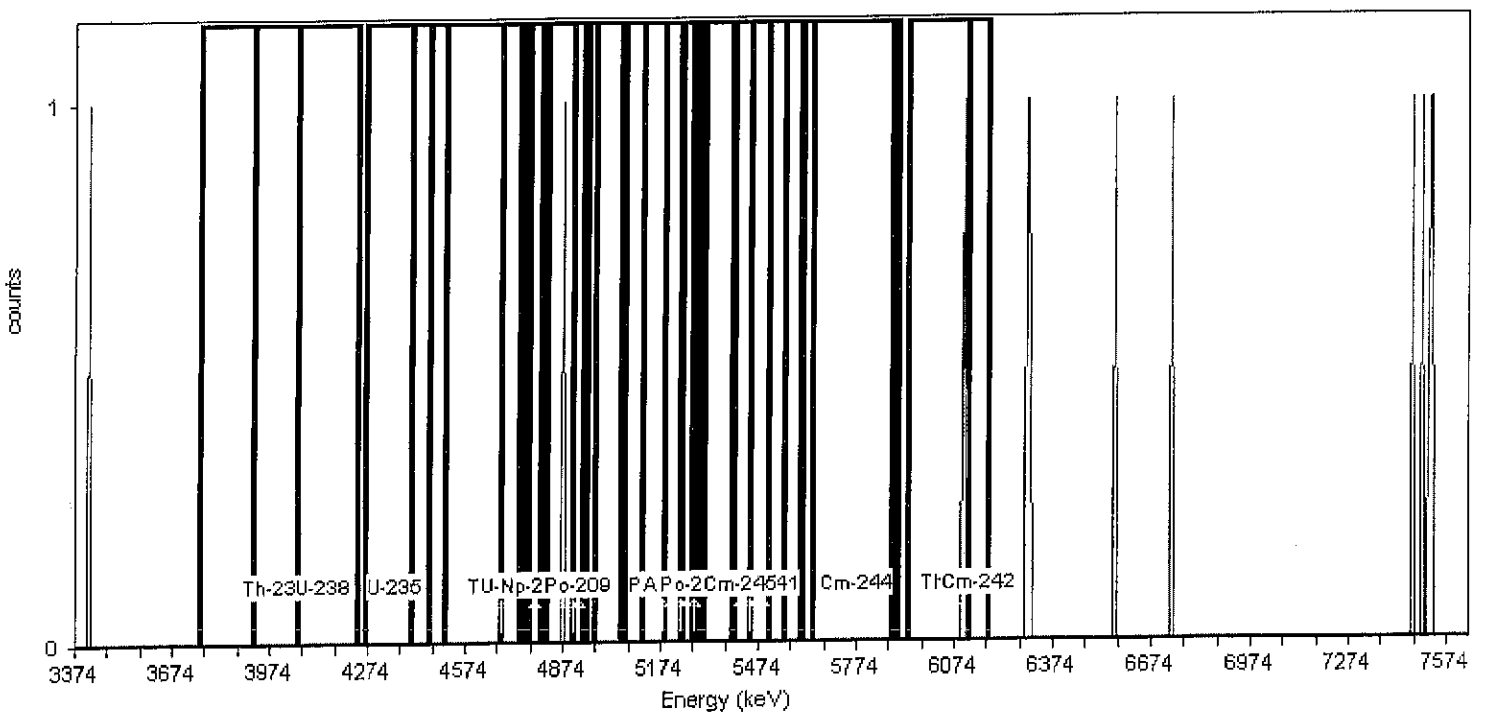
Analyst: 60040

Acquisition

Detector: AV126 , SN: 49-179C4
Acquisition Start Date: 7/24/2012 9:08:24PM
Live Time: 960.00 min.
Real Time: 960.10 min.
Calibration Name: IC-8875;AV126-20120614
Calibration Date: 6/15/2012 11:47:26AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.60% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 11.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	0.00	0.000E+000	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	1.00	1.042E-003	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	0.00	0.000E+000	1.473E-003
Am-243	5.23	5.05	5.31	0.00	0.000E+000	1.473E-003
U-232	5.25	5.06	5.40	0.00	0.000E+000	1.473E-003
Th-228	5.45	5.19	5.51	0.00	0.000E+000	1.473E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	0.00	0.000E+000	1.473E-003
Am-241	5.48	5.30	5.60	0.00	0.000E+000	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	0.00	0.000E+000	1.473E-003
Cm-244	5.78	5.64	5.90	0.00	0.000E+000	1.473E-003
Th-227	6.07	5.93	6.18	1.00	1.042E-003	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:14:35PM 7/25/2012

Sample

Sample Name: ICB;AV127
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

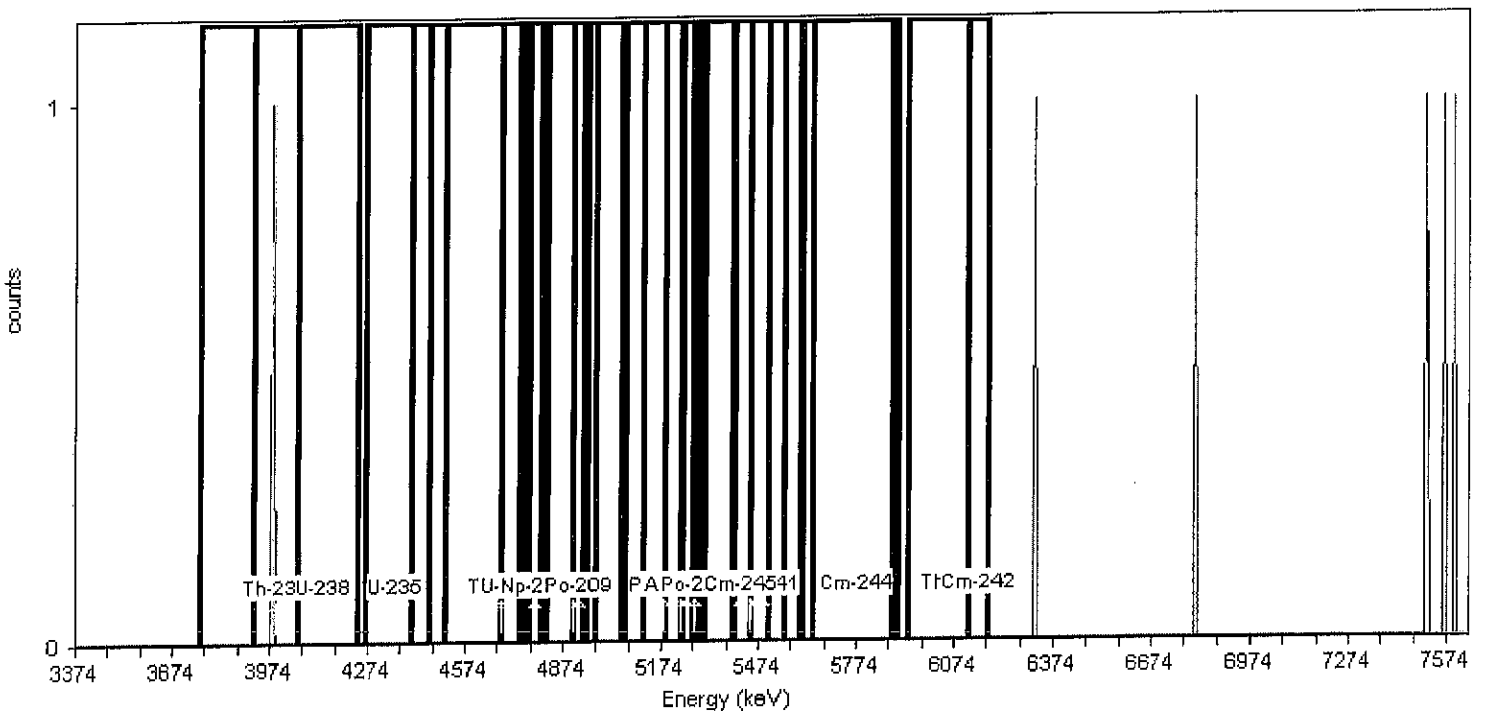
Analyst: 60040

Acquisition

Detector: AV127 , SN: 49-179C5
Acquisition Start Date: 7/24/2012 9:06:40PM
Live Time: 960.00 min.
Real Time: 960.10 min.
Calibration Name: IC-8876;AV127-20120614
Calibration Date: 6/15/2012 11:48:11AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 27.75% +/- 0.38% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 6.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	0.00	0.000E+000	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	0.00	0.000E+000	1.473E-003
Am-243	5.23	5.05	5.31	0.00	0.000E+000	1.473E-003
U-232	5.25	5.06	5.40	0.00	0.000E+000	1.473E-003
Th-228	5.45	5.19	5.51	0.00	0.000E+000	1.473E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	0.00	0.000E+000	1.473E-003
Am-241	5.48	5.30	5.60	0.00	0.000E+000	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	0.00	0.000E+000	1.473E-003
Cm-244	5.78	5.64	5.90	0.00	0.000E+000	1.473E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:14:42PM 7/25/2012

Sample

Sample Name: ICB;AV128
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

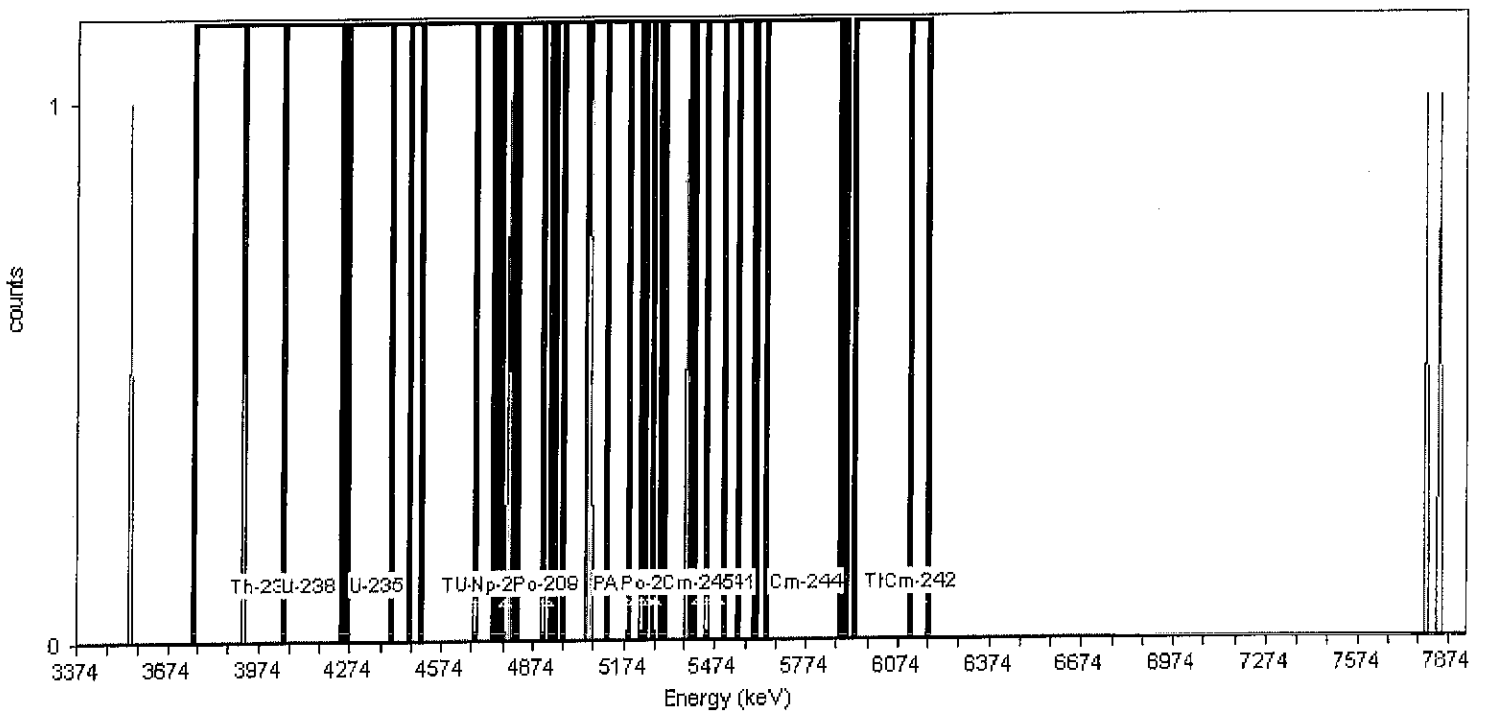
Analyst: 60040

Acquisition

Detector: AV128 , SN: 49-179C6
Acquisition Start Date: 7/24/2012 9:06:45PM
Live Time: 960.00 min.
Real Time: 960.10 min.
Calibration Name: IC-8877;AV128-20120614
Calibration Date: 6/15/2012 11:48:54AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2

Efficiency: 26.85% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 7.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	1.00	1.042E-003	1.473E-003
U-238	4.14	3.92	4.24	1.00	1.042E-003	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	1.00	1.042E-003	1.473E-003
Pu-242	4.90	4.68	4.95	1.00	1.042E-003	1.473E-003
Th-229	4.86	4.74	5.12	2.00	2.083E-003	1.804E-003
Np-237	4.78	4.77	4.81	1.00	1.042E-003	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	1.00	1.042E-003	1.473E-003
Am-243	5.23	5.05	5.31	1.00	1.042E-003	1.473E-003
U-232	5.25	5.06	5.40	2.00	2.083E-003	1.804E-003
Th-228	5.45	5.19	5.51	1.00	1.042E-003	1.473E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	1.00	1.042E-003	1.473E-003
Am-241	5.48	5.30	5.60	1.00	1.042E-003	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	0.00	0.000E+000	1.473E-003
Cm-244	5.78	5.64	5.90	0.00	0.000E+000	1.473E-003
Th-227	6.07	5.93	6.18	0.00	0.000E+000	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Background Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:14:48PM 7/25/2012

Sample

Sample Name: ICB;AV129
Comment:

Spectrum #1 Analysis #1

Batch

Batch Name: July2012b
Description:

Analyst: 60040

Acquisition

Detector: AV129 , SN: 44-179C7
Acquisition Start Date: 7/24/2012 9:06:45PM
Live Time: 960.00 min.
Real Time: 960.10 min.
Calibration Name: IC-9520;AV12920120614
Calibration Date: 6/15/2012 11:49:36AM

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch²

Efficiency: 27.10% +/- 0.37% TPU(2 sigma)

General Analysis

Analysis Method: Absolute ROI Analysis, Set Name = 11/05_BackgroundROI
Nuclide Library: Background ROI Library
Total Background Counts: 8.00

Nuclide Summary (ROI)

RegionName	Peak Energy (MeV)	Start Energy (MeV)	End Energy (MeV)	GrossCounts	Count Rate (CPM)	CR Uncertainty (CPM)
Th-232	3.99	3.75	4.05	0.00	0.000E+000	1.473E-003
U-238	4.14	3.92	4.24	0.00	0.000E+000	1.473E-003
U-235	4.36	4.26	4.46	0.00	0.000E+000	1.473E-003
Th-230	4.68	4.40	4.75	0.00	0.000E+000	1.473E-003
U-234	4.71	4.51	4.82	0.00	0.000E+000	1.473E-003
Pu-242	4.90	4.68	4.95	0.00	0.000E+000	1.473E-003
Th-229	4.86	4.74	5.12	0.00	0.000E+000	1.473E-003
Np-237	4.78	4.77	4.81	0.00	0.000E+000	1.473E-003
Po-209	4.92	4.90	4.93	0.00	0.000E+000	1.473E-003
Pu-239	5.18	4.97	5.24	0.00	0.000E+000	1.473E-003
Am-243	5.23	5.05	5.31	0.00	0.000E+000	1.473E-003
U-232	5.25	5.06	5.40	0.00	0.000E+000	1.473E-003
Th-228	5.45	5.19	5.51	0.00	0.000E+000	1.473E-003
Po-210	5.28	5.23	5.29	0.00	0.000E+000	1.473E-003
Pu-238	5.47	5.27	5.55	0.00	0.000E+000	1.473E-003
Am-241	5.48	5.30	5.60	0.00	0.000E+000	1.473E-003
Cm-245	5.42	5.40	5.45	0.00	0.000E+000	1.473E-003
Pu-236	5.76	5.61	5.89	1.00	1.042E-003	1.473E-003
Cm-244	5.78	5.64	5.90	1.00	1.042E-003	1.473E-003
Th-227	6.07	5.93	6.18	1.00	1.042E-003	1.473E-003
Cm-242	6.15	6.12	6.18	0.00	0.000E+000	1.473E-003

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Monthly CCV
Alpha Vision
July 2012
AV1-146

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV1						
IC-7107;AV1-20120607	6/7/2012 3:02:16 PM	82232-334	0.2756	Pass		
CCV-7107;AV1-20120724	7/24/2012 1:37:50 PM	82232-334	0.2749	Pass	99.7401	Pass
AV2						
IC-8874;AV2-20120607	6/7/2012 3:02:23 PM	82233-334	0.2693	Pass		
CCV-8874;AV2-20120724	7/24/2012 1:38:06 PM	82233-334	0.2737	Pass	101.617	Pass
AV3						
IC-8875;AV3-20120607	6/7/2012 3:02:28 PM	82234-334	0.2857	Pass		
CCV-8875;AV3-20120724	7/24/2012 1:38:18 PM	82234-334	0.2813	Pass	98.4574	Pass
AV4						
IC-8876;AV4-20120607	6/7/2012 3:02:32 PM	82235-334	0.2793	Pass		
CCV-8876;AV4-20120724	7/24/2012 1:38:33 PM	82235-334	0.2759	Pass	98.7801	Pass
AV6						
IC-9520;AV6-20120607a	6/7/2012 3:56:30 PM	82237-334	0.2792	Pass		
CCV-9520;AV6-20120724	7/24/2012 1:38:57 PM	82237-334	0.2815	Pass	100.837	Pass
AV7						
IC-8879;AV7-20120607	6/7/2012 4:03:51 PM	82238-334	0.2731	Pass		
CCV-8879;AV7-20120724	7/24/2012 1:39:10 PM	82238-334	0.2696	Pass	98.7133	Pass
AV8						
IC-9792;AV8-20120607	6/7/2012 4:06:21 PM	82240-334	0.2787	Pass		
CCV-9792;AV8-20120724	7/24/2012 1:39:22 PM	82240-334	0.2791	Pass	100.131	Pass
AV9						
IC-9793;AV9-20120607	6/7/2012 4:06:26 PM	82241-334	0.2781	Pass		
CCV-9793;AV9-20120724	7/24/2012 1:39:34 PM	82241-334	0.2797	Pass	100.590	Pass
AV10						
IC-9794;AV10-20120621	6/21/2012 2:01:39 PM	82242-334	0.2725	Pass		
AV11						
IC-9795;AV11-20120607	6/7/2012 7:50:12 PM	82243-334	0.2751	Pass		
CCV-9795;AV11-20120724	7/24/2012 1:40:24 PM	82243-334	0.2762	Pass	100.416	Pass
AV12						
IC-9817;AV12-20120607	6/7/2012 7:50:16 PM	82244-334	0.2699	Pass		
CCV-9817;AV12-20120724	7/24/2012 1:40:35 PM	82244-334	0.2659	Pass	98.5073	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV13						
IC-9884;AV13-20120607	6/7/2012 7:50:19 PM	82245-334	0.2758	Pass		
CCV-9884;AV13-20120724	7/24/2012 1:40:46 PM	82245-334	0.2906	Pass	105.355	Fail
CCV-9884;AV13-20120724a	7/24/2012 5:02:56 PM	82245-334	0.2748	Pass	99.6538	Pass
CCV-9884;AV13-20120725	7/25/2012 11:44:29 AM	82245-334	0.2727	Pass	98.8754	Pass
AV14						
IC-9885;AV14-20120607	6/7/2012 7:50:22 PM	82246-334	0.2724	Pass		
CCV-9885;AV14-20120724	7/24/2012 1:41:00 PM	82246-334	0.2691	Pass	98.7814	Pass
AV15						
IC-9886;AV15-20120607	6/7/2012 7:50:24 PM	82247-334	0.2743	Pass		
CCV-9886;AV15-20120724	7/24/2012 1:41:10 PM	82247-334	0.2744	Pass	100.039	Pass
AV16						
IC-7107;AV16-20120607a	6/8/2012 12:12:55 AM	82232-334	0.2798	Pass		
CCV-7107;AV16-20120724	7/24/2012 5:03:06 PM	82232-334	0.2799	Pass	100.019	Pass
AV17						
IC-8874;AV17-20120607	6/8/2012 12:13:37 AM	82233-334	0.2631	Pass		
CCV-8874;AV17-20120724	7/24/2012 5:03:21 PM	82233-334	0.2669	Pass	101.451	Pass
AV18						
IC-8875;AV18-20120607	6/8/2012 12:13:58 AM	82234-334	0.2748	Pass		
CCV-8875;AV18-20120724	7/24/2012 5:05:40 PM	82234-334	0.2730	Pass	99.3381	Pass
AV19						
IC-8876;AV19-20120607	6/8/2012 12:14:05 AM	82235-334	0.2694	Pass		
CCV-8876;AV19-20120724	7/24/2012 5:03:44 PM	82235-334	0.2681	Pass	99.5055	Pass
AV20						
IC-8877;AV20-20120607	6/7/2012 7:50:28 PM	82236-334	0.2703	Pass		
CCV-8877;AV20-20120724	7/24/2012 1:38:45 PM	82236-334	0.2677	Pass	99.0551	Pass
AV21						
IC-9520;AV21-20120607	6/8/2012 12:14:09 AM	82237-334	0.2708	Pass		
CCV-9520;AV21-20120724	7/24/2012 5:03:53 PM	82237-334	0.2734	Pass	100.966	Pass
AV22						
IC-8879;AV22-20120607	6/8/2012 12:14:14 AM	82238-334	0.2679	Pass		
CCV-8879;AV22-20120724	7/24/2012 5:04:03 PM	82238-334	0.2639	Pass	98.5154	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV23						
IC-9792;AV23-20120607	6/8/2012 12:14:18 AM	82240-334	0.2673	Pass		
CCV-9792;AV23-20120724	7/24/2012 5:04:14 PM	82240-334	0.2688	Pass	100.552	Pass
AV24						
IC-9793;AV24-20120607	6/8/2012 12:14:21 AM	82241-334	0.2734	Pass		
CCV-9793;AV24-20120724	7/24/2012 5:04:24 PM	82241-334	0.2766	Pass	101.156	Pass
AV43						
IC-9794;AV43-20120607	6/7/2012 7:50:31 PM	82242-334	0.2699	Pass		
CCV-9794;AV43-20120725	7/25/2012 10:28:07 PM	82242-334	0.2686	Pass	99.5158	Pass
AV44						
IC-9795;AV44-20120610	6/11/2012 3:27:57 PM	82243-334	0.2664	Pass		
CCV-9795;AV44-20120725	7/25/2012 10:28:12 PM	82243-334	0.2682	Pass	100.672	Pass
AV45						
IC-9817;AV45-20120610	6/11/2012 3:28:22 PM	82244-334	0.2704	Pass		
CCV-9817;AV45-20120725	7/25/2012 10:28:16 PM	82244-334	0.0001	Eval	5.53444	Fail
AV46						
IC-9884;AV46-20120610	6/11/2012 3:28:47 PM	82245-334	0.2849	Pass		
CCV-9884;AV46-20120725	7/25/2012 10:28:19 PM	82245-334	0.2804	Pass	98.4164	Pass
AV47						
IC-9885;AV47-20120611a	6/12/2012 1:04:12 AM	82246-334	0.2678	Pass		
AV48						
IC-9886;AV48-20120610	6/11/2012 3:29:40 PM	82247-334	0.2764	Pass		
CCV-9886;AV48-20120725	7/25/2012 10:28:31 PM	82247-334	0.0004	Eval	0.13021	Fail
AV49						
IC-7107;AV49-20120610	6/10/2012 8:17:41 PM	82232-334	0.2927	Pass		
CCV-7107;AV49-20120725	7/25/2012 10:28:34 PM	82232-334	0.2909	Pass	99.3834	Pass
AV50						
IC-8874;AV50-20120610	6/10/2012 8:17:58 PM	82233-334	0.2754	Pass		
CCV-8874;AV50-20120726	7/26/2012 1:58:10 PM	82233-334	0.2729	Pass	99.0921	Pass
AV51						
IC-8875;AV51-20120610	6/10/2012 8:18:12 PM	82234-334	0.2819	Pass		
CCV-8875;AV51-20120725	7/25/2012 10:28:38 PM	82234-334	0.2814	Pass	99.8447	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV52						
IC-8876;AV52-20120610	6/10/2012 8:18:26 PM	82235-334	0.2911	Pass		
CCV-8876;AV52-20120726	7/26/2012 1:58:30 PM	82235-334	0.2925	Pass	100.496	Pass
AV53						
IC-8877;AV53-20120610	6/10/2012 8:18:38 PM	82236-334	0.2773	Pass		
CCV-8877;AV53-20120725	7/25/2012 10:28:41 PM	82236-334	0.2775	Pass	100.055	Pass
AV54						
IC-9520;AV54-20120610	6/10/2012 8:18:52 PM	82237-334	0.2798	Pass		
CCV-9520;AV54-20120726	7/26/2012 1:58:49 PM	82237-334	0.2760	Pass	98.6444	Pass
AV55						
IC-8879;AV55-20120610	6/10/2012 8:19:03 PM	82238-334	0.2720	Pass		
CCV-8879;AV55-20120725	7/25/2012 10:28:45 PM	82238-334	0.2697	Pass	99.1518	Pass
AV56						
IC-9792;AV56-20120610	6/10/2012 8:19:16 PM	82240-334	0.2709	Pass		
CCV-9792;AV56-20120725	7/25/2012 10:28:48 PM	82240-334	0.0003	Eval	0.11605	Fail
AV57						
IC-9793;AV57-20120610	6/10/2012 8:19:29 PM	82241-334	0.2764	Pass		
CCV-9793;AV57-20120725	7/25/2012 10:28:52 PM	82241-334	0.2763	Pass	99.9520	Pass
AV58						
IC-9794;AV58-20120610	6/10/2012 8:19:36 PM	82242-334	0.2550	Pass		
AV59						
IC-9795;AV59-20120610	6/10/2012 8:19:39 PM	82243-334	0.2753	Pass		
AV60						
IC-9817;AV60-20120610	6/10/2012 8:19:43 PM	82244-334	0.2682	Pass		
CCV-9817;AV60-20120725a	7/26/2012 12:42:30 AM	82244-334	0.2705	Pass	100.836	Pass
AV61						
IC-9884;AV61-20120610	6/10/2012 8:19:46 PM	82245-334	0.2792	Pass		
CCV-9884;AV61-20120725	7/26/2012 12:42:24 AM	82245-334	0.2785	Pass	99.7356	Pass
AV62						
IC-9885;AV62-20120610	6/10/2012 8:19:49 PM	82246-334	0.2742	Pass		
CCV-9885;AV62-20120725	7/26/2012 12:42:33 AM	82246-334	0.2738	Pass	99.8594	Pass
AV63						
IC-9886;AV63-20120610	6/10/2012 8:19:57 PM	82247-334	0.2707	Pass		
CCV-9886;AV63-20120725	7/26/2012 12:42:36 AM	82247-334	0.2716	Pass	100.323	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV64						
IC-7107;AV64-20120610	6/11/2012 3:30:09 PM	82232-334	0.2935	Pass		
CCV-7107;AV64-20120726	7/26/2012 1:58:00 PM	82232-334	0.2935	Pass	99.9978	Pass
AV65						
IC-8874;AV65-20120610	6/11/2012 3:30:33 PM	82233-334	0.2759	Pass		
CCV-8874;AV65-20120725	7/25/2012 10:28:56 PM	82233-334	0.2745	Pass	99.4624	Pass
AV66						
IC-8875;AV66-20120610	6/11/2012 3:30:58 PM	82234-334	0.2846	Pass		
CCV-8875;AV66-20120725	7/26/2012 12:42:39 AM	82234-334	0.2809	Pass	98.6783	Pass
AV67						
IC-8876;AV67-20120610	6/11/2012 3:31:27 PM	82235-334	0.2953	Pass		
CCV-8876;AV67-20120726	7/26/2012 5:34:37 PM	82235-334	0.2975	Pass	100.722	Pass
AV68						
IC-8877;AV68-20120610	6/11/2012 3:31:53 PM	82236-334	0.2740	Pass		
CCV-8877;AV68-20120725	7/26/2012 12:42:42 AM	82236-334	0.2748	Pass	100.313	Pass
AV69						
IC-9520;AV69-20120610	6/11/2012 3:32:14 PM	82237-334	0.2763	Pass		
CCV-9520;AV69-20120725	7/25/2012 10:29:25 PM	82237-334	0.2730	Pass	98.8075	Pass
AV70						
IC-8879;AV70-20120610	6/11/2012 3:32:41 PM	82238-334	0.2732	Pass		
CCV-8879;AV70-20120725	7/26/2012 12:42:45 AM	82238-334	0.2708	Pass	99.1119	Pass
AV71						
IC-9792;AV71-20120610	6/11/2012 3:33:08 PM	82240-334	0.2763	Pass		
CCV-9792;AV71-20120725	7/26/2012 12:42:50 AM	82240-334	0.2755	Pass	99.7117	Pass
AV72						
IC-9793;AV72-20120610	6/11/2012 3:33:25 PM	82241-334	0.2910	Pass		
CCV-9793;AV72-20120725	7/26/2012 12:42:53 AM	82241-334	0.2858	Pass	98.2175	Pass
AV73						
IC-9794;AV73-20120610	6/11/2012 3:33:47 PM	82242-334	0.2766	Pass		
CCV-9794;AV73-20120725	7/26/2012 12:42:56 AM	82242-334	0.2759	Pass	99.7532	Pass
AV74						
IC-9795;AV74-20120611a	6/12/2012 1:04:18 AM	82243-334	0.2701	Pass		
CCV-9795;AV74-20120726	7/26/2012 8:37:17 AM	82243-334	0.2731	Pass	101.096	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV75						
IC-9817;AV75-20120611a	6/12/2012 1:04:21 AM	82244-334	0.2656	Pass		
CCV-9817;AV75-20120724	7/24/2012 8:51:29 PM	82244-334	0.2666	Pass	100.388	Pass
AV76						
IC-9884;AV76-20120611a	6/12/2012 1:04:24 AM	82245-334	0.2723	Pass		
CCV-9884;AV76-20120724a	7/24/2012 10:38:47 PM	82245-334	0.2757	Pass	101.240	Pass
AV77						
IC-9885;AV77-20120612	6/12/2012 10:16:22 PM	82246-334	0.2674	Pass		
CCV-9885;AV77-20120724	7/24/2012 8:51:53 PM	82246-334	0.2687	Pass	100.497	Pass
AV78						
IC-9886;AV78-20120611a	6/12/2012 1:04:27 AM	82247-334	0.2751	Pass		
CCV-9886;AV78-20120724	7/24/2012 8:51:41 PM	82247-334	0.2748	Pass	99.8636	Pass
AV79						
IC-7107;AV79-20120611a	6/12/2012 1:04:30 AM	82232-334	0.2824	Pass		
CCV-7107;AV79-20120724	7/24/2012 8:51:57 PM	82232-334	0.2837	Pass	100.462	Pass
AV80						
IC-8874;AV80-20120611a	6/12/2012 1:04:34 AM	82233-334	0.2692	Pass		
CCV-8874;AV80-20120724	7/24/2012 8:51:46 PM	82233-334	0.2697	Pass	100.177	Pass
AV81						
IC-8875;AV81-20120611a	6/12/2012 1:04:37 AM	82234-334	0.2858	Pass		
CCV-8875;AV81-20120724	7/24/2012 8:51:49 PM	82234-334	0.2899	Pass	101.429	Pass
AV82						
IC-8876;AV82-20120611a	6/12/2012 1:04:40 AM	82235-334	0.2768	Pass		
CCV-8876;AV82-20120724	7/24/2012 8:52:00 PM	82235-334	0.2737	Pass	98.8822	Pass
AV83						
IC-8877;AV83-20120611a	6/12/2012 1:04:44 AM	82236-334	0.2727	Pass		
CCV-8877;AV83-20120724	7/24/2012 8:52:04 PM	82236-334	0.2757	Pass	101.099	Pass
AV84						
IC-9520;AV84-20120611a	6/12/2012 1:04:47 AM	82237-334	0.2790	Pass		
CCV-9520;AV84-20120724	7/24/2012 8:52:07 PM	82237-334	0.2748	Pass	98.4876	Pass
AV85						
IC-8879;AV85-20120611a	6/12/2012 1:04:50 AM	82238-334	0.2774	Pass		
CCV-8879;AV85-20120724	7/24/2012 8:52:11 PM	82238-334	0.2782	Pass	100.258	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV86						
IC-9792;AV86-20120611a	6/12/2012 1:04:54 AM	82240-334	0.2769	Pass		
CCV-9792;AV86-20120724	7/24/2012 8:52:16 PM	82240-334	0.2771	Pass	100.046	Pass
AV87						
IC-9793;AV87-20120611a	6/12/2012 1:04:56 AM	82241-334	0.2951	Pass		
CCV-9793;AV87-20120724	7/24/2012 8:52:20 PM	82241-334	0.2909	Pass	98.5861	Pass
AV88						
IC-9794;AV88-20120611a	6/12/2012 1:04:59 AM	82242-334	0.2744	Pass		
CCV-9794;AV88-20120724	7/24/2012 5:04:33 PM	82242-334	0.2741	Pass	99.8889	Pass
AV89						
IC-9795;AV89-20120612	6/12/2012 3:39:24 PM	82243-334	0.2684	Pass		
CCV-9795;AV89-20120724	7/24/2012 5:04:44 PM	82243-334	0.2679	Pass	99.8091	Pass
AV90						
IC-9817;AV90-20120612	6/12/2012 3:39:50 PM	82244-334	0.2731	Pass		
CCV-9817;AV90	7/24/2012 5:05:02 PM	82244-334	0.2721	Pass	99.6298	Pass
AV91						
IC-9884;AV91-20120612	6/12/2012 3:40:10 PM	82245-334	0.2787	Pass		
CCV-9884;AV91-20120724	7/24/2012 11:50:47 PM	82245-334	0.2800	Pass	100.497	Pass
AV92						
IC-9885;AV92-20120613	6/13/2012 10:43:01 AM	82246-334	0.2705	Pass		
CCV-9885;AV92-20120724	7/24/2012 5:08:08 PM	82246-334	0.2723	Pass	100.677	Pass
AV93						
IC-9886;AV93-20120612	6/12/2012 3:40:55 PM	82247-334	0.2715	Pass		
CCV-9886;AV93-20120724	7/24/2012 5:08:42 PM	82247-334	0.2720	Pass	100.196	Pass
AV94						
IC-7107;AV94-20120612a	6/12/2012 3:41:17 PM	82232-334	0.2797	Pass		
CCV-7107;AV94-20120724	7/24/2012 10:38:52 PM	82232-334	0.2772	Pass	99.0992	Pass
AV95						
IC-8874;AV95-20120608	6/8/2012 8:45:55 AM	82233-334	0.2719	Pass		
CCV-8874;AV95-20120724	7/24/2012 10:38:55 PM	82233-334	0.2708	Pass	99.6240	Pass
AV96						
IC-8875;AV96-20120612	6/12/2012 3:41:40 PM	82234-334	0.2831	Pass		
CCV-8875;;AV96-20120724	7/24/2012 10:39:01 PM	82234-334	0.0004	Eval	0.14859	Fail

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV97						
IC-8876;AV97-20120612a	6/12/2012 10:16:26 PM	82235-334	0.2765	Pass		
CCV-8876;;AV97-20120724	7/24/2012 10:39:04 PM	82235-334	0.2779	Pass	100.508	Pass
AV98						
IC-8877;AV98-20120608	6/8/2012 8:46:02 AM	82236-334	0.2818	Pass		
CCV-8877;AV98-20120724	7/24/2012 5:06:05 PM	82236-334	0.2793	Pass	99.1155	Pass
AV99						
IC-9520;AV99-20120608	6/8/2012 8:46:10 AM	82237-334	0.2703	Pass		
AV100						
IC-8879;AV100-20120608	6/8/2012 8:46:24 AM	82238-334	0.2719	Pass		
CCV-8879;AV100-20120726	7/26/2012 1:58:58 PM	82238-334	0.2703	Pass	99.4168	Pass
AV101						
IC-9792;AV101-20120608	6/8/2012 8:46:34 AM	82240-334	0.2802	Pass		
CCV-9792;AV101-20120726	7/26/2012 8:37:09 AM	82240-334	0.2787	Pass	99.4560	Pass
AV102						
IC-9793;AV102-20120608	6/8/2012 8:46:41 AM	82241-334	0.2826	Pass		
CCV-9793;AV102-20120726	7/26/2012 8:37:21 AM	82241-334	0.2794	Pass	98.8711	Pass
AV103						
IC-9794;AV103-20120607	6/8/2012 12:14:29 AM	82242-334	0.2709	Pass		
CCV-9794;AV103-20120726	7/26/2012 1:59:26 PM	82242-334	0.2718	Pass	100.319	Pass
AV104						
IC-9795;AV104-20120607	6/8/2012 12:14:40 AM	82243-334	0.2646	Pass		
CCV-9795;AV104-20120726	7/26/2012 1:59:37 PM	82243-334	0.0056	Eval	2.11169	Fail
AV105						
IC-9817;AV105-20120607	6/8/2012 12:14:48 AM	82244-334	0.2474	Pass		
CCV-9817;AV10520120726	7/26/2012 1:59:46 PM	82244-334	0.2451	Pass	99.0547	Pass
AV106						
IC-9884;AV106-20120607	6/8/2012 12:15:09 AM	82245-334	0.2797	Pass		
CCV-9884;AV106-20120726	7/26/2012 1:59:55 PM	82245-334	0.2758	Pass	98.5711	Pass
AV107						
IC-9885;AV107-20120607	6/8/2012 12:14:52 AM	82246-334	0.2711	Pass		
CCV-9885;AV107-20120726	7/26/2012 2:00:04 PM	82246-334	0.2733	Pass	100.841	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV108						
IC-9886;AV108-20120607	6/8/2012 12:14:56 AM	82247-334	0.2812	Pass		
CCV-9886;AV108-20120726	7/26/2012 2:00:19 PM	82247-334	0.2814	Pass	100.046	Pass
AV109						
IC-7107;AV109-20120608	6/8/2012 8:46:47 AM	82232-334	0.2782	Pass		
CCV-7107;AV109-20120725	7/26/2012 12:42:58 AM	82232-334	0.2245	Pass	80.7030	Fail
CCV-7107;AV109-20120726	7/26/2012 5:32:41 PM	82232-334	0.2819	Pass	101.326	Pass
CCV-7107;AV109-20120726a	7/26/2012 7:44:53 PM	82232-334	0.2763	Pass	99.3002	Pass
AV111						
IC-8875;AV111-20120608	6/8/2012 8:46:55 AM	82234-334	0.2800	Pass		
CCV-8875;AV111-20120726	7/26/2012 8:37:25 AM	82234-334	0.2787	Pass	99.5396	Pass
AV112						
IC-8876;AV112-20120608	6/8/2012 8:47:01 AM	82235-334	0.2750	Pass		
CCV-8876;AV112-20120725	7/25/2012 10:31:58 PM	82235-334	0.2735	Pass	99.4658	Pass
AV113						
IC-8877;AV113-20120607	6/8/2012 12:15:02 AM	82236-334	0.2765	Pass		
CCV-8877;AV113-20120726	7/26/2012 8:37:29 AM	82236-334	0.2772	Pass	100.255	Pass
AV114						
IC-9520;AV114-20120612	6/12/2012 3:42:22 PM	82237-334	0.2746	Pass		
CCV-9520;AV114-20120726	7/26/2012 5:34:48 PM	82237-334	0.2758	Pass	100.401	Pass
AV115						
IC-8879;AV115-20120612	6/12/2012 3:42:43 PM	82238-334	0.2756	Pass		
CCV-8879;AV115-20120726	7/26/2012 5:34:59 PM	82238-334	0.2762	Pass	100.213	Pass
AV116						
IC-9792;AV116-20120612	6/12/2012 3:43:02 PM	82240-334	0.2914	Pass		
CCV-9792;AV116-20120726	7/26/2012 1:59:07 PM	82240-334	0.2773	Pass	95.1508	Pass
AV117						
IC-9793;AV117-20120612	6/12/2012 3:43:27 PM	82241-334	0.2628	Pass		
CCV-9793;AV117-20120726	7/26/2012 1:59:16 PM	82241-334	0.2683	Pass	102.098	Pass
AV118						
IC-9794;AV118-20120608	6/8/2012 8:47:07 AM	82242-334	0.2728	Pass		
CCV-9794;AV118-20120726	7/26/2012 8:37:33 AM	82242-334	0.2689	Pass	98.5708	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV119						
IC-9795;AV119-20120608	6/8/2012 8:47:13 AM	82243-334	0.2655	Pass		
CCV-9795;AV119-20120726	7/26/2012 10:05:57 PM	82243-334	0.2655	Pass	99.9791	Pass
AV120						
IC-9817;AV120-20120608	6/8/2012 8:47:18 AM	82244-334	0.2668	Pass		
CCV-9817;AV120-20120726	7/26/2012 8:37:37 AM	82244-334	0.2689	Pass	100.796	Pass
AV121						
IC-9884;AV121-20120608	6/8/2012 8:54:38 AM	82245-334	0.2825	Pass		
CCV-9884;AV121-20120726	7/26/2012 8:37:41 AM	82245-334	0.2811	Pass	99.4897	Pass
AV122						
IC-9885;AV122-20120608	6/8/2012 8:54:44 AM	82246-334	0.2678	Pass		
CCV-9885;AV122-20120726	7/26/2012 8:37:46 AM	82246-334	0.2712	Pass	101.254	Pass
AV123						
IC-9886;AV123-20120614	6/15/2012 11:45:44 AM	82247-334	0.2691	Pass		
CCV-9886;AV123-20120726	7/26/2012 8:37:50 AM	82247-334	0.2654	Pass	98.6278	Pass
AV124						
IC-7107;AV124-20120614	6/15/2012 11:46:08 AM	82232-334	0.2653	Pass		
CCV-7107;AV124-20120726	7/26/2012 10:16:23 PM	82232-334	0.2661	Pass	100.282	Pass
AV125						
IC-8874;AV125-20120614	6/15/2012 11:46:45 AM	82233-334	0.2675	Pass		
CCV-8874;AV125-20120725	7/26/2012 12:43:01 AM	82233-334	0.2694	Pass	100.701	Pass
AV126						
IC-8875;AV126-20120614	6/15/2012 11:47:26 AM	82234-334	0.2760	Pass		
CCV-8875;AV126-20120726	7/26/2012 1:58:20 PM	82234-334	0.2746	Pass	99.5062	Pass
AV127						
IC-8876;AV127-20120614	6/15/2012 11:48:11 AM	82235-334	0.2775	Pass		
CCV-8876;AV127-20120725	7/26/2012 12:43:05 AM	82235-334	0.0003	Eval	0.11569	Fail
AV128						
IC-8877;AV128-20120614	6/15/2012 11:48:54 AM	82236-334	0.2685	Pass		
CCV-8877;AV128-20120726	7/26/2012 1:58:40 PM	82236-334	0.0003	Eval	0.11553	Fail
AV129						
IC-9520;AV12920120614	6/15/2012 11:49:36 AM	82237-334	0.2710	Pass		
CCV-9520;AV129-20120725	7/26/2012 12:43:08 AM	82237-334	0.2730	Pass	100.742	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV130						
IC-8879;AV130-20120614	6/15/2012 11:50:34 AM	82238-334	0.2707	Pass		
CCV-8879;AV130-20120726	7/26/2012 8:37:58 AM	82238-334	0.2711	Pass	100.151	Pass
AV131						
IC-9792;AV131-20120612	6/12/2012 10:16:29 PM	82240-334	0.2777	Pass		
CCV-9792;AV131-20120726	7/26/2012 7:43:47 PM	82240-334	0.2754	Pass	99.1770	Pass
AV132						
IC-9793;AV132-20120612	6/12/2012 10:16:32 PM	82241-334	0.2711	Pass		
CCV-9793;AV132-20120726	7/26/2012 5:35:09 PM	82241-334	0.2728	Pass	100.644	Pass
AV133						
IC-9794;AV133-20120612	6/12/2012 3:43:51 PM	82242-334	0.2627	Pass		
CCV-9794;AV133-20120726	7/26/2012 7:43:55 PM	82242-334	0.2629	Pass	100.084	Pass
AV134						
IC-9795;AV134-20120612	6/12/2012 10:16:35 PM	82243-334	0.2665	Pass		
CCV-9795;AV134-20120726	7/26/2012 7:44:04 PM	82243-334	0.2637	Pass	98.9425	Pass
AV135						
IC-9817;AV135-20120612	6/12/2012 10:16:38 PM	82244-334	0.2610	Pass		
CCV-9817;AV135-20120726	7/26/2012 7:44:16 PM	82244-334	0.2622	Pass	100.442	Pass
AV136						
IC-9884;AV136-20120612	6/12/2012 10:16:41 PM	82245-334	0.2745	Pass		
CCV-9884;AV13620120726	7/26/2012 7:44:27 PM	82245-334	0.2725	Pass	99.2766	Pass
AV137						
IC-9885;AV137-20120621	6/21/2012 2:01:56 PM	82246-334	0.2674	Pass		
CCV-9885;AV137-20120726	7/26/2012 7:44:35 PM	82246-334	0.2648	Pass	99.0375	Pass
AV138						
IC-9886;AV138-20120608	6/8/2012 8:55:45 AM	82247-334	0.2683	Pass		
CCV-9886;AV138-20120726	7/26/2012 7:44:43 PM	82247-334	0.2672	Pass	99.5864	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Yearly Calibrations
Alpha Vision
February 2012
AV1-146

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV1						
Dec2011_AV1	12/15/2011 9:30:49 AM	82232-334	0.2769	Pass		
AV2						
Dec2011_AV2	12/15/2011 9:31:52 AM	82233-334	0.2696	Pass		
AV3						
June2011_AV3	6/1/2011 2:07:22 PM	63508A-334	0.2671	Pass		
AV4						
June2011_AV4	6/1/2011 2:07:26 PM	63509A-334	0.2679	Pass		
AV6						
June2011_AV6	6/1/2011 2:08:00 PM	82233-334	0.2795	Pass		
AV7						
June2011_AV7	6/1/2011 2:08:04 PM	82234-334	0.2763	Pass		
AV8						
June2011_AV8	6/1/2011 2:08:08 PM	82235-334	0.2799	Pass		
AV9						
Feb2012_AV9a	2/22/2012 5:00:30 PM	82240-334	0.2776	Pass		
Feb2012_AV9a_ICV	2/22/2012 8:32:32 PM	82236-334	0.2761	Pass	99.4615	Pass
AV10						
Feb2012_AV10a	2/22/2012 8:32:27 PM	82241-334	0.2709	Pass		
Feb2012_AV10a_ICV	2/23/2012 11:15:43 AM	82237-334	0.2717	Pass	100.292	Pass
AV11						
Dec2011_AV11	12/15/2011 1:33:27 PM	82242-334	0.2748	Pass		
AV12						
Feb2012_AV12a	2/22/2012 5:00:57 PM	82243-334	0.2682	Pass		
Feb2012_AV12a_ICV	2/22/2012 8:32:35 PM	82238-334	0.2707	Pass	100.940	Pass
AV13						
June2011_AV13a	6/1/2011 2:12:53 PM	82240-334	0.2795	Pass		
AV14						
Dec2011_AV14	12/15/2011 9:32:53 AM	82245-334	0.2606	Pass		
AV15						
June2011_AV15	6/1/2011 2:13:10 PM	82242-334	0.2731	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV16						
Feb2012_AV16a	2/22/2012 5:01:24 PM	82247-334	0.2769	Pass		
Feb2012_AV16a_ICV	2/22/2012 6:32:38 PM	82243-334	0.2707	Pass	97.7705	Pass
AV17						
June2011A_AV17	6/10/2011 2:02:28 PM	82244-334	0.2619	Pass		
AV18						
Feb2012_AV18a	2/22/2012 5:01:33 PM	82233-334	0.2699	Pass		
Feb2012_AV18a_ICV	2/22/2012 6:32:42 PM	82247-334	0.2566	Pass	95.0864	Pass
AV19						
Dec2011_AV19	12/6/2011 9:35:31 AM	82234-334	0.2724	Pass		
AV20						
June2011_AV20	6/1/2011 2:13:04 PM	82247-334	0.2701	Pass		
AV21						
June2011_AV21b	6/29/2011 3:56:43 PM	63508A-334	0.2596	Pass		
AV22						
Dec2011_AV22	2/21/2012 2:57:59 PM	82237-334	0.2680	Pass		
AV23						
June2011_AV23	6/2/2011 6:09:19 AM	63508A-334	0.2563	Pass		
AV24						
Dec2011_AV24	12/15/2011 9:33:47 AM	82240-334	0.2717	Pass		
AV43						
June2011A_AV43	6/20/2011 1:52:02 AM	82232-334	0.2786	Pass		
AV44						
June2011A_AV44	6/20/2011 8:43:44 AM	82233-334	0.2708	Pass		
AV45						
June2011_AV45	6/2/2011 6:09:33 AM	82234-334	0.2811	Pass		
AV46						
February2012_AV46	2/24/2012 9:01:09 AM	82244-334	0.2721	Pass		
Feb2012_AV46_ICV	2/24/2012 12:25:10 PM	82236-334	0.2768	Pass	101.742	Pass
AV47						
June2011A_AV47	6/20/2011 8:43:55 AM	82236-334	0.2691	Pass		
AV48						
June2011A_AV48	2/21/2012 2:58:50 PM	82237-334	0.2748	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV49						
June2011_AV49	6/2/2011 6:09:47 AM	82238-334	0.2849	Pass		
AV50						
February2012_AV50	2/24/2012 9:01:31 AM	82232-334	0.2822	Pass		
Feb2012_AV50_ICV	2/24/2012 12:25:26 PM	82240-334	0.2783	Pass	98.6252	Pass
AV51						
June2011_AV51	6/2/2011 6:09:53 AM	82240-334	0.2771	Pass		
AV52						
June2011_AV52	6/2/2011 6:09:56 AM	82241-334	0.2870	Pass		
AV53						
Dec2011_AV53	12/15/2011 9:35:01 AM	82235-334	0.2846	Pass		
AV54						
June2011_AV54	6/2/2011 6:10:00 AM	82243-334	0.2719	Pass		
AV55						
June2011A_AV55	6/20/2011 8:44:19 AM	82244-334	0.2685	Pass		
AV56						
Dec2011_AV56	12/15/2011 9:36:08 AM	82238-334	0.2691	Pass		
AV57						
Dec2011_AV57	12/13/2011 9:33:31 AM	82240-334	0.2792	Pass		
AV58						
February2012_AV58	2/24/2012 9:01:54 AM	82241-334	0.2829	Pass		
Feb2012_AV58_ICV	2/24/2012 12:25:49 PM	63507-334	0.2651	Pass	93.6999	Fail
Feb2012_AV58a_ICV	2/24/2012 3:16:31 PM	82232-334	0.2863	Pass	101.213	Pass
Feb2012_AV58b_ICV	2/24/2012 4:28:08 PM	82232-334	0.2853	Pass	100.844	Pass
AV59						
February2012_AV59	2/24/2012 9:02:17 AM	82242-334	0.2794	Pass		
Feb2012_AV59_ICV	2/24/2012 12:26:03 PM	63508A-334	0.2697	Pass	96.5361	Pass
AV60						
May2011_AV60	6/2/2011 11:03:44 AM	63507-334	0.2647	Pass		
AV61						
June2011_AV61	6/20/2011 2:14:49 PM	63508A-334	0.2663	Pass		
AV62						
May2011_AV62	6/2/2011 11:15:48 AM	63509A-334	0.2723	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV63						
Feb2012_AV63	2/23/2012 4:05:57 PM	82246-334	0.2686	Pass		
Feb2012_AV63_ICV	2/23/2012 5:15:45 PM	82234-334	0.2798	Pass	104.191	Pass
AV64						
May2011_AV64	6/2/2011 11:16:28 AM	82233-334	0.2832	Pass		
AV65						
Feb2012_AV65	2/23/2012 4:06:15 PM	82232-334	0.2841	Pass		
Feb2012_AV65_ICV	2/23/2012 5:15:50 PM	82236-334	0.2714	Pass	95.5197	Pass
AV66						
Dec2011_AV66	12/13/2011 9:35:41 AM	82233-334	0.2772	Pass		
AV67						
May2011_AV67	6/2/2011 11:17:07 AM	82236-334	0.2930	Pass		
AV68						
May2011_AV68	2/21/2012 2:59:22 PM	82237-334	0.2733	Pass		
AV69						
June2011_AV69	6/21/2011 2:25:40 PM	82238-334	0.2749	Pass		
AV70						
June2011_AV70	6/21/2011 2:26:58 PM	82239-334	0.2763	Pass		
AV71						
May2011_AV71	6/2/2011 11:17:45 AM	82240-334	0.2741	Pass		
AV72						
May2011_AV72	6/2/2011 11:17:59 AM	82241-334	0.2892	Pass		
AV73						
Dec2011_AV73	12/16/2011 2:11:57 PM	82241-334	0.2786	Pass		
AV74						
Dec2011_AV74b	12/13/2011 12:09:06 PM	82242-334	0.2738	Pass		
AV75						
May2011_AV75	6/2/2011 11:18:19 AM	82244-334	0.2642	Pass		
AV77						
May2011_AV77	6/2/2011 11:18:32 AM	82246-334	0.2664	Pass		
AV78						
May2011_AV78	6/2/2011 11:18:45 AM	82247-334	0.2787	Pass		
AV79						
June2011_AV79c	6/29/2011 3:57:04 PM	82232-334	0.2634	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov	(+/-5%)
AV80 May2011_AV80	6/10/2011 5:01:32 PM	63507-334	0.2579	Pass	
AV81 Dec2011_AV81	12/15/2011 12:13:48 PM	82233-334	0.2814	Pass	
AV82 May2011_AV82	6/28/2011 9:27:42 PM	63509A-334	0.2676	Pass	
AV83 May2011_AV83	6/28/2011 9:28:42 PM	82232-334	0.2783	Pass	
AV84 May2011_AV84	6/28/2011 9:29:52 PM	82233-334	0.2740	Pass	
AV85 May2011_AV85	6/28/2011 9:30:57 PM	82234-334	0.2852	Pass	
AV86 May2011_AV86	6/28/2011 9:31:44 PM	82235-334	0.2811	Pass	
AV87 June2011_AV87	6/21/2011 2:25:24 PM	82236-334	0.2944	Pass	
AV88 May2011_AV88	2/21/2012 2:59:57 PM	82237-334	0.2736	Pass	
AV89 May2011_AV89	6/2/2011 11:21:41 AM	82238-334	0.2698	Pass	
AV90 May2011_AV90	6/28/2011 9:34:16 PM	82239-334	0.2753	Pass	
AV92 May2011_AV92	6/28/2011 9:35:11 PM	82241-334	0.2775	Pass	
AV93 May2011_AV93	6/10/2011 5:05:03 PM	82242-334	0.2772	Pass	
AV94 June2011_AV94a	6/29/2011 3:57:09 PM	82247-334	0.2751	Pass	
AV95 June2011_AV95b	6/30/2011 8:32:04 PM	82244-334	0.2663	Pass	
AV96 June2011_AV96	6/21/2011 2:25:55 PM	82245-334	0.2743	Pass	
AV97 May2011_AV97	6/28/2011 9:40:29 PM	82246-334	0.2715	Pass	

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency (20-32%)	Recov (+/-5%)
AV98 May2011_AV98	6/28/2011 9:41:09 PM	82247-334	0.2807	Pass
AV99 Dec2011_AV99a	12/15/2011 1:34:42 PM	82236-334	0.2681	Pass
AV100 June2011_AV100	6/10/2011 2:41:33 PM	63507-334	0.2630	Pass
AV101 June2011_AV101	6/10/2011 2:42:11 PM	63508A-334	0.2594	Pass
AV102 June2011_AV102	6/10/2011 2:42:28 PM	63509A-334	0.2668	Pass
AV103 June2011_AV103a	2/21/2012 3:00:31 PM	82237-334	0.2722	Pass
AV104 June2011_AV104	6/10/2011 2:45:37 PM	82233-334	0.2711	Pass
AV105 June2011_AV105	6/10/2011 2:48:33 PM	82234-334	0.2601	Pass
AV106 June2011_AV106	6/10/2011 2:49:36 PM	82235-334	0.2828	Pass
AV107 June2011_AV107	6/10/2011 2:49:58 PM	82236-334	0.2809	Pass
AV108 Dec2011_AV108a	12/15/2011 4:14:23 PM	82246-334	0.2763	Pass
AV109 June2011_AV109	6/10/2011 2:50:52 PM	82238-334	0.2642	Pass
AV110 June2011_AV110	6/10/2011 2:51:15 PM	82239-334	0.2761	Pass
AV111 June2011_AV111	6/10/2011 2:51:42 PM	82240-334	0.2742	Pass
AV112 June2011_AV112	6/10/2011 2:52:10 PM	82241-334	0.2669	Pass
AV113 June2011_AV113a	6/29/2011 8:19:17 PM	82247-334	0.2797	Pass
AV114 June2011_AV114	6/10/2011 2:53:57 PM	82243-334	0.2672	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV115 June2011_AV115	6/10/2011 2:57:31 PM	82244-334	0.2713	Pass		
AV116 May2011_AV116	6/2/2011 11:22:31 AM	82245-334	0.2802	Pass		
AV117 June2011_AV117	6/10/2011 2:54:57 PM	82246-334	0.2598	Pass		
AV118 June2011_AV118	6/10/2011 2:55:22 PM	82247-334	0.2708	Pass		
AV119 June2011_AV119a	6/29/2011 3:57:22 PM	82234-334	0.2780	Pass		
AV120 June2011_AV120	6/10/2011 2:56:12 PM	63507-334	0.2673	Pass		
AV121 June2011_AV121	6/10/2011 2:58:09 PM	63508A-334	0.2680	Pass		
AV122 June2011_AV122	6/10/2011 2:58:33 PM	63509A-334	0.2633	Pass		
AV123 June2011_AV123a	6/21/2011 2:27:18 PM	82232-334	0.2737	Pass		
AV124 June2011_AV124a	6/21/2011 2:28:12 PM	82233-334	0.2650	Pass		
AV125 June2011_AV125a	6/21/2011 2:26:25 PM	82234-334	0.2746	Pass		
AV126 June2011_AV126	6/3/2011 3:29:01 PM	82235-334	0.2754	Pass		
AV127 June2011A_AV127	6/28/2011 9:47:50 PM	82236-334	0.2756	Pass		
AV128 June2011_AV128	2/21/2012 3:01:06 PM	82237-334	0.2692	Pass		
AV130 June2011_AV130	6/3/2011 3:29:19 PM	82239-334	0.2686	Pass		
AV131 February2012_AV131	2/24/2012 9:02:44 AM	82238-334	0.2733	Pass		
Feb2012_AV131_ICV	2/24/2012 12:26:24 PM	82245-334	0.2767	Pass	101.234	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV132						
June2011_AV132a	6/30/2011 11:37:39 AM	82247-334	0.2712	Pass		
AV133						
Feb2012_AV133	2/24/2012 1:40:22 PM	82241-334	0.2654	Pass		
Feb2012_AV133_ICV	2/24/2012 3:16:36 PM	82247-334	0.2639	Pass	99.4605	Pass
AV134						
June2011_AV134	6/3/2011 3:29:39 PM	82243-334	0.2826	Pass		
AV135						
June2011_AV135	6/3/2011 3:29:47 PM	82244-334	0.2626	Pass		
AV136						
June2011_AV136	6/3/2011 3:29:51 PM	82245-334	0.2706	Pass		
AV137						
June2011_AV137	6/3/2011 3:29:43 PM	82246-334	0.2746	Pass		
AV138						
June2011_AV138	6/3/2011 3:29:55 PM	82247-334	0.2648	Pass		
AV139						
June2011_AV139a	6/29/2011 3:57:26 PM	82235-334	0.2713	Pass		
AV140						
June2011_AV140	6/3/2011 3:30:04 PM	63507-334	0.2557	Pass		
AV141						
June2011_AV141	6/3/2011 3:30:09 PM	63508A-334	0.2581	Pass		
AV142						
June2011_AV142	6/3/2011 3:30:14 PM	63509A-334	0.2631	Pass		
AV143						
Dec2011_AV143	12/15/2011 1:36:38 PM	82235-334	0.2708	Pass		
AV144						
June2011_AV144	6/10/2011 3:04:53 PM	82233-334	0.2723	Pass		
AV145						
June2011_AV145	6/10/2011 3:05:03 PM	82234-334	0.2749	Pass		
AV146						
June2011_AV146	6/10/2011 3:05:14 PM	82235-334	0.2748	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

June Alpha Spec Calibrations

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV147						
	6/14/2011 9:47:31 AM	82236-334	0.2858	Pass		
	6/14/2011 9:48:52 AM	82247-334	0.2876	Pass	100.65	Pass
AV148						
	6/21/2011 2:32:02 PM	82237-334	0.2655	Pass		
	6/21/2011 2:32:43 PM	82236-334	0.2752	Pass	103.63	Pass
AV149						
	6/21/2011 2:34:00 PM	82238-334	0.2822	Pass		
	6/21/2011 2:34:33 PM	82237-334	0.2743	Pass	97.212	Pass
AV151						
	6/21/2011 2:36:24 PM	82240-334	0.2779	Pass		
	6/21/2011 2:36:47 PM	82239-334	0.2757	Pass	99.212	Pass
AV152						
	6/21/2011 2:37:11 PM	82241-334	0.2700	Pass		
	6/21/2011 2:37:32 PM	82240-334	0.2698	Pass	99.948	Pass
AV153						
	6/30/2011 9:05:44 AM	63508A-334	0.2610	Pass		
	6/30/2011 10:17:32 AM	63507-334	0.2585	Pass	99.026	Pass
AV154						
	6/21/2011 2:39:31 PM	82243-334	0.2680	Pass		
	6/21/2011 2:40:03 PM	82242-334	0.2722	Pass	101.56	Pass
AV155						
	6/27/2011 9:21:16 PM	82244-334	0.2651	Pass		
	6/27/2011 9:22:09 PM	82243-334	0.2628	Pass	99.134	Pass
AV156						
	6/27/2011 9:22:55 PM	82245-334	0.2721	Pass		
	6/27/2011 9:23:40 PM	82244-334	0.2640	Pass	97.019	Pass
AV157						
	6/27/2011 9:24:40 PM	82246-334	0.2630	Pass		
	6/27/2011 9:25:17 PM	82245-334	0.2703	Pass	102.74	Pass
AV158						
	6/30/2011 11:40:49 AM	82235-334	0.2758	Pass		
	6/30/2011 12:51:15 PM	82234-334	0.2756	Pass	99.948	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV159						
	6/30/2011 9:06:12 AM	82236-334	0.2701	Pass		
	6/30/2011 9:06:45 AM	82235-334	0.2750	Pass	101.83	Pass
AV160						
	6/30/2011 9:07:03 AM	82237-334	0.2630	Pass		
	6/30/2011 9:07:22 AM	82236-334	0.2656	Pass	100.98	Pass
AV161						
	6/27/2011 9:29:26 PM	63508A-334	0.2652	Pass		
	6/27/2011 9:29:59 PM	63507-334	0.2604	Pass	98.212	Pass
AV162						
	6/23/2011 11:26:56 AM	63509A-334	0.2637	Pass		
	6/23/2011 1:44:04 PM	63508A-334	0.2643	Pass	100.20	Pass
AV163						
	6/15/2011 1:14:12 AM	82232-334	0.2782	Pass		
	6/27/2011 9:30:57 PM	63509A-334	0.2748	Pass	98.774	Pass
AV164						
	6/30/2011 9:07:48 AM	82241-334	0.2661	Pass		
	6/30/2011 9:08:11 AM	82240-334	0.2702	Pass	101.52	Pass
AV165						
	6/15/2011 1:14:21 AM	82234-334	0.2869	Pass		
	6/27/2011 9:32:32 PM	82233-334	0.2796	Pass	97.467	Pass
AV166						
	6/15/2011 1:14:26 AM	82235-334	0.2773	Pass		
	6/27/2011 9:33:19 PM	82234-334	0.2771	Pass	99.922	Pass
AV167						
	6/15/2011 1:14:30 AM	82236-334	0.2723	Pass		
	6/27/2011 9:34:00 PM	82235-334	0.2755	Pass	101.17	Pass
AV168						
	6/15/2011 1:14:34 AM	82237-334	0.2627	Pass		
	6/27/2011 9:34:45 PM	82236-334	0.2702	Pass	102.85	Pass
AV169						
	6/15/2011 1:14:37 AM	82238-334	0.2711	Pass		
	6/27/2011 9:35:26 PM	82237-334	0.2674	Pass	98.648	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV170						
	6/15/2011 1:14:41 AM	82239-334	0.2783	Pass		
	6/27/2011 9:36:10 PM	82238-334	0.2688	Pass	96.606	Pass
AV171						
	6/15/2011 1:14:45 AM	82240-334	0.2709	Pass		
	6/27/2011 9:37:06 PM	82239-334	0.2813	Pass	103.84	Pass
AV172						
	6/15/2011 1:14:49 AM	82241-334	0.2699	Pass		
	6/27/2011 9:37:46 PM	82240-334	0.2705	Pass	100.22	Pass
AV173						
	6/15/2011 1:14:52 AM	82242-334	0.2830	Pass		
	6/27/2011 9:38:28 PM	82241-334	0.2716	Pass	95.991	Pass
AV174						
	6/15/2011 1:14:56 AM	82243-334	0.2679	Pass		
	6/27/2011 9:39:06 PM	82242-334	0.2743	Pass	102.42	Pass
AV175						
	6/15/2011 1:15:00 AM	82244-334	0.2675	Pass		
	6/27/2011 9:39:52 PM	82243-334	0.2720	Pass	101.67	Pass
AV176						
	6/15/2011 2:15:31 AM	82245-334	0.2726	Pass		
	6/27/2011 9:40:38 PM	82244-334	0.2661	Pass	97.631	Pass
AV177						
	6/15/2011 1:15:04 AM	82246-334	0.2651	Pass		
	6/15/2011 4:19:56 AM	82245-334	0.2751	Pass	103.75	Pass
AV178						
	6/15/2011 1:15:07 AM	82247-334	0.2746	Pass		
	6/27/2011 9:41:21 PM	82246-334	0.2711	Pass	98.745	Pass
AV179						
	6/30/2011 9:08:46 AM	82237-334	0.2742	Pass		
	6/30/2011 10:17:36 AM	82236-334	0.2866	Pass	104.51	Pass
AV180						
	6/15/2011 1:15:15 AM	63507-334	0.2625	Pass		
	6/27/2011 9:43:59 PM	63506-334	0.2532	Pass	96.455	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV181						
	6/15/2011 1:15:18 AM	63508A-334	0.2611	Pass		
	6/27/2011 9:44:46 PM	63507-334	0.2587	Pass	99.069	Pass
AV182						
	6/27/2011 9:45:31 PM	63509A-334	0.2629	Pass		
	6/27/2011 9:46:14 PM	63508A-334	0.2625	Pass	99.822	Pass
AV183						
	6/20/2011 10:52:50 PM	82232-334	0.2795	Pass		
	6/27/2011 9:46:57 PM	63509A-334	0.2671	Pass	95.537	Pass
AV184						
	6/20/2011 10:52:55 PM	82233-334	0.2772	Pass		
	6/27/2011 9:47:46 PM	82232-334	0.2799	Pass	100.95	Pass
AV185						
	6/20/2011 10:52:58 PM	82234-334	0.2823	Pass		
	6/27/2011 9:48:33 PM	82233-334	0.2741	Pass	97.113	Pass
AV186						
	6/20/2011 10:53:06 PM	82235-334	0.2741	Pass		
	6/27/2011 9:49:22 PM	82234-334	0.2744	Pass	100.12	Pass
AV187						
	6/20/2011 10:53:09 PM	82236-334	0.2672	Pass		
	6/27/2011 9:50:09 PM	82235-334	0.2741	Pass	102.59	Pass
AV188						
	6/20/2011 10:53:13 PM	82237-334	0.2820	Pass		
	6/27/2011 9:50:56 PM	82236-334	0.2799	Pass	99.240	Pass
AV189						
	6/20/2011 10:53:16 PM	82238-334	0.2769	Pass		
	6/27/2011 9:51:48 PM	82237-334	0.2684	Pass	96.927	Pass
AV190						
	6/21/2011 1:27:18 AM	82239-334	0.2710	Pass		
	6/27/2011 9:52:36 PM	82238-334	0.2739	Pass	101.05	Pass
AV191						
	6/20/2011 10:53:19 PM	82240-334	0.2794	Pass		
	6/21/2011 4:20:11 AM	82239-334	0.2769	Pass	99.115	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV192						
	6/20/2011 10:53:23 PM	82241-334	0.2797	Pass		
	6/27/2011 9:53:23 PM	82240-334	0.2797	Pass	100.02	Pass
AV193						
	6/20/2011 10:53:26 PM	82242-334	0.2736	Pass		
	6/27/2011 9:54:02 PM	82241-334	0.2750	Pass	100.50	Pass
AV194						
	6/20/2011 10:53:29 PM	82243-334	0.2734	Pass		
	6/27/2011 9:54:56 PM	82242-334	0.2776	Pass	101.56	Pass
AV195						
	6/20/2011 10:53:33 PM	82244-334	0.2644	Pass		
	6/27/2011 9:55:43 PM	82243-334	0.2668	Pass	100.90	Pass
AV196						
	6/20/2011 10:53:37 PM	82245-334	0.2839	Pass		
	6/27/2011 9:56:30 PM	82244-334	0.2753	Pass	96.985	Pass
AV197						
	6/24/2011 2:40:07 AM	82246-334	0.2672	Pass		
	6/27/2011 9:57:47 PM	82245-334	0.2763	Pass	103.37	Pass
AV198						
	6/24/2011 2:22:48 PM	82247-334	0.2725	Pass		
	6/24/2011 3:24:45 PM	82246-334	0.2672	Pass	98.027	Pass
AV199						
	6/30/2011 9:09:28 AM	82238-334	0.2684	Pass		
	6/30/2011 10:17:40 AM	82237-334	0.2638	Pass	98.291	Pass
AV200						
	6/20/2011 10:53:47 PM	63507-334	0.2618	Pass		
	6/27/2011 10:00:20 PM	63506-334	0.2543	Pass	97.155	Pass
AV201						
	6/20/2011 10:53:53 PM	63508A-334	0.2654	Pass		
	6/27/2011 10:01:08 PM	63507-334	0.2735	Pass	103.06	Pass
AV202						
	6/27/2011 10:01:51 PM	63509A-334	0.2648	Pass		
	6/27/2011 10:02:25 PM	63508A-334	0.2613	Pass	98.648	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV203						
	6/21/2011 3:19:59 PM	82232-334	0.2768	Pass		
	6/21/2011 3:21:44 PM	63509A-334	0.2646	Pass	95.582	Pass
AV204						
	6/27/2011 10:03:31 PM	82233-334	0.2705	Pass		
	6/27/2011 10:04:08 PM	82232-334	0.2736	Pass	101.16	Pass
AV205						
	6/21/2011 3:29:26 PM	82234-334	0.2783	Pass		
	6/27/2011 10:04:59 PM	82233-334	0.2722	Pass	97.818	Pass
AV206						
	6/27/2011 10:05:51 PM	82235-334	0.2796	Pass		
	6/27/2011 10:06:38 PM	82234-334	0.2837	Pass	101.48	Pass
AV207						
	6/27/2011 10:07:21 PM	82236-334	0.2735	Pass		
	6/27/2011 10:08:05 PM	82235-334	0.2759	Pass	100.87	Pass
AV208						
	6/27/2011 10:08:56 PM	82237-334	0.2765	Pass		
	6/27/2011 10:09:30 PM	82236-334	0.2800	Pass	101.26	Pass
AV209						
	6/27/2011 10:10:06 PM	82238-334	0.2812	Pass		
	6/27/2011 10:10:39 PM	82237-334	0.2680	Pass	95.309	Pass
AV210						
	6/21/2011 9:13:09 AM	82239-334	0.2718	Pass		
	6/27/2011 10:11:34 PM	82238-334	0.2722	Pass	100.16	Pass
AV211						
	6/27/2011 10:12:37 PM	82240-334	0.2684	Pass		
	6/21/2011 10:55:13 AM	82239-334	0.2688	Pass	100.13	Pass
AV212						
	6/27/2011 10:13:23 PM	82241-334	0.2851	Pass		
	6/27/2011 10:13:58 PM	82240-334	0.2891	Pass	101.41	Pass
AV213						
	6/23/2011 11:27:18 AM	82242-334	0.2707	Pass		
	6/23/2011 1:44:14 PM	82241-334	0.2712	Pass	100.17	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV214						
	6/27/2011 10:15:18 PM	82243-334	0.2701	Pass		
	6/27/2011 10:15:54 PM	82242-334	0.2728	Pass	100.98	Pass
AV215						
	6/27/2011 10:16:46 PM	82244-334	0.2907	Pass		
	6/27/2011 10:17:26 PM	82243-334	0.2768	Pass	95.222	Pass
AV216						
	6/27/2011 10:18:14 PM	82245-334	0.2815	Pass		
	6/27/2011 10:18:50 PM	82244-334	0.2736	Pass	97.176	Pass
AV217						
	7/1/2011 10:10:06 AM	82246-334	0.2656	Pass		
	7/1/2011 10:10:22 AM	82245-334	0.2746	Pass	103.39	Pass
AV218						
	6/24/2011 1:51:29 PM	82247-334	0.2743	Pass		
	6/24/2011 5:16:09 PM	82246-334	0.2696	Pass	98.287	Pass
AV219						
	6/30/2011 9:09:52 AM	82240-334	0.2749	Pass		
	6/30/2011 9:10:10 AM	82238-334	0.2711	Pass	98.608	Pass
AV220						
	6/27/2011 10:21:49 PM	63507-334	0.2632	Pass		
	6/27/2011 10:22:24 PM	63506-334	0.2579	Pass	97.981	Pass
AV221						
	6/27/2011 10:23:08 PM	63508A-334	0.2621	Pass		
	6/27/2011 10:23:43 PM	63507-334	0.2617	Pass	99.836	Pass
AV222						
	6/27/2011 10:24:23 PM	63509A-334	0.2675	Pass		
	6/27/2011 10:25:09 PM	63508A-334	0.2634	Pass	98.476	Pass
AV223						
	6/23/2011 11:28:00 AM	82232-334	0.2800	Pass		
	6/23/2011 1:44:18 PM	63509A-334	0.2682	Pass	95.794	Pass
AV224						
	6/23/2011 11:28:25 AM	82233-334	0.2755	Pass		
	6/23/2011 1:44:22 PM	82232-334	0.2798	Pass	101.55	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV225						
	6/24/2011 2:40:10 AM	82234-334	0.2791	Pass		
	6/27/2011 10:26:27 PM	82233-334	0.2753	Pass	98.623	Pass
AV226						
	6/24/2011 2:40:15 AM	82235-334	0.2729	Pass		
	6/27/2011 10:27:06 PM	82234-334	0.2800	Pass	102.61	Pass
AV227						
	6/25/2011 10:39:33 AM	82236-334	0.2783	Pass		
	6/25/2011 1:18:30 PM	82235-334	0.2773	Pass	99.651	Pass
AV228						
	6/28/2011 9:07:26 AM	82237-334	0.2755	Pass		
	6/28/2011 9:07:46 AM	82236-334	0.2863	Pass	103.94	Pass
AV229						
	6/25/2011 10:39:43 AM	82238-334	0.2781	Pass		
	6/25/2011 1:18:41 PM	82237-334	0.2735	Pass	98.336	Pass
AV230						
	6/25/2011 10:39:47 AM	82239-334	0.2844	Pass		
	6/25/2011 1:19:16 PM	82238-334	0.2812	Pass	98.851	Pass
AV231						
	6/25/2011 10:50:22 AM	82240-334	0.2784	Pass		
	6/25/2011 1:19:42 PM	82239-334	0.2758	Pass	99.090	Pass
AV232						
	6/25/2011 10:58:31 AM	82241-334	0.2758	Pass		
	6/25/2011 1:19:51 PM	82240-334	0.2812	Pass	101.96	Pass
AV233						
	6/25/2011 10:58:37 AM	82242-334	0.2668	Pass		
	6/25/2011 1:20:13 PM	82241-334	0.2705	Pass	101.37	Pass
AV234						
	6/28/2011 9:08:33 AM	82243-334	0.2710	Pass		
	6/28/2011 9:08:49 AM	82242-334	0.2714	Pass	100.13	Pass
AV235						
	6/25/2011 11:19:40 AM	82244-334	0.2686	Pass		
	6/25/2011 1:21:34 PM	82243-334	0.2694	Pass	100.30	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV236						
	6/25/2011 11:19:44 AM	82245-334	0.2759	Pass		
	6/25/2011 1:22:02 PM	82244-334	0.2647	Pass	95.960	Pass
AV237						
	6/25/2011 11:19:48 AM	82246-334	0.2679	Pass		
	6/25/2011 1:22:14 PM	82245-334	0.2783	Pass	103.89	Pass
AV238						
	6/25/2011 11:19:52 AM	82247-334	0.2740	Pass		
	6/25/2011 1:22:47 PM	82246-334	0.2642	Pass	96.404	Pass
AV239						
	6/29/2011 4:17:46 PM	82241-334	0.2816	Pass		
	6/29/2011 5:24:20 PM	82239-334	0.2770	Pass	98.355	Pass
AV240						
	6/28/2011 9:06:33 AM	63507-334	0.2675	Pass		
	6/25/2011 1:23:31 PM	63506-334	0.2636	Pass	98.508	Pass
AV241						
	6/25/2011 11:47:42 AM	63508A-334	0.2600	Pass		
	6/25/2011 1:23:51 PM	63507-334	0.2602	Pass	100.06	Pass
AV242						
	6/25/2011 11:47:57 AM	63509A-334	0.2680	Pass		
	6/25/2011 1:24:10 PM	63508A-334	0.2667	Pass	99.534	Pass
AV243						
	6/25/2011 9:28:07 AM	82232-334	0.2795	Pass		
	6/25/2011 1:24:52 PM	63509A-334	0.2676	Pass	95.760	Pass
AV244						
	6/25/2011 12:07:09 PM	82233-334	0.2858	Pass		
	6/25/2011 1:25:04 PM	82232-334	0.2904	Pass	101.61	Pass
AV245						
	6/25/2011 12:07:13 PM	82234-334	0.2856	Pass		
	6/25/2011 1:25:24 PM	82233-334	0.2793	Pass	97.792	Pass
AV246						
	6/25/2011 12:07:17 PM	82235-334	0.2981	Pass		
	6/25/2011 1:25:53 PM	82234-334	0.2968	Pass	99.576	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV247						
	6/28/2011 9:04:33 AM	82236-334	0.2721	Pass		
	6/28/2011 9:04:52 AM	82235-334	0.2774	Pass	101.94	Pass
AV248						
	6/28/2011 9:09:30 AM	82237-334	0.2651	Pass		
	6/28/2011 9:09:48 AM	82236-334	0.2698	Pass	101.77	Pass
AV249						
	6/28/2011 9:10:11 AM	82238-334	0.2852	Pass		
	6/28/2011 9:10:27 AM	82237-334	0.2781	Pass	97.510	Pass
AV250						
	6/28/2011 9:10:53 AM	82239-334	0.2800	Pass		
	6/28/2011 9:11:12 AM	82238-334	0.2820	Pass	100.71	Pass

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Alpha Vision
Yearly Calibrations
Updated 2/22/12

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV22						
Dec2011_AV22	2/21/2012 2:57:59 PM	82237-334	0.2680	Pass		
Dec2011a_AV22_ICV	12/8/2011 2:38:54 PM	82236-334	0.2670	Pass	99.6280	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Wednesday, February 22, 2012 **Page 1 of 1**

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV48						
June2011A_AV48	2/21/2012 2:58:50 PM	82237-334	0.2748	Pass		
June2011_AV48_ICV	6/28/2011 9:18:29 PM	82236-334	0.2720	Pass	98.9875	Pass
AV88						
May2011_AV88	2/21/2012 2:59:57 PM	82237-334	0.2736	Pass		
June2011_AV88_ICV	6/28/2011 9:33:31 PM	82236-334	0.2783	Pass	101.747	Pass
AV103						
June2011_AV103a	2/21/2012 3:00:31 PM	82237-334	0.2722	Pass		
June2011_AV103a_ICVb	6/29/2011 8:19:11 PM	82236-334	0.2718	Pass	99.8524	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV68						
May2011_AV68	2/21/2012 2:59:22 PM	82237-334	0.2733	Pass		
June2011_AV68_ICV	6/2/2011 5:28:05 PM	82236-334	0.2767	Pass	101.258	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV128						
June2011_AV128	2/21/2012 3:01:06 PM	82237-334	0.2692	Pass		
June2011_AV128_ICV	6/10/2011 3:00:38 PM	82236-334	0.2737	Pass	101.685	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV160						
June2011A_AV160	2/21/2012 3:02:57 PM	82237-334	0.2708	Pass		
June2011A_AV160_ICV	6/30/2011 9:07:22 AM	82236-334	0.2656	Pass	98.0720	Pass
AV168						
June2011_AV168	2/21/2012 3:03:27 PM	82237-334	0.2704	Pass		
June2011_AV168_ICV	6/27/2011 9:34:45 PM	82236-334	0.2702	Pass	99.9393	Pass
AV179						
June2011B_AV179	2/21/2012 3:03:50 PM	82237-334	0.2821	Pass		
June2011_AV179b_ICV	6/30/2011 10:17:36 AM	82236-334	0.2866	Pass	101.588	Pass
AV228						
June2011A_AV228	2/21/2012 3:04:50 PM	82237-334	0.2834	Pass		
June2011A_AV228_ICV	6/28/2011 9:07:46 AM	82236-334	0.2863	Pass	101.035	Pass
AV248						
June2011_AV248	2/21/2012 3:05:18 PM	82237-334	0.2726	Pass		
June2011_AV248_ICV	6/28/2011 9:09:48 AM	82236-334	0.2698	Pass	98.9835	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV205						
Dec2011_AV205	2/21/2012 3:04:20 PM	82237-334	0.2688	Pass		
Dec2011_AV205_ICV	12/16/2011 3:08:08 AM	82236-334	0.2684	Pass	99.8398	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:52:46AM 7/25/2011

Calibration

Name: June2011A_AV43
Description:
Detector: AV43

Calibration Date: 6/20/2011 1:52:02AM
Analyst: 60040

Source Info

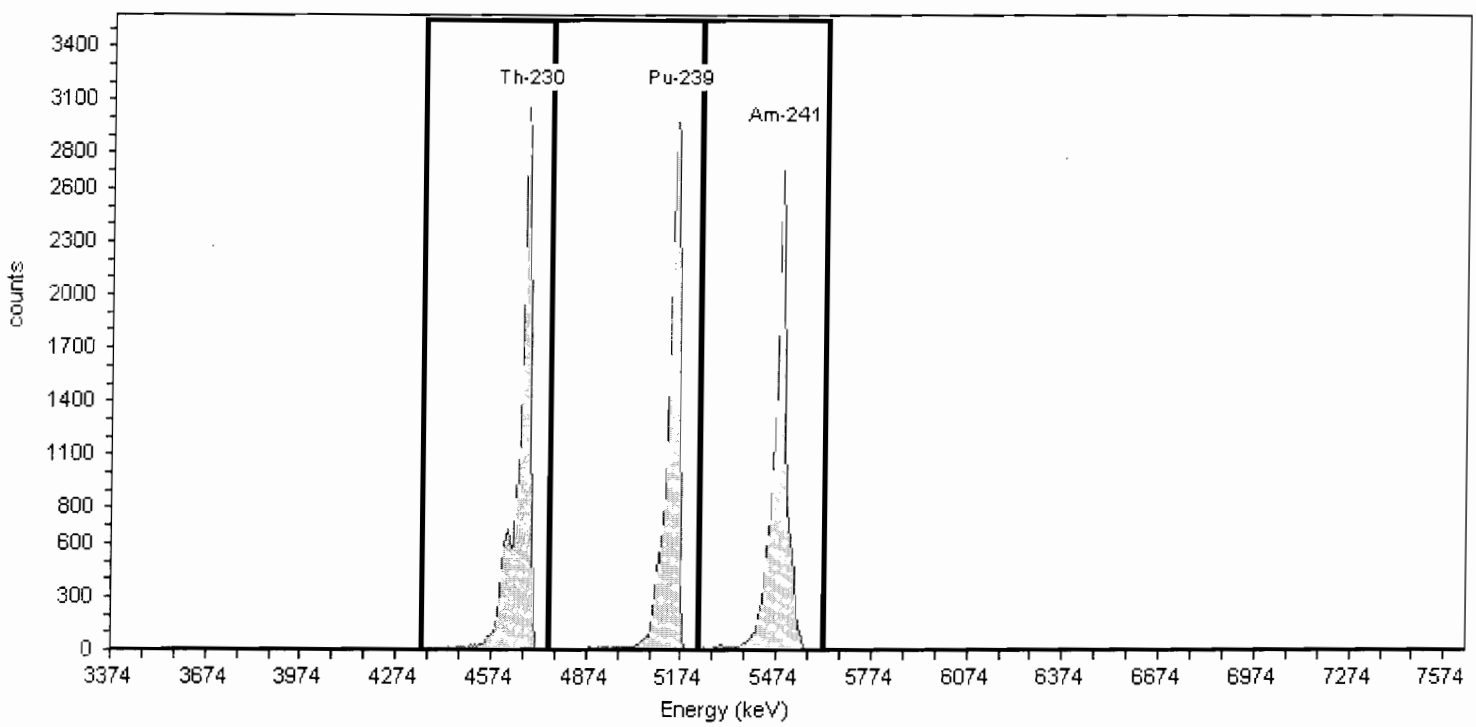
Certificate ID: 82232-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV43 , SN: 50-051c5
Acquisition Start Date: 6/19/2011 11:25:36PM
Live Time: 140.00 min.
Real Time: 140.02 min.
Efficiency: 27.86% +/- 0.31% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	17,908.00	127.91
Pu-239	240	5.16	186	249	16,770.00	119.79
Am-241	284	5.49	249	303	16,909.00	120.78

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:52:51AM 7/25/2011

Calibration

Name: June2011A_AV43_ICV
Description:
Detector: AV43

Calibration Date: 6/20/2011 4:09:28AM
Analyst: 60040

Source Info

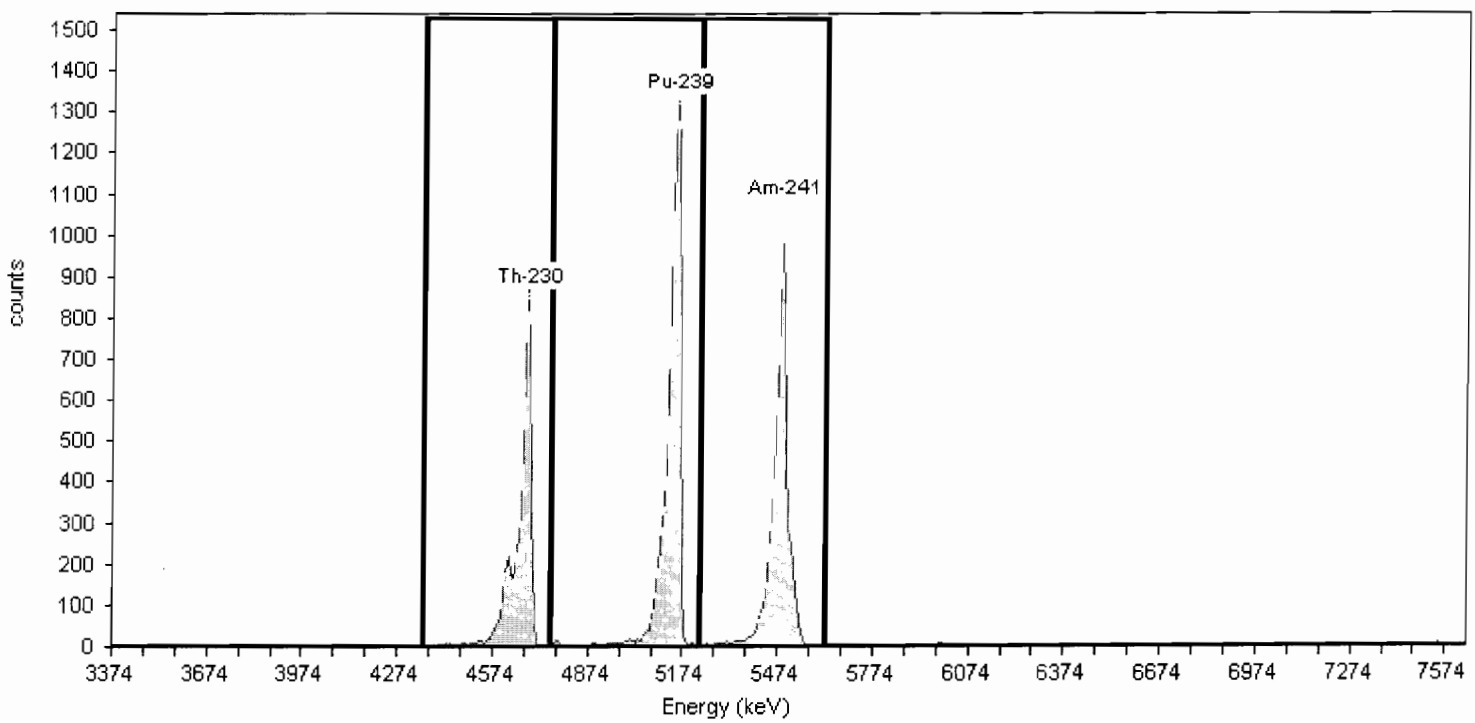
Certificate ID: 63509A-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:00PM
Description:

Acquisition

Detector: AV43 , SN: 50-051c5
Acquisition Start Date: 6/20/2011 3:06:14AM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 26.84% +/- 0.40% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	4,965.00	82.75
Pu-239	240	5.16	186	249	7,611.00	126.85
Am-241	284	5.49	249	303	6,306.00	105.10

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:52:59AM 7/25/2011

Calibration

Name: June2011A_AV44
Description:
Detector: AV44

Calibration Date: 6/20/2011 8:43:44AM
Analyst: 60040

Source Info

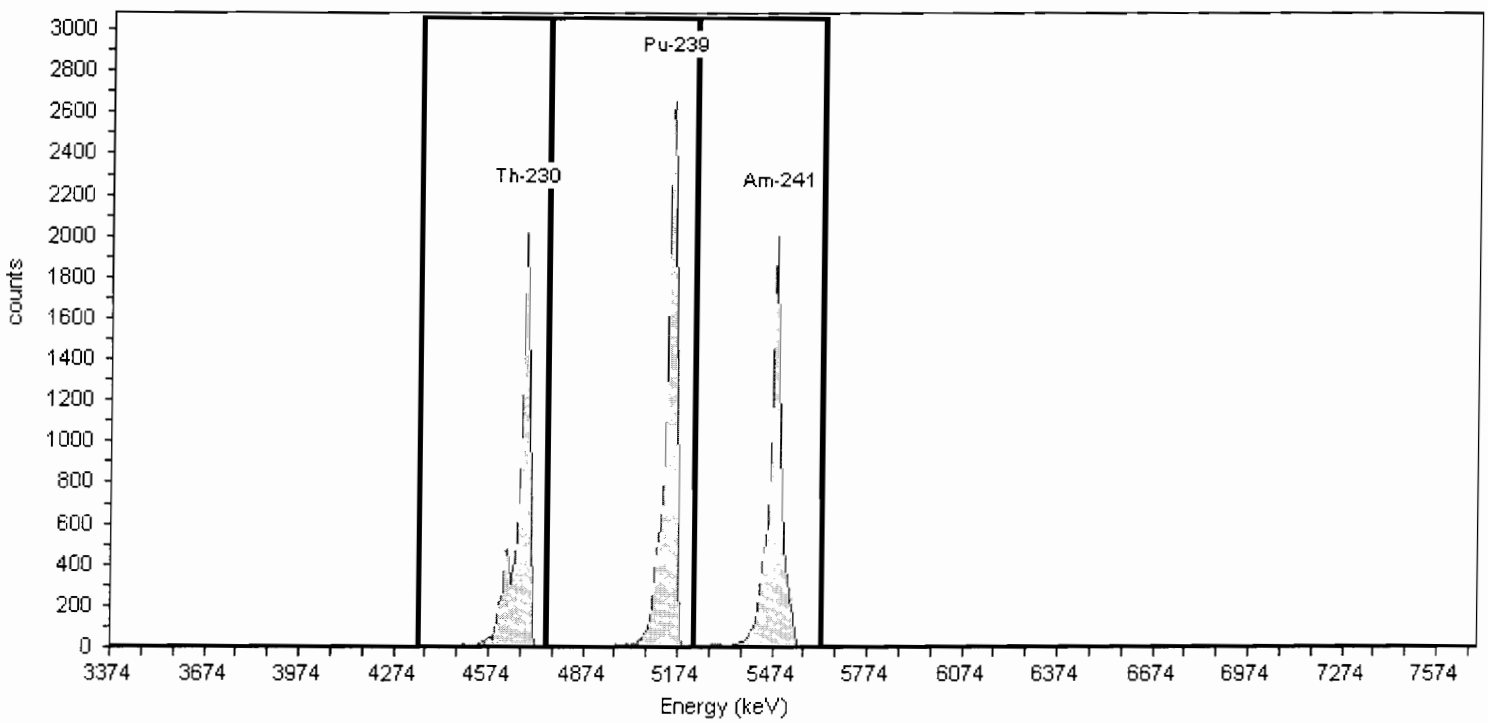
Certificate ID: 82233-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV44 , SN: 50-051JJ1
Acquisition Start Date: 6/20/2011 3:15:32AM
Live Time: 140.00 min.
Real Time: 140.06 min.
Efficiency: 27.08% +/- 0.38% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	10,992.00	78.51
Pu-239	240	5.16	186	249	13,947.00	99.62
Am-241	284	5.49	249	303	11,735.00	83.82

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:53:04AM 7/25/2011

Calibration

Name: June2011_AV44_ICV
Description:
Detector: AV44

Calibration Date: 6/20/2011 12:55:44PM
Analyst: 60040

Source Info

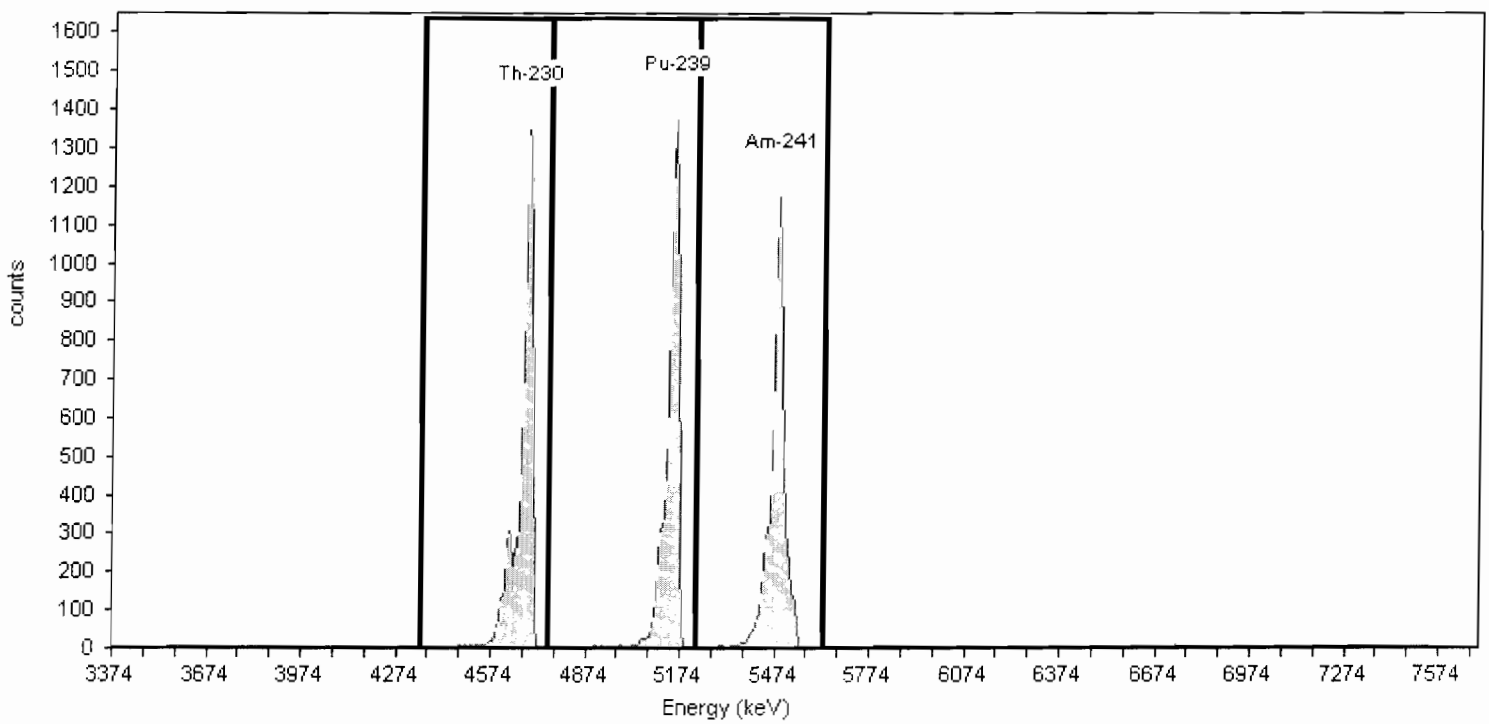
Certificate ID: 82232-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV44 , SN: 50-051JJ1
Acquisition Start Date: 6/20/2011 11:28:33AM
Live Time: 60.00 min.
Real Time: 60.03 min.
Efficiency: 27.60% +/- 0.42% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	7,581.00	126.35
Pu-239	240	5.16	186	249	7,101.00	118.35
Am-241	284	5.49	249	303	7,221.00	120.35

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:53:12AM 7/25/2011

Calibration

Name: June2011_AV45
Description:
Detector: AV45

Calibration Date: 6/2/2011 6:09:33AM
Analyst: 60040

Source Info

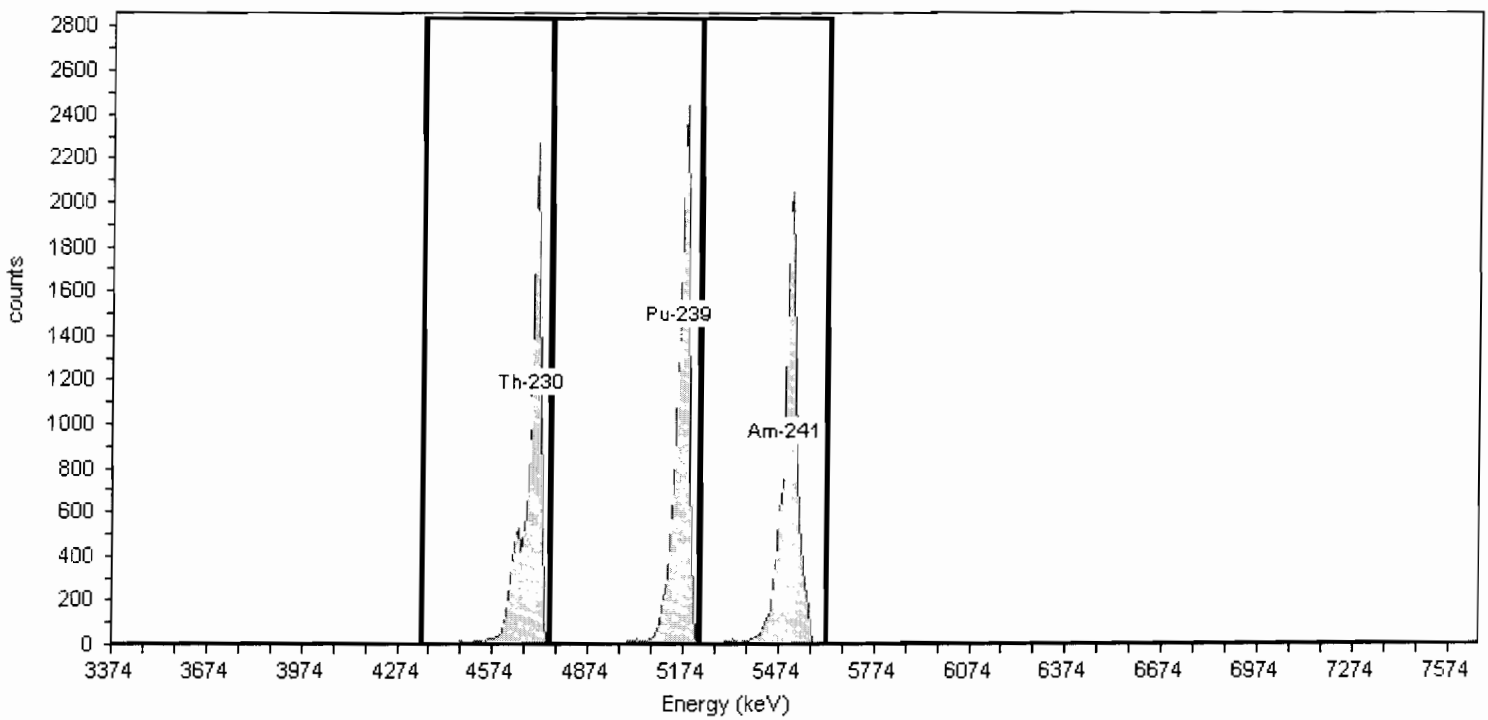
Certificate ID: 82234-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV45 , SN: 48-158FF2
Acquisition Start Date: 6/1/2011 5:38:02PM
Live Time: 140.00 min.
Real Time: 140.12 min.
Efficiency: 28.11% +/- 0.38% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	13,296.00	94.97
Pu-239	240	5.16	186	249	14,066.00	100.47
Am-241	284	5.49	249	303	13,424.00	95.89

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:12:44PM 7/25/2011

Calibration

Name: June2011_AV45_ICV
Description:
Detector: AV45

Calibration Date: 7/25/2011 12:12:41PM
Analyst: 60040

Source Info

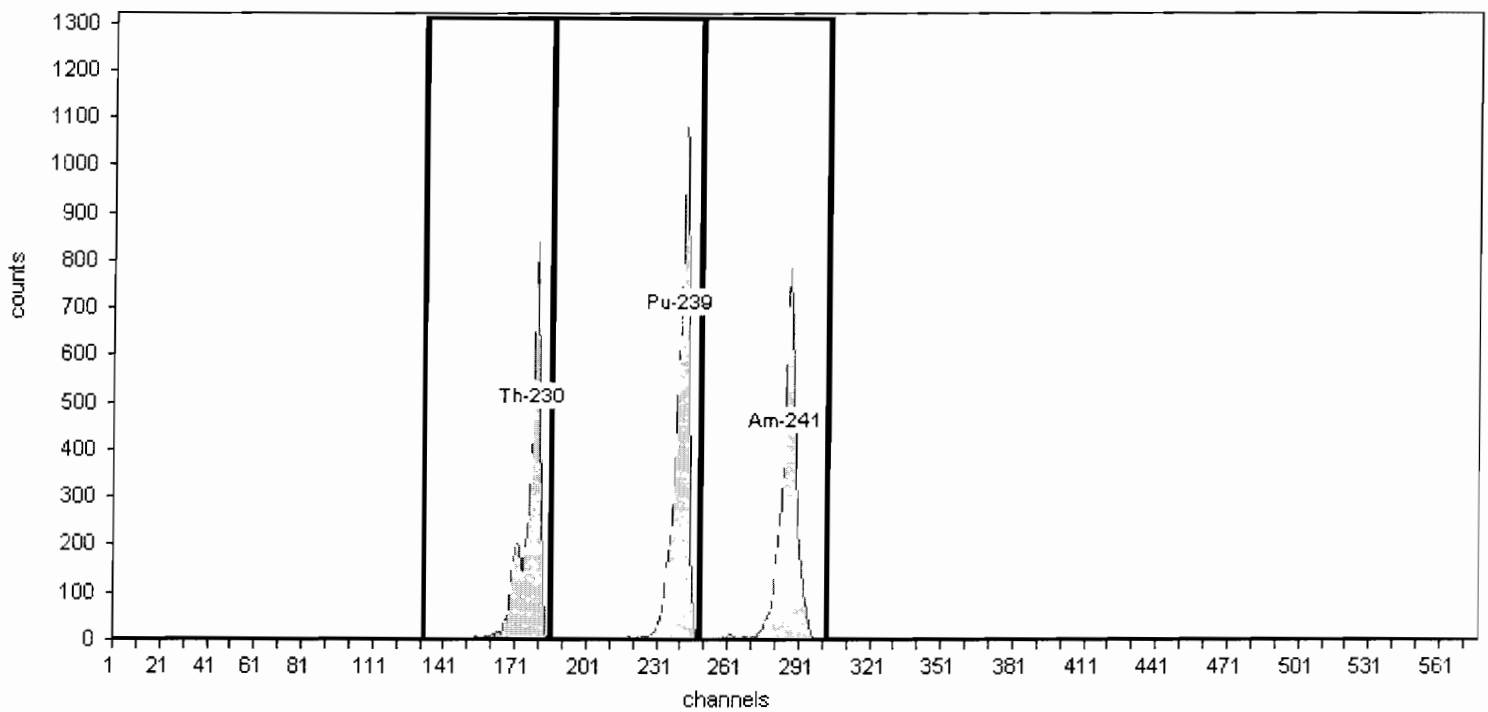
Certificate ID: 82233-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV45 , SN: 48-158FF2
Acquisition Start Date: 6/2/2011 12:15:30PM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 27.43% +/- 0.51% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	4,768.00	79.47
Pu-239	240	5.16	186	249	6,047.00	100.78
Am-241	284	5.49	249	303	5,109.00	85.15

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:35:27AM 2/27/2012

Calibration

Name: February2012_AV46
Description:
Detector: AV46

Calibration Date: 2/24/2012 9:01:09AM
Analyst: 60040

Source Info

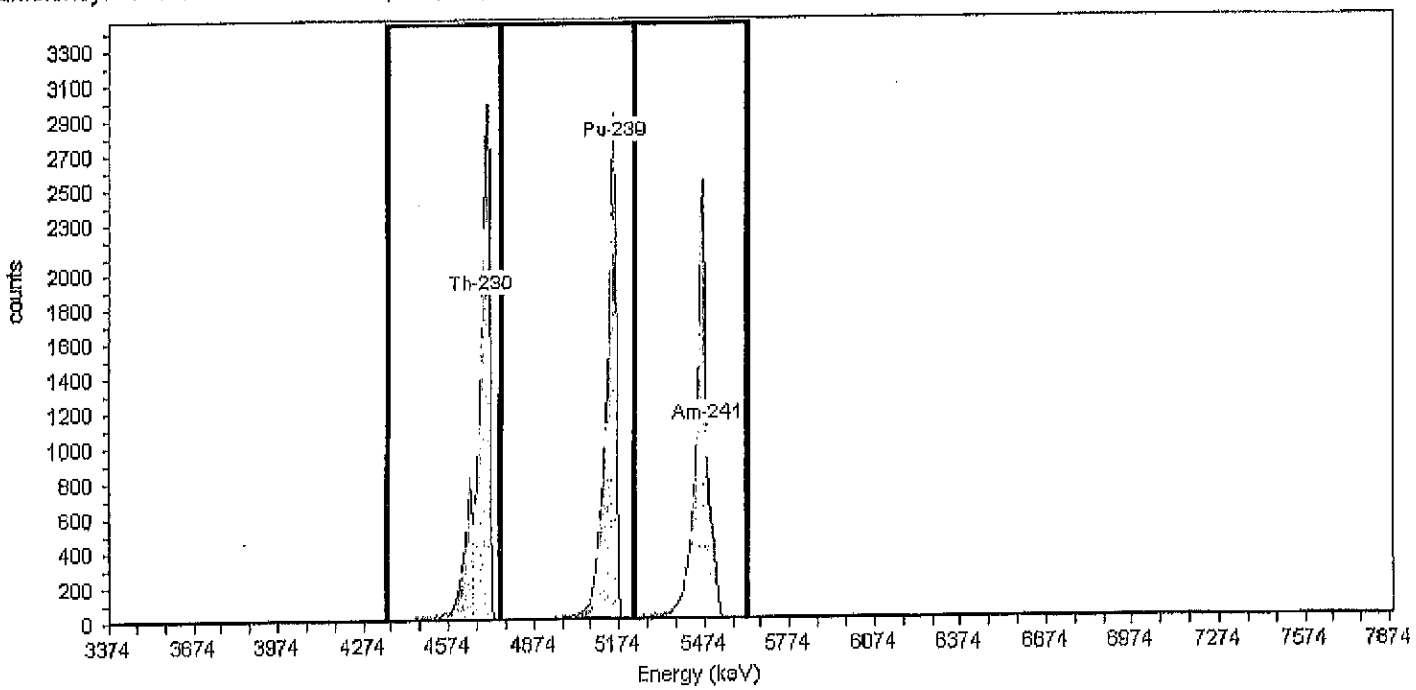
Certificate ID: 82244-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV46 , SN: 49-202GG2
Acquisition Start Date: 2/23/2012 11:02:53PM
Live Time: 140.00 min.
Real Time: 140.06 min.
Efficiency: 27.21% +/- 0.32% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	188	16,968.00	121.20
Pu-239	240	5.16	186	249	15,336.00	109.54
Am-241	284	5.49	249	303	15,579.00	111.28

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:35:32AM 2/27/2012

Calibration

Name: Feb2012_AV46_ICV
Description:
Detector: AV46

Calibration Date: 2/24/2012 12:25:10PM
Analyst: 60040

Source Info

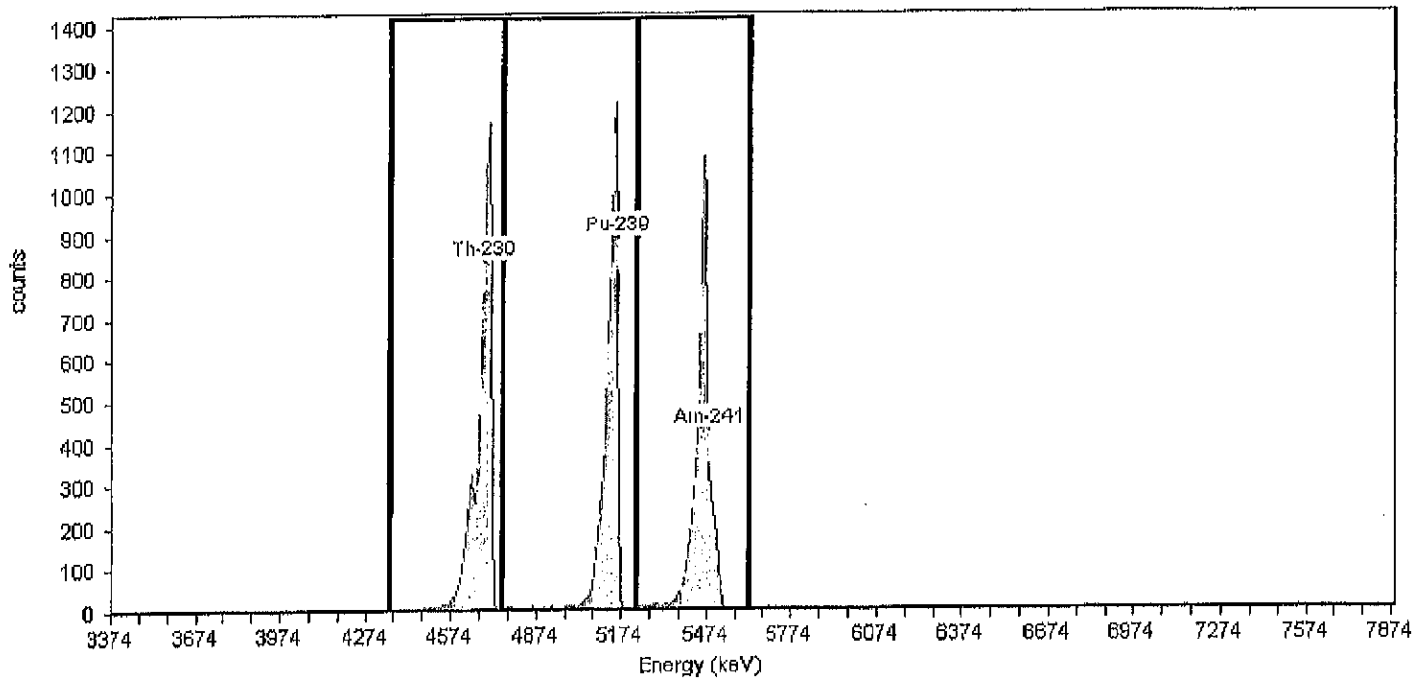
Certificate ID: 82236-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV46 , SN: 49-202GG2
Acquisition Start Date: 2/24/2012 11:21:49AM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 27.68% +/- 0.44% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	7,037.00	117.28
Pu-239	240	5.16	186	249	6,767.00	112.78
Am-241	284	5.49	249	303	6,781.00	113.02

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:53:27AM 7/25/2011

Calibration

Name: June2011A_AV47
Description:
Detector: AV47

Calibration Date: 6/20/2011 8:43:55AM
Analyst: 60040

Source Info

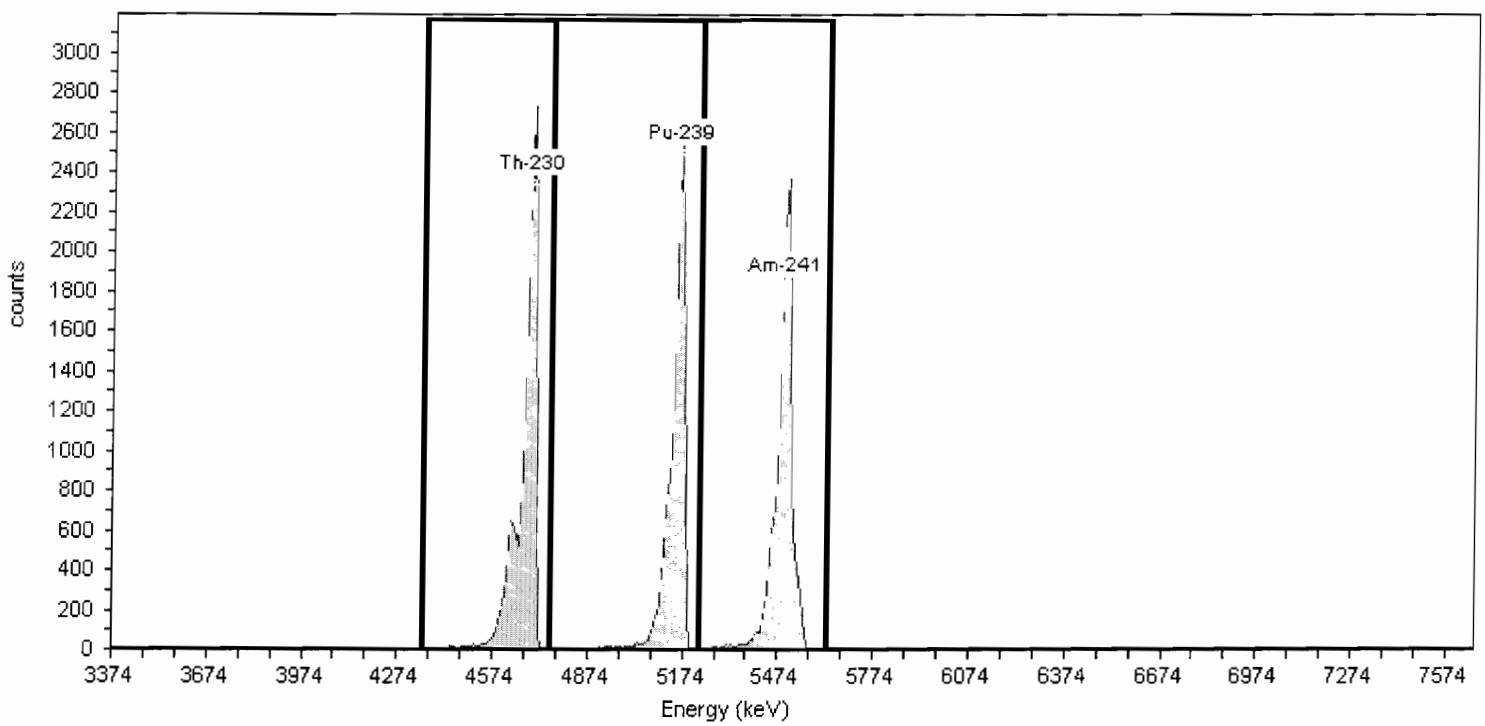
Certificate ID: 82236-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV47 , SN: 50-051C7
Acquisition Start Date: 6/20/2011 3:41:59AM
Live Time: 140.00 min.
Real Time: 140.05 min.
Efficiency: 26.91% +/- 0.32% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	16,107.00	115.05
Pu-239	240	5.16	186	249	15,118.00	107.99
Am-241	284	5.49	249	303	15,482.00	110.59

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:53:32AM 7/25/2011

Calibration

Name: June2011_AV47_ICV
Description:
Detector: AV47

Calibration Date: 6/20/2011 12:55:48PM
Analyst: 60040

Source Info

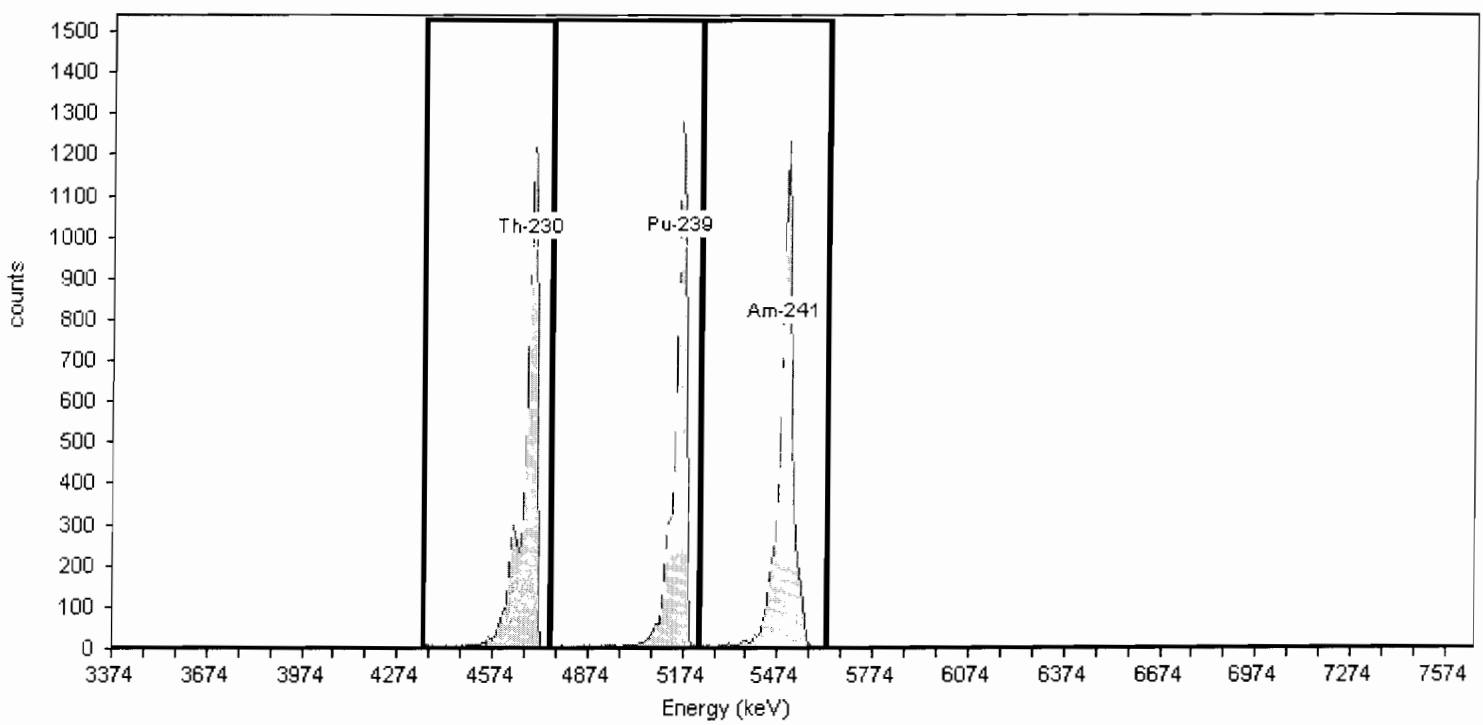
Certificate ID: 82235-334
Prepared by: Analytics

Certification Date: 6/4/2010 12:00:00PM
Description:

Acquisition

Detector: AV47 , SN: 50-051C7
Acquisition Start Date: 6/20/2011 11:29:26AM
Live Time: 60.00 min.
Real Time: 60.03 min.
Efficiency: 27.85% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	7,241.00	120.68
Pu-239	240	5.16	186	249	6,887.00	114.78
Am-241	284	5.49	249	303	7,457.00	124.28

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:58:54PM 2/21/2012

Calibration

Name: June2011A_AV48
Description:
Detector: AV48

Calibration Date: 2/21/2012 2:58:50PM
Analyst: 60040

Source Info

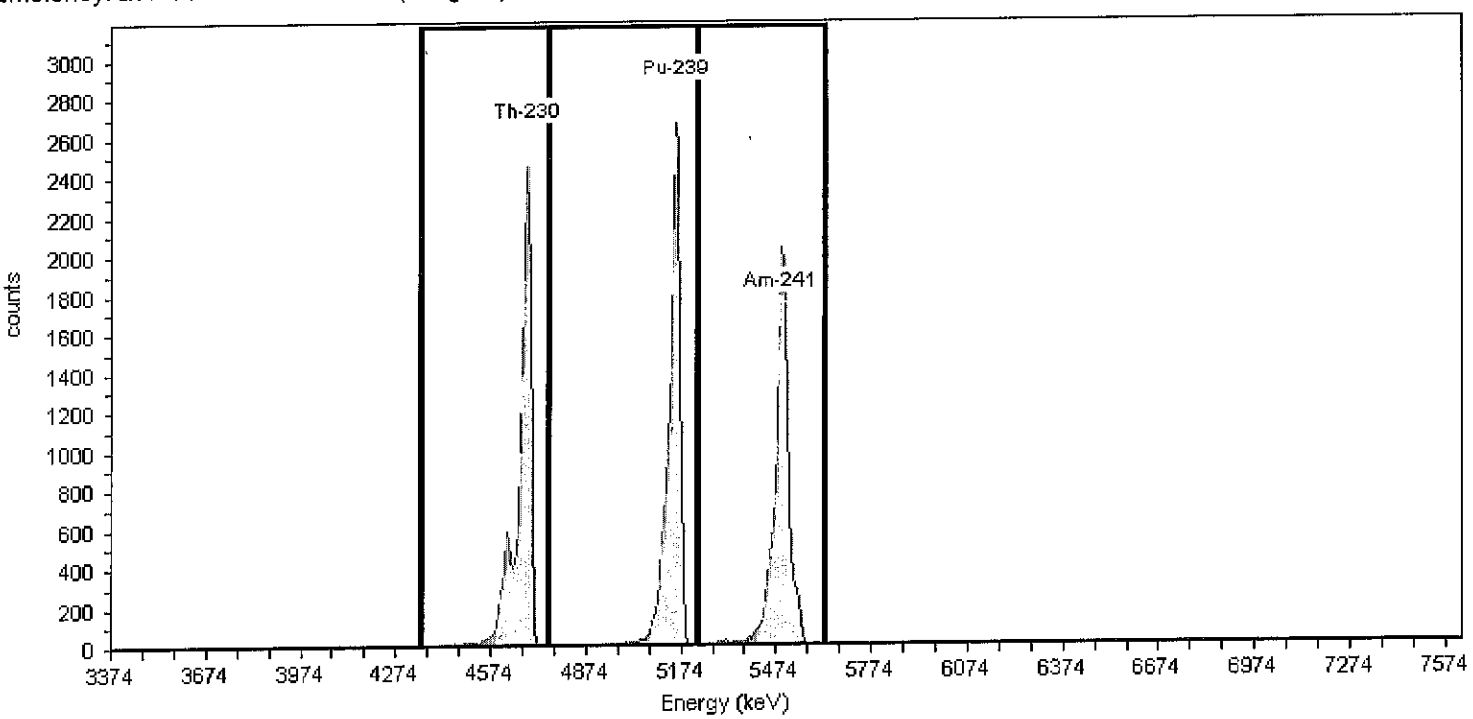
Certificate ID: 82237-334
Prepared by: Analytics

Certification Date: 6/1/2010 12:00:00PM
Description:

Acquisition

Detector: AV48 , SN: 50-051JJ4
Acquisition Start Date: 6/20/2011 3:50:19AM
Live Time: 140.00 min.
Real Time: 140.05 min.
Efficiency: 27.48% +/- 0.37% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	13,675.00	97.68
Pu-239	240	5.16	186	249	14,590.00	104.21
Am-241	284	5.49	249	303	13,061.00	93.29

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:53:45AM 7/25/2011

Calibration

Name: June2011_AV48_ICV
Description:
Detector: AV48

Calibration Date: 6/28/2011 9:18:29PM
Analyst: 60040

Source Info

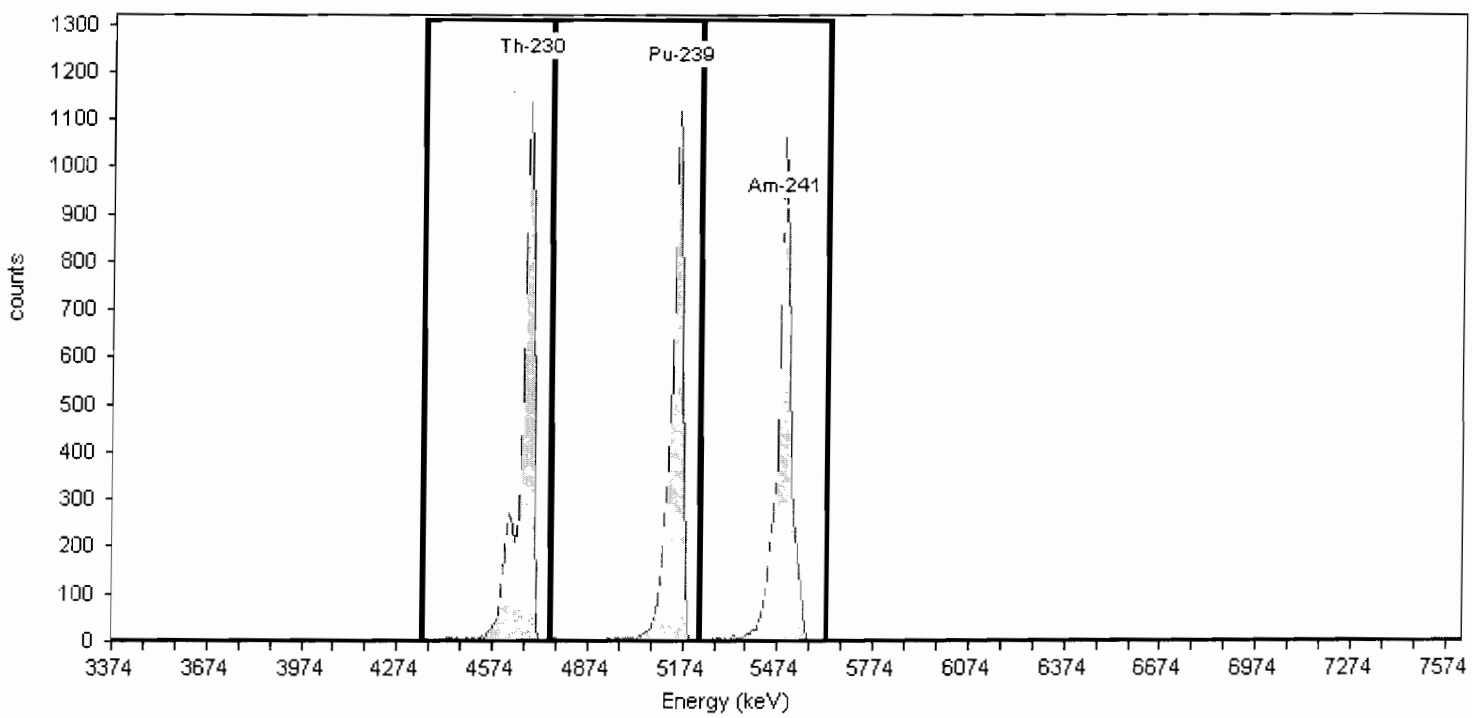
Certificate ID: 82236-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV48 , SN: 50-051JJ4
Acquisition Start Date: 6/20/2011 11:29:58AM
Live Time: 60.00 min.
Real Time: 60.03 min.
Efficiency: 27.20% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,903.00	115.05
Pu-239	240	5.16	186	249	6,455.00	107.58
Am-241	284	5.49	249	303	6,876.00	114.60

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:53:54AM 7/25/2011

Calibration

Name: June2011_AV49
Description:
Detector: AV49

Calibration Date: 6/2/2011 6:09:47AM
Analyst: 60040

Source Info

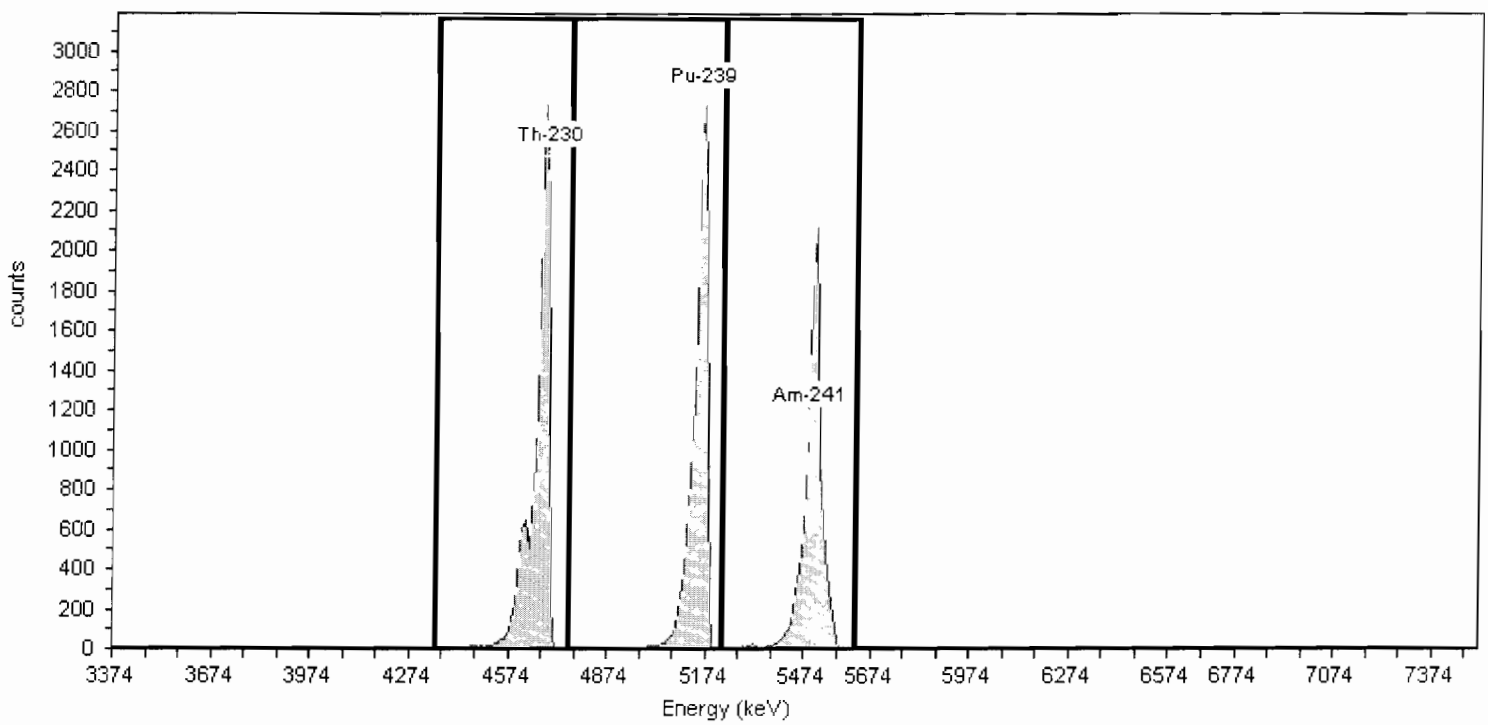
Certificate ID: 82238-334
Prepared by: Analytics

Certification Date: 6/1/2010 12:00:00PM
Description:

Acquisition

Detector: AV49 , SN: 46-022AA3
Acquisition Start Date: 6/1/2011 5:39:26PM
Live Time: 140.00 min.
Real Time: 140.12 min.
Efficiency: 28.49% +/- 0.37% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	16,767.00	119.76
Pu-239	240	5.16	186	249	16,402.00	117.16
Am-241	284	5.49	249	303	14,205.00	101.46

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:54:00AM 7/25/2011

Calibration

Name: June2011_AV49_ICV
Description:
Detector: AV49

Calibration Date: 6/2/2011 5:27:16PM
Analyst: 60040

Source Info

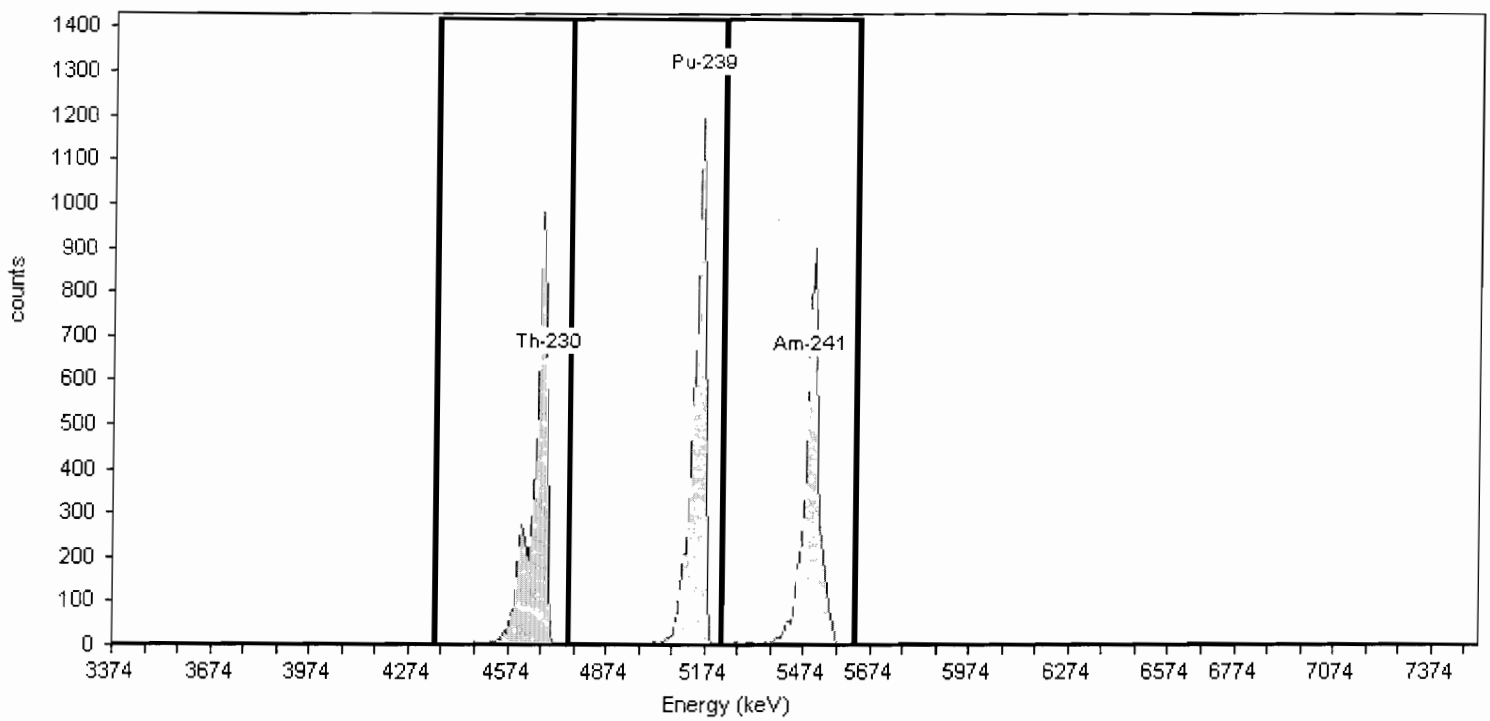
Certificate ID: 82237-334
Prepared by: Analytics

Certification Date: 6/1/2010 12:00:00PM
Description:

Acquisition

Detector: AV49 , SN: 46-022AA3
Acquisition Start Date: 6/2/2011 12:20:06PM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 27.45% +/- 0.48% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,030.00	100.50
Pu-239	240	5.16	186	249	6,455.00	107.58
Am-241	284	5.49	249	303	5,717.00	95.28

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Yearly Calibration
Alpha Vision
May 2012
AV48 and AV56

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency (20-32%)	Recov (+/-5%)
AV1 Dec2011_AV1	12/15/2011 9:30:49 AM	82232-334	0.2769	Pass
AV2 Dec2011_AV2	12/15/2011 9:31:52 AM	82233-334	0.2696	Pass
AV3 June2011_AV3	6/1/2011 2:07:22 PM	63508A-334	0.2671	Pass
AV4 June2011_AV4	6/1/2011 2:07:26 PM	63509A-334	0.2679	Pass
AV6 June2011_AV6	6/1/2011 2:08:00 PM	82233-334	0.2795	Pass
AV7 June2011_AV7	6/1/2011 2:08:04 PM	82234-334	0.2783	Pass
AV8 June2011_AV8	6/1/2011 2:08:08 PM	82235-334	0.2799	Pass
AV9 Feb2012_AV9a	2/22/2012 5:00:30 PM	82240-334	0.2776	Pass
AV10 Feb2012_AV10a	2/22/2012 8:32:27 PM	82241-334	0.2709	Pass
AV11 Dec2011_AV11	12/15/2011 1:33:27 PM	82242-334	0.2749	Pass
AV12 Feb2012_AV12a	2/22/2012 5:00:57 PM	82243-334	0.2682	Pass
AV13 June2011_AV13a	6/1/2011 2:12:53 PM	82240-334	0.2795	Pass
AV14 Dec2011_AV14	12/15/2011 9:32:53 AM	82245-334	0.2806	Pass
AV15 June2011_AV15	6/1/2011 2:13:10 PM	82242-334	0.2731	Pass
AV16 Feb2012_AV16a	2/22/2012 5:01:24 PM	82247-334	0.2769	Pass
AV17 June2011A_AV17	6/10/2011 2:02:28 PM	82244-334	0.2619	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV18						
Feb2012_AV18a	2/22/2012 5:01:33 PM	82233-334	0.2699	Pass		
AV19						
Dec2011_AV19	12/8/2011 9:35:31 AM	82234-334	0.2724	Pass		
AV20						
June2011_AV20	6/1/2011 2:13:04 PM	82247-334	0.2701	Pass		
AV21						
June2011_AV21b	6/29/2011 3:56:43 PM	63508A-334	0.2596	Pass		
AV22						
Dec2011_AV22	2/21/2012 2:57:59 PM	82237-334	0.2680	Pass		
AV23						
June2011_AV23	6/2/2011 6:09:19 AM	63508A-334	0.2563	Pass		
AV24						
Dec2011_AV24	12/15/2011 9:33:47 AM	82240-334	0.2717	Pass		
AV43						
June2011A_AV43	6/20/2011 1:52:02 AM	82232-334	0.2786	Pass		
AV44						
June2011A_AV44	6/20/2011 8:43:44 AM	82233-334	0.2708	Pass		
AV45						
June2011_AV45	6/2/2011 6:09:33 AM	82234-334	0.2811	Pass		
AV46						
February2012_AV46	2/24/2012 9:01:09 AM	82244-334	0.2721	Pass		
AV47						
June2011A_AV47	6/20/2011 8:43:55 AM	82236-334	0.2691	Pass		
AV48						
May2012_AV48	5/3/2012 9:38:16 AM	82237-334	0.2725	Pass		
May2012_AV48_ICV	5/3/2012 9:38:44 AM	82238-334	0.2704	Pass	99.2470	Pass
AV49						
June2011_AV49	6/2/2011 6:09:47 AM	82238-334	0.2849	Pass		
AV50						
February2012_AV50	2/24/2012 9:01:31 AM	82232-334	0.2822	Pass		
AV51						
June2011_AV51	6/2/2011 6:09:53 AM	82240-334	0.2771	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV52						
June2011_AV52	6/2/2011 6:09:56 AM	82241-334	0.2870	Pass		
AV53						
Dec2011_AV53	12/15/2011 9:35:01 AM	82235-334	0.2846	Pass		
AV54						
June2011_AV54	6/2/2011 6:10:00 AM	82243-334	0.2719	Pass		
AV55						
June2011A_AV55	6/20/2011 8:44:19 AM	82244-334	0.2685	Pass		
AV56						
May2012_AV56	5/3/2012 9:37:34 AM	82238-334	0.2680	Pass		
May2012_AV56_ICV	5/3/2012 9:37:51 AM	82246-334	0.2612	Pass	97.4594	Pass
AV57						
Dec2011_AV57	12/13/2011 9:33:31 AM	82240-334	0.2792	Pass		
AV58						
February2012_AV58	2/24/2012 9:01:54 AM	82241-334	0.2829	Pass		
AV59						
February2012_AV59	2/24/2012 9:02:17 AM	82242-334	0.2794	Pass		
AV60						
May2011_AV60	6/2/2011 11:03:44 AM	63507-334	0.2647	Pass		
AV61						
June2011_AV61	6/20/2011 2:14:49 PM	63508A-334	0.2663	Pass		
AV62						
May2011_AV62	6/2/2011 11:15:48 AM	63509A-334	0.2723	Pass		
AV63						
Feb2012_AV63	2/23/2012 4:05:57 PM	82246-334	0.2686	Pass		
AV64						
May2011_AV64	6/2/2011 11:16:26 AM	82233-334	0.2832	Pass		
AV65						
Feb2012_AV65	2/23/2012 4:06:15 PM	82232-334	0.2841	Pass		
AV66						
Dec2011_AV66	12/13/2011 9:35:41 AM	82233-334	0.2772	Pass		
AV67						
May2011_AV67	6/2/2011 11:17:07 AM	82236-334	0.2930	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov	(+/-5%)
AV68 May2011_AV68	2/21/2012 2:59:22 PM	82237-334	0.2733	Pass	
AV69 June2011_AV69	6/21/2011 2:25:40 PM	82238-334	0.2749	Pass	
AV70 June2011_AV70	6/21/2011 2:26:58 PM	82239-334	0.2763	Pass	
AV71 May2011_AV71	6/2/2011 11:17:45 AM	82240-334	0.2741	Pass	
AV72 May2011_AV72	6/2/2011 11:17:59 AM	82241-334	0.2892	Pass	
AV73 Dec2011_AV73	12/16/2011 2:11:57 PM	82241-334	0.2786	Pass	
AV74 Dec2011_AV74b	12/13/2011 12:09:06 PM	82242-334	0.2738	Pass	
AV75 May2011_AV75	6/2/2011 11:18:19 AM	82244-334	0.2642	Pass	
AV77 May2011_AV77	6/2/2011 11:18:32 AM	82246-334	0.2664	Pass	
AV78 May2011_AV78	6/2/2011 11:18:45 AM	82247-334	0.2767	Pass	
AV79 June2011_AV79c	6/29/2011 3:57:04 PM	82232-334	0.2834	Pass	
AV80 May2011_AV80	6/10/2011 5:01:32 PM	63507-334	0.2579	Pass	
AV81 Dec2011_AV81	12/15/2011 12:13:48 PM	82233-334	0.2814	Pass	
AV82 May2011_AV82	6/28/2011 9:27:42 PM	63509A-334	0.2676	Pass	
AV83 May2011_AV83	6/28/2011 9:28:42 PM	82232-334	0.2783	Pass	
AV84 May2011_AV84	6/28/2011 9:29:52 PM	82233-334	0.2740	Pass	
AV85 May2011_AV85	6/28/2011 9:30:57 PM	82234-334	0.2852	Pass	

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov	(+/-5%)
AV86 May2011_AV86	6/28/2011 9:31:44 PM	82235-334	0.2811	Pass	
AV87 June2011_AV87	6/21/2011 2:25:24 PM	82236-334	0.2944	Pass	
AV88 May2011_AV88	2/21/2012 2:59:57 PM	82237-334	0.2736	Pass	
AV89 May2011_AV89	6/2/2011 11:21:41 AM	82238-334	0.2698	Pass	
AV90 May2011_AV90	6/28/2011 9:34:16 PM	82239-334	0.2753	Pass	
AV91 March2012_AV91a	3/30/2012 9:27:41 AM	82235-334	0.2781	Pass	
AV92 May2011_AV92	6/28/2011 9:35:11 PM	82241-334	0.2775	Pass	
AV93 May2011_AV93	6/10/2011 5:05:03 PM	82242-334	0.2772	Pass	
AV94 June2011_AV94a	6/29/2011 3:57:09 PM	82247-334	0.2751	Pass	
AV95 June2011_AV95b	6/30/2011 8:32:04 PM	82244-334	0.2663	Pass	
AV96 June2011_AV96	6/21/2011 2:25:55 PM	82245-334	0.2743	Pass	
AV97 May2011_AV97	6/28/2011 9:40:29 PM	82246-334	0.2715	Pass	
AV98 May2011_AV98	6/28/2011 9:41:09 PM	82247-334	0.2807	Pass	
AV99 Dec2011_AV99a	12/15/2011 1:34:42 PM	82236-334	0.2661	Pass	
AV100 June2011_AV100	6/10/2011 2:41:33 PM	63507-334	0.2630	Pass	
AV101 June2011_AV101	6/10/2011 2:42:11 PM	63508A-334	0.2594	Pass	
AV102 June2011_AV102	6/10/2011 2:42:28 PM	63509A-334	0.2668	Pass	

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov (+/-5%)
AV103 June2011_AV103a	2/21/2012 3:00:31 PM	82237-334	0.2722	Pass
AV104 June2011_AV104	6/10/2011 2:45:37 PM	82233-334	0.2711	Pass
AV105 June2011_AV105	6/10/2011 2:48:33 PM	82234-334	0.2601	Pass
AV106 June2011_AV106	6/10/2011 2:49:36 PM	82235-334	0.2828	Pass
AV107 June2011_AV107	6/10/2011 2:49:58 PM	82236-334	0.2809	Pass
AV108 Dec2011_AV108a	12/15/2011 4:14:23 PM	82246-334	0.2763	Pass
AV109 June2011_AV109	6/10/2011 2:50:52 PM	82238-334	0.2642	Pass
AV110 June2011_AV110	6/10/2011 2:51:15 PM	82239-334	0.2761	Pass
AV111 June2011_AV111	6/10/2011 2:51:42 PM	82240-334	0.2742	Pass
AV112 June2011_AV112	6/10/2011 2:52:10 PM	82241-334	0.2689	Pass
AV113 June2011_AV113a	6/29/2011 8:19:17 PM	82247-334	0.2797	Pass
AV114 June2011_AV114	6/10/2011 2:53:57 PM	82243-334	0.2672	Pass
AV115 June2011_AV115	6/10/2011 2:57:31 PM	82244-334	0.2713	Pass
AV116 May2011_AV116	6/2/2011 11:22:31 AM	82245-334	0.2802	Pass
AV117 June2011_AV117	6/10/2011 2:54:57 PM	82246-334	0.2598	Pass
AV118 June2011_AV118	6/10/2011 2:55:22 PM	82247-334	0.2708	Pass
AV119 June2011_AV119a	6/29/2011 3:57:22 PM	82234-334	0.2780	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov	(+/-5%)
AV120 June2011_AV120	6/10/2011 2:56:12 PM	63507-334	0.2673	Pass	
AV121 June2011_AV121	6/10/2011 2:58:09 PM	63508A-334	0.2680	Pass	
AV122 June2011_AV122	6/10/2011 2:58:33 PM	63509A-334	0.2633	Pass	
AV123 June2011_AV123a	6/21/2011 2:27:18 PM	82232-334	0.2737	Pass	
AV124 June2011_AV124a	6/21/2011 2:26:12 PM	82233-334	0.2650	Pass	
AV125 June2011_AV125a	6/21/2011 2:26:25 PM	82234-334	0.2746	Pass	
AV126 June2011_AV126	6/3/2011 3:29:01 PM	82235-334	0.2754	Pass	
AV127 June2011A_AV127	6/28/2011 9:47:50 PM	82236-334	0.2755	Pass	
AV128 June2011_AV128	2/21/2012 3:01:06 PM	82237-334	0.2692	Pass	
AV130 June2011_AV130	6/3/2011 3:29:19 PM	82239-334	0.2686	Pass	
AV131 February2012_AV131	2/24/2012 9:02:44 AM	82238-334	0.2733	Pass	
AV132 June2011_AV132a	6/30/2011 11:37:39 AM	82247-334	0.2712	Pass	
AV133 Feb2012_AV133	2/24/2012 1:40:22 PM	82241-334	0.2654	Pass	
AV134 June2011_AV134	6/3/2011 3:29:39 PM	82243-334	0.2826	Pass	
AV135 June2011_AV135	6/3/2011 3:29:47 PM	82244-334	0.2626	Pass	
AV136 June2011_AV136	6/3/2011 3:29:51 PM	82245-334	0.2706	Pass	
AV137 June2011_AV137	6/3/2011 3:29:43 PM	82246-334	0.2746	Pass	

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov (+/-5%)
AV138 June2011_AV138	6/3/2011 3:29:55 PM	82247-334	0.2648	Pass
AV139 June2011_AV139a	6/29/2011 3:57:26 PM	82235-334	0.2713	Pass
AV140 June2011_AV140	6/3/2011 3:30:04 PM	63507-334	0.2557	Pass
AV141 June2011_AV141	6/3/2011 3:30:09 PM	63508A-334	0.2581	Pass
AV142 June2011_AV142	6/3/2011 3:30:14 PM	63509A-334	0.2631	Pass
AV143 Dec2011_AV143	12/15/2011 1:36:38 PM	82235-334	0.2708	Pass
AV144 June2011_AV144	6/10/2011 3:04:53 PM	82233-334	0.2723	Pass
AV145 June2011_AV145	6/10/2011 3:05:03 PM	82234-334	0.2749	Pass
AV146 June2011_AV146	6/10/2011 3:05:14 PM	82235-334	0.2748	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:43:32AM 5/3/2012

Calibration

Sample Name: May2012_AV48
Description:
Detector: AV48

Calibration Date: 5/3/2012 9:38:16AM
Analyst: 60040

Source Info

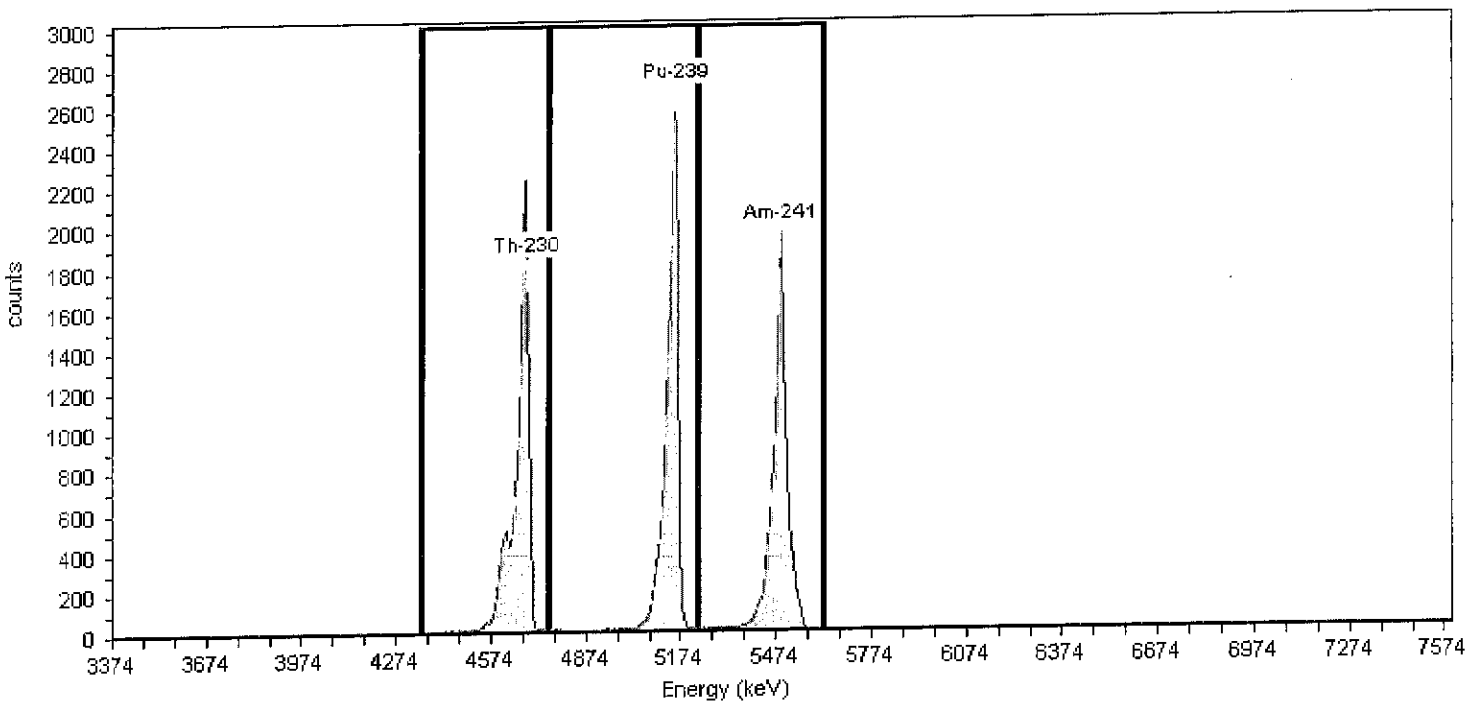
Certificate ID: 82237-334
Prepared by: Analytics

Certification Date: 6/1/2010 12:00:00PM
Description:

Acquisition

Detector: AV48 , SN: 50-051JJ4
Acquisition Start Date: 5/2/2012 11:00:36PM
Live Time: 140.00 min.
Real Time: 140.43 min.
Efficiency: 27.25% +/- 0.37% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	13,222.00	94.44
Pu-239	240	5.16	186	249	14,804.00	105.74
Am-241	284	5.49	249	303	12,886.00	92.04

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:43:40AM 5/3/2012

Calibration

Sample Name: May2012_AV48_ICV
Description:
Detector: AV48

Calibration Date: 5/3/2012 9:38:44AM
Analyst: 60040

Source Info

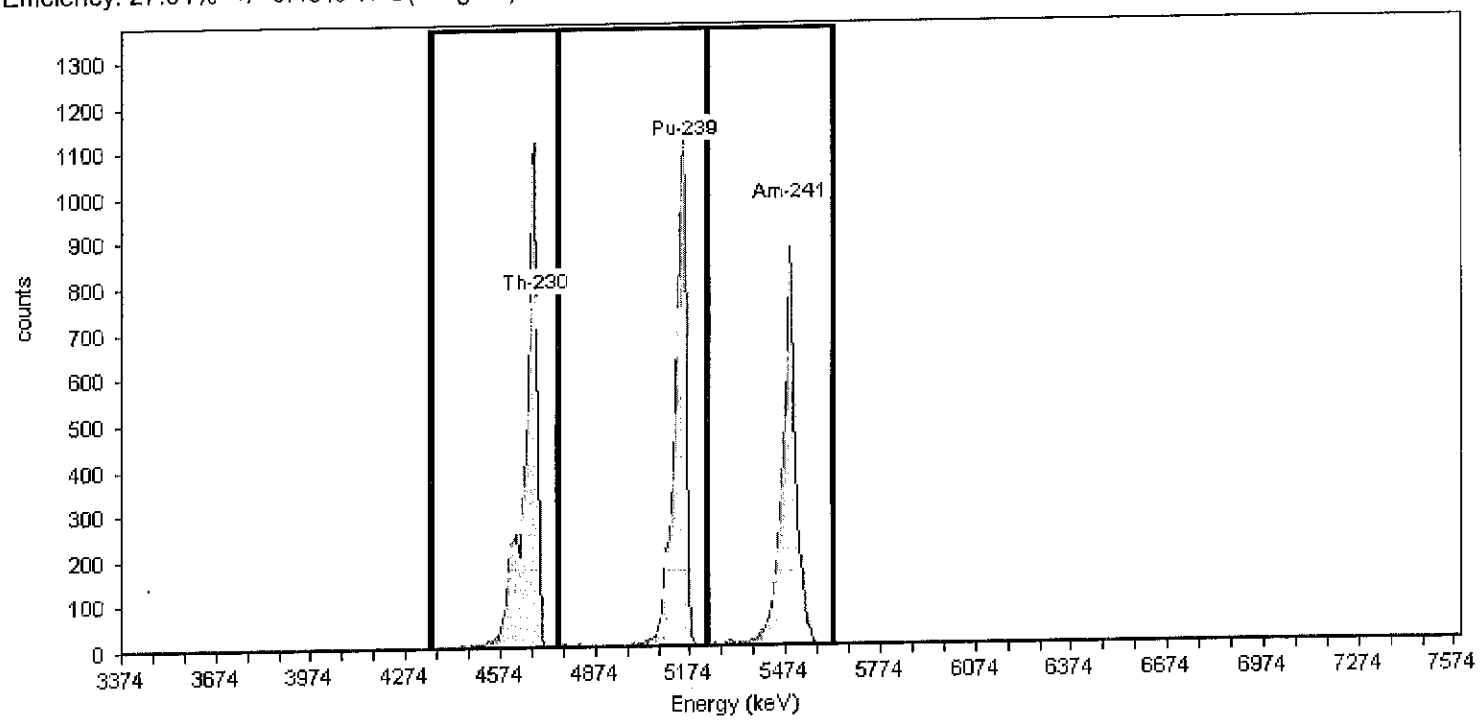
Certificate ID: 82238-334
Prepared by: Analytics

Certification Date: 6/1/2010 12:00:00PM
Description:

Acquisition

Detector: AV48 , SN: 50-051JJ4
Acquisition Start Date: 5/3/2012 1:33:40AM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 27.04% +/- 0.46% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,729.00	112.15
Pu-239	240	5.16	186	249	6,716.00	111.93
Am-241	284	5.49	249	303	5,825.00	97.08

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:43:51AM 5/3/2012

Calibration

Sample Name: May2012_AV56
Description:
Detector: AV56

Calibration Date: 5/3/2012 9:37:34AM
Analyst: 60040

Source Info

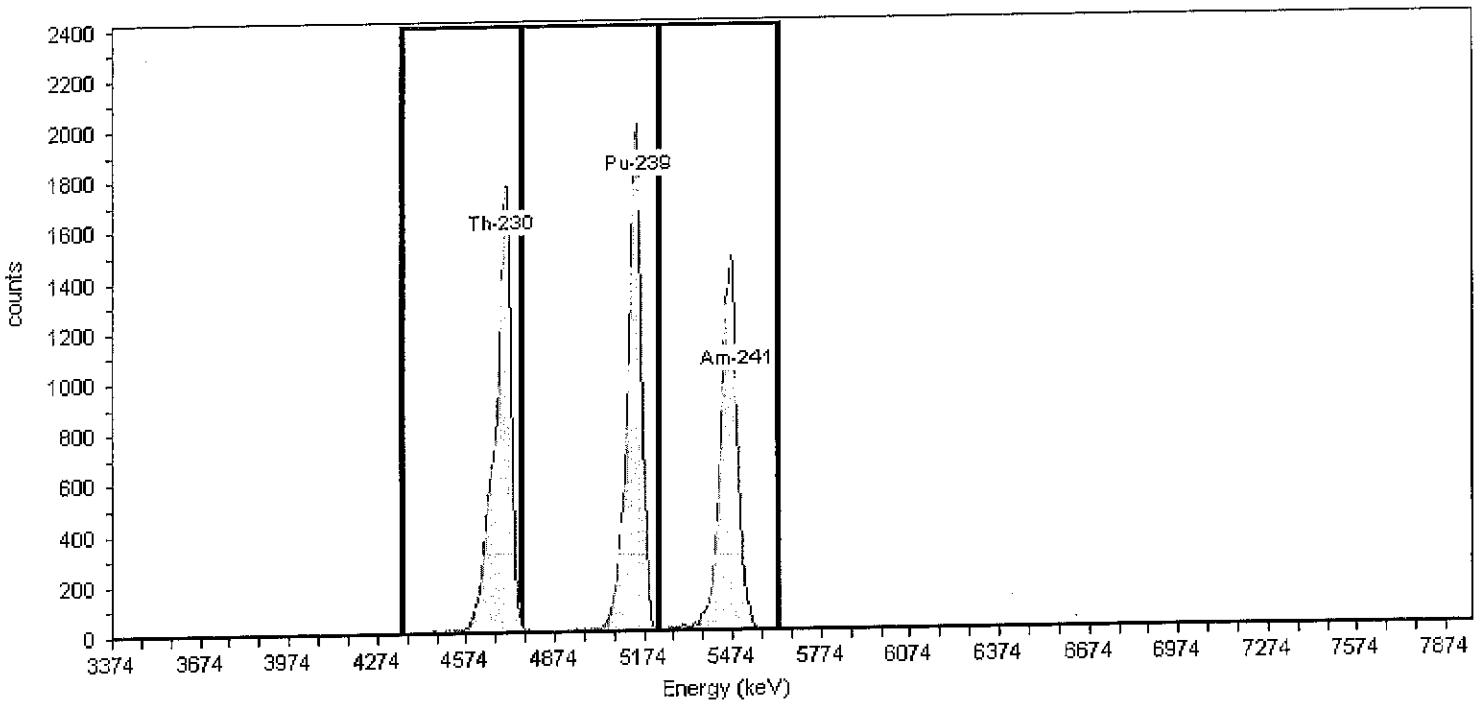
Certificate ID: 82238-334
Prepared by: Analytics

Certification Date: 6/1/2010 12:00:00PM
Description:

Acquisition

Detector: AV56 , SN:
Acquisition Start Date: 5/2/2012 11:00:52PM
Live Time: 140.00 min.
Real Time: 140.02 min.
Efficiency: 26.80% +/- 0.35% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	15,862.00	113.30
Pu-239	240	5.16	186	249	15,428.00	110.20
Am-241	284	5.49	249	303	13,237.00	94.55

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:43:59AM 5/3/2012

Calibration

Sample Name: May2012_AV56_ICV
Description:
Detector: AV56

Calibration Date: 5/3/2012 9:37:51AM
Analyst: 60040

Source Info

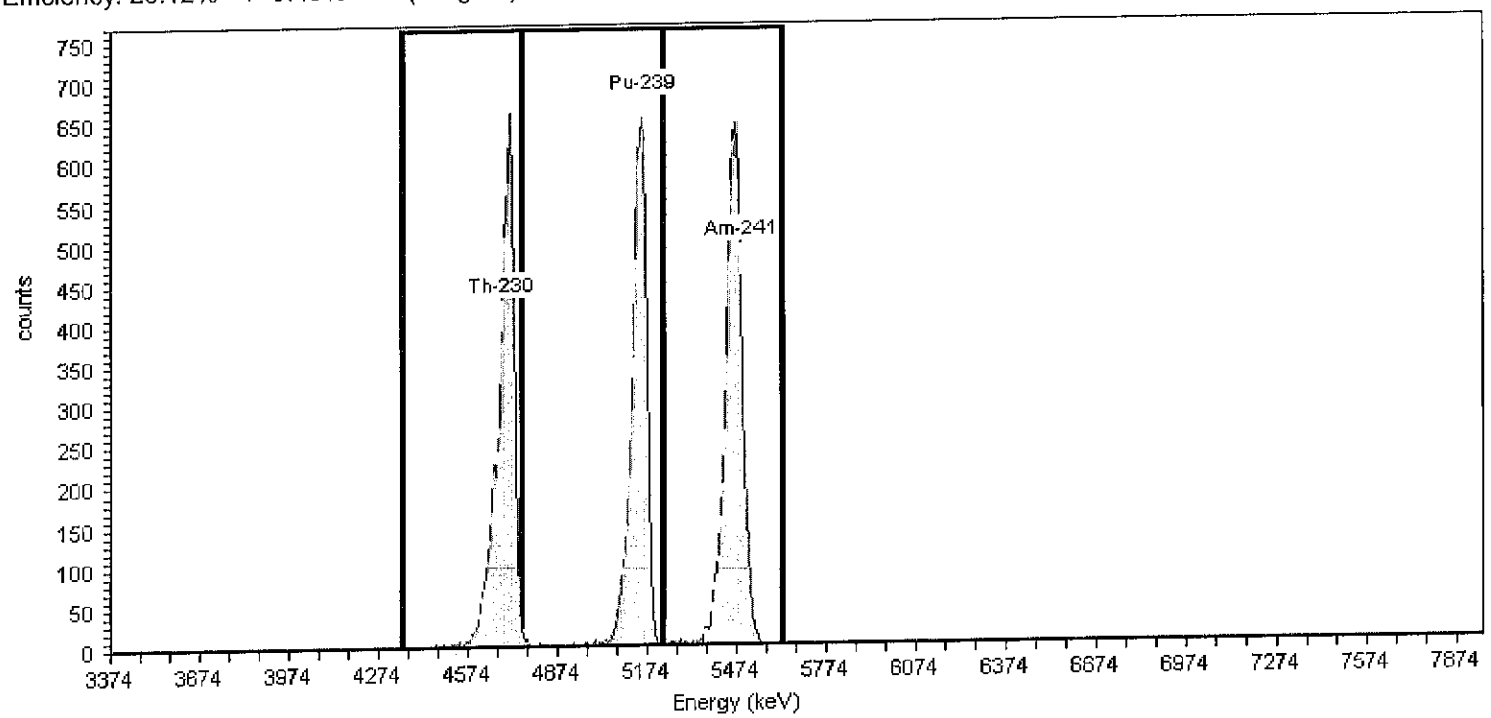
Certificate ID: 82246-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV56 , SN:
Acquisition Start Date: 5/3/2012 1:34:00AM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 26.12% +/- 0.49% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,206.00	86.77
Pu-239	240	5.16	186	249	5,037.00	83.95
Am-241	284	5.49	249	303	5,660.00	94.33

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Yearly Calibrations
Alpha Vision
February 2012
AV1-146

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV1						
Dec2011_AV1	12/15/2011 9:30:49 AM	82232-334	0.2769	Pass		
AV2						
Dec2011_AV2	12/15/2011 9:31:52 AM	82233-334	0.2696	Pass		
AV3						
June2011_AV3	6/1/2011 2:07:22 PM	63508A-334	0.2671	Pass		
AV4						
June2011_AV4	6/1/2011 2:07:26 PM	63509A-334	0.2679	Pass		
AV6						
June2011_AV6	6/1/2011 2:08:00 PM	82233-334	0.2795	Pass		
AV7						
June2011_AV7	6/1/2011 2:08:04 PM	82234-334	0.2763	Pass		
AV8						
June2011_AV8	6/1/2011 2:08:08 PM	82235-334	0.2799	Pass		
AV9						
Feb2012_AV9a	2/22/2012 5:00:30 PM	82240-334	0.2776	Pass		
Feb2012_AV9a_ICV	2/22/2012 8:32:32 PM	82236-334	0.2761	Pass	99.4615	Pass
AV10						
Feb2012_AV10a	2/22/2012 8:32:27 PM	82241-334	0.2709	Pass		
Feb2012_AV10a_ICV	2/23/2012 11:15:43 AM	82237-334	0.2717	Pass	100.292	Pass
AV11						
Dec2011_AV11	12/15/2011 1:33:27 PM	82242-334	0.2749	Pass		
AV12						
Feb2012_AV12a	2/22/2012 5:00:57 PM	82243-334	0.2682	Pass		
Feb2012_AV12a_ICV	2/22/2012 8:32:35 PM	82238-334	0.2707	Pass	100.940	Pass
AV13						
June2011_AV13a	6/1/2011 2:12:53 PM	82240-334	0.2795	Pass		
AV14						
Dec2011_AV14	12/15/2011 9:32:53 AM	82245-334	0.2606	Pass		
AV15						
June2011_AV15	6/1/2011 2:13:10 PM	82242-334	0.2731	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV16						
Feb2012_AV16a	2/22/2012 5:01:24 PM	82247-334	0.2769	Pass		
Feb2012_AV16a_ICV	2/22/2012 6:32:38 PM	82243-334	0.2707	Pass	97.7705	Pass
AV17						
June2011A_AV17	6/10/2011 2:02:28 PM	82244-334	0.2619	Pass		
AV18						
Feb2012_AV18a	2/22/2012 5:01:33 PM	82233-334	0.2699	Pass		
Feb2012_AV18a_ICV	2/22/2012 6:32:42 PM	82247-334	0.2566	Pass	95.0864	Pass
AV19						
Dec2011_AV19	12/6/2011 9:35:31 AM	82234-334	0.2724	Pass		
AV20						
June2011_AV20	6/1/2011 2:13:04 PM	82247-334	0.2701	Pass		
AV21						
June2011_AV21b	6/29/2011 3:56:43 PM	63508A-334	0.2596	Pass		
AV22						
Dec2011_AV22	2/21/2012 2:57:59 PM	82237-334	0.2680	Pass		
AV23						
June2011_AV23	6/2/2011 6:09:19 AM	63508A-334	0.2563	Pass		
AV24						
Dec2011_AV24	12/15/2011 9:33:47 AM	82240-334	0.2717	Pass		
AV43						
June2011A_AV43	6/20/2011 1:52:02 AM	82232-334	0.2786	Pass		
AV44						
June2011A_AV44	6/20/2011 8:43:44 AM	82233-334	0.2708	Pass		
AV45						
June2011_AV45	6/2/2011 6:09:33 AM	82234-334	0.2811	Pass		
AV46						
February2012_AV46	2/24/2012 9:01:09 AM	82244-334	0.2721	Pass		
Feb2012_AV46_ICV	2/24/2012 12:25:10 PM	82236-334	0.2768	Pass	101.742	Pass
AV47						
June2011A_AV47	6/20/2011 8:43:55 AM	82236-334	0.2691	Pass		
AV48						
June2011A_AV48	2/21/2012 2:58:50 PM	82237-334	0.2748	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV49						
June2011_AV49	6/2/2011 6:09:47 AM	82238-334	0.2849	Pass		
AV50						
February2012_AV50	2/24/2012 9:01:31 AM	82232-334	0.2822	Pass		
Feb2012_AV50_ICV	2/24/2012 12:25:26 PM	82240-334	0.2783	Pass	98.6252	Pass
AV51						
June2011_AV51	6/2/2011 6:09:53 AM	82240-334	0.2771	Pass		
AV52						
June2011_AV52	6/2/2011 6:09:56 AM	82241-334	0.2870	Pass		
AV53						
Dec2011_AV53	12/15/2011 9:35:01 AM	82235-334	0.2846	Pass		
AV54						
June2011_AV54	6/2/2011 6:10:00 AM	82243-334	0.2719	Pass		
AV55						
June2011A_AV55	6/20/2011 8:44:19 AM	82244-334	0.2685	Pass		
AV56						
Dec2011_AV56	12/15/2011 9:36:08 AM	82238-334	0.2691	Pass		
AV57						
Dec2011_AV57	12/13/2011 9:33:31 AM	82240-334	0.2792	Pass		
AV58						
February2012_AV58	2/24/2012 9:01:54 AM	82241-334	0.2829	Pass		
Feb2012_AV58_ICV	2/24/2012 12:25:49 PM	63507-334	0.2851	Pass	93.6999	Fail
Feb2012_AV58a_ICV	2/24/2012 3:16:31 PM	82232-334	0.2863	Pass	101.213	Pass
Feb2012_AV58b_ICV	2/24/2012 4:28:08 PM	82232-334	0.2853	Pass	100.844	Pass
AV59						
February2012_AV59	2/24/2012 9:02:17 AM	82242-334	0.2794	Pass		
Feb2012_AV59_ICV	2/24/2012 12:26:03 PM	63508A-334	0.2697	Pass	96.5361	Pass
AV60						
May2011_AV60	6/2/2011 11:03:44 AM	63507-334	0.2647	Pass		
AV61						
June2011_AV61	6/20/2011 2:14:49 PM	63508A-334	0.2663	Pass		
AV62						
May2011_AV62	6/2/2011 11:15:48 AM	63509A-334	0.2723	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV63						
Feb2012_AV63	2/23/2012 4:05:57 PM	82246-334	0.2686	Pass		
Feb2012_AV63_ICV	2/23/2012 5:15:45 PM	82234-334	0.2798	Pass	104.191	Pass
AV64						
May2011_AV64	6/2/2011 11:16:28 AM	82233-334	0.2832	Pass		
AV65						
Feb2012_AV65	2/23/2012 4:06:15 PM	82232-334	0.2841	Pass		
Feb2012_AV65_ICV	2/23/2012 5:15:50 PM	82236-334	0.2714	Pass	95.5197	Pass
AV66						
Dec2011_AV66	12/13/2011 9:35:41 AM	82233-334	0.2772	Pass		
AV67						
May2011_AV67	6/2/2011 11:17:07 AM	82236-334	0.2930	Pass		
AV68						
May2011_AV68	2/21/2012 2:59:22 PM	82237-334	0.2733	Pass		
AV69						
June2011_AV69	6/21/2011 2:25:40 PM	82238-334	0.2749	Pass		
AV70						
June2011_AV70	6/21/2011 2:26:58 PM	82239-334	0.2763	Pass		
AV71						
May2011_AV71	6/2/2011 11:17:45 AM	82240-334	0.2741	Pass		
AV72						
May2011_AV72	6/2/2011 11:17:59 AM	82241-334	0.2892	Pass		
AV73						
Dec2011_AV73	12/16/2011 2:11:57 PM	82241-334	0.2786	Pass		
AV74						
Dec2011_AV74b	12/13/2011 12:09:06 PM	82242-334	0.2738	Pass		
AV75						
May2011_AV75	6/2/2011 11:18:19 AM	82244-334	0.2642	Pass		
AV77						
May2011_AV77	6/2/2011 11:18:32 AM	82246-334	0.2664	Pass		
AV78						
May2011_AV78	6/2/2011 11:18:45 AM	82247-334	0.2787	Pass		
AV79						
June2011_AV79c	6/29/2011 3:57:04 PM	82232-334	0.2634	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov	(+/-5%)
AV80 May2011_AV80	6/10/2011 5:01:32 PM	63507-334	0.2579	Pass	
AV81 Dec2011_AV81	12/15/2011 12:13:48 PM	82233-334	0.2814	Pass	
AV82 May2011_AV82	6/28/2011 9:27:42 PM	63509A-334	0.2676	Pass	
AV83 May2011_AV83	6/28/2011 9:28:42 PM	82232-334	0.2783	Pass	
AV84 May2011_AV84	6/28/2011 9:29:52 PM	82233-334	0.2740	Pass	
AV85 May2011_AV85	6/28/2011 9:30:57 PM	82234-334	0.2852	Pass	
AV86 May2011_AV86	6/28/2011 9:31:44 PM	82235-334	0.2811	Pass	
AV87 June2011_AV87	6/21/2011 2:25:24 PM	82236-334	0.2944	Pass	
AV88 May2011_AV88	2/21/2012 2:59:57 PM	82237-334	0.2736	Pass	
AV89 May2011_AV89	6/2/2011 11:21:41 AM	82238-334	0.2698	Pass	
AV90 May2011_AV90	6/28/2011 9:34:16 PM	82239-334	0.2753	Pass	
AV92 May2011_AV92	6/28/2011 9:35:11 PM	82241-334	0.2775	Pass	
AV93 May2011_AV93	6/10/2011 5:05:03 PM	82242-334	0.2772	Pass	
AV94 June2011_AV94a	6/29/2011 3:57:09 PM	82247-334	0.2751	Pass	
AV95 June2011_AV95b	6/30/2011 8:32:04 PM	82244-334	0.2663	Pass	
AV96 June2011_AV96	6/21/2011 2:25:55 PM	82245-334	0.2743	Pass	
AV97 May2011_AV97	6/28/2011 9:40:29 PM	82246-334	0.2715	Pass	

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov	(+/-5%)
AV98 May2011_AV98	6/28/2011 9:41:09 PM	82247-334	0.2807	Pass	
AV99 Dec2011_AV99a	12/15/2011 1:34:42 PM	82236-334	0.2681	Pass	
AV100 June2011_AV100	6/10/2011 2:41:33 PM	63507-334	0.2630	Pass	
AV101 June2011_AV101	6/10/2011 2:42:11 PM	63508A-334	0.2594	Pass	
AV102 June2011_AV102	6/10/2011 2:42:28 PM	63509A-334	0.2668	Pass	
AV103 June2011_AV103a	2/21/2012 3:00:31 PM	82237-334	0.2722	Pass	
AV104 June2011_AV104	6/10/2011 2:45:37 PM	82233-334	0.2711	Pass	
AV105 June2011_AV105	6/10/2011 2:48:33 PM	82234-334	0.2601	Pass	
AV106 June2011_AV106	6/10/2011 2:49:36 PM	82235-334	0.2828	Pass	
AV107 June2011_AV107	6/10/2011 2:49:58 PM	82236-334	0.2809	Pass	
AV108 Dec2011_AV108a	12/15/2011 4:14:23 PM	82246-334	0.2763	Pass	
AV109 June2011_AV109	6/10/2011 2:50:52 PM	82238-334	0.2642	Pass	
AV110 June2011_AV110	6/10/2011 2:51:15 PM	82239-334	0.2761	Pass	
AV111 June2011_AV111	6/10/2011 2:51:42 PM	82240-334	0.2742	Pass	
AV112 June2011_AV112	6/10/2011 2:52:10 PM	82241-334	0.2669	Pass	
AV113 June2011_AV113a	6/29/2011 8:19:17 PM	82247-334	0.2797	Pass	
AV114 June2011_AV114	6/10/2011 2:53:57 PM	82243-334	0.2672	Pass	

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV115 June2011_AV115	6/10/2011 2:57:31 PM	82244-334	0.2713	Pass		
AV116 May2011_AV116	6/2/2011 11:22:31 AM	82245-334	0.2802	Pass		
AV117 June2011_AV117	6/10/2011 2:54:57 PM	82246-334	0.2598	Pass		
AV118 June2011_AV118	6/10/2011 2:55:22 PM	82247-334	0.2708	Pass		
AV119 June2011_AV119a	6/29/2011 3:57:22 PM	82234-334	0.2780	Pass		
AV120 June2011_AV120	6/10/2011 2:56:12 PM	63507-334	0.2673	Pass		
AV121 June2011_AV121	6/10/2011 2:58:09 PM	63508A-334	0.2680	Pass		
AV122 June2011_AV122	6/10/2011 2:58:33 PM	63509A-334	0.2633	Pass		
AV123 June2011_AV123a	6/21/2011 2:27:18 PM	82232-334	0.2737	Pass		
AV124 June2011_AV124a	6/21/2011 2:28:12 PM	82233-334	0.2650	Pass		
AV125 June2011_AV125a	6/21/2011 2:26:25 PM	82234-334	0.2746	Pass		
AV126 June2011_AV126	6/3/2011 3:29:01 PM	82235-334	0.2754	Pass		
AV127 June2011A_AV127	6/28/2011 9:47:50 PM	82236-334	0.2756	Pass		
AV128 June2011_AV128	2/21/2012 3:01:06 PM	82237-334	0.2692	Pass		
AV130 June2011_AV130	6/3/2011 3:29:19 PM	82239-334	0.2686	Pass		
AV131 February2012_AV131	2/24/2012 9:02:44 AM	82238-334	0.2733	Pass		
Feb2012_AV131_ICV	2/24/2012 12:26:24 PM	82245-334	0.2767	Pass	101.234	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV132						
June2011_AV132a	6/30/2011 11:37:39 AM	82247-334	0.2712	Pass		
AV133						
Feb2012_AV133	2/24/2012 1:40:22 PM	82241-334	0.2654	Pass		
Feb2012_AV133_ICV	2/24/2012 3:16:36 PM	82247-334	0.2639	Pass	99.4605	Pass
AV134						
June2011_AV134	6/3/2011 3:29:39 PM	82243-334	0.2826	Pass		
AV135						
June2011_AV135	6/3/2011 3:29:47 PM	82244-334	0.2626	Pass		
AV136						
June2011_AV136	6/3/2011 3:29:51 PM	82245-334	0.2706	Pass		
AV137						
June2011_AV137	6/3/2011 3:29:43 PM	82246-334	0.2746	Pass		
AV138						
June2011_AV138	6/3/2011 3:29:55 PM	82247-334	0.2648	Pass		
AV139						
June2011_AV139a	6/29/2011 3:57:26 PM	82235-334	0.2713	Pass		
AV140						
June2011_AV140	6/3/2011 3:30:04 PM	63507-334	0.2557	Pass		
AV141						
June2011_AV141	6/3/2011 3:30:09 PM	63508A-334	0.2581	Pass		
AV142						
June2011_AV142	6/3/2011 3:30:14 PM	63509A-334	0.2631	Pass		
AV143						
Dec2011_AV143	12/15/2011 1:36:38 PM	82235-334	0.2708	Pass		
AV144						
June2011_AV144	6/10/2011 3:04:53 PM	82233-334	0.2723	Pass		
AV145						
June2011_AV145	6/10/2011 3:05:03 PM	82234-334	0.2749	Pass		
AV146						
June2011_AV146	6/10/2011 3:05:14 PM	82235-334	0.2748	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

June Alpha Spec Calibrations

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV147						
	6/14/2011 9:47:31 AM	82236-334	0.2858	Pass		
	6/14/2011 9:48:52 AM	82247-334	0.2876	Pass	100.65	Pass
AV148						
	6/21/2011 2:32:02 PM	82237-334	0.2655	Pass		
	6/21/2011 2:32:43 PM	82236-334	0.2752	Pass	103.63	Pass
AV149						
	6/21/2011 2:34:00 PM	82238-334	0.2822	Pass		
	6/21/2011 2:34:33 PM	82237-334	0.2743	Pass	97.212	Pass
AV151						
	6/21/2011 2:36:24 PM	82240-334	0.2779	Pass		
	6/21/2011 2:36:47 PM	82239-334	0.2757	Pass	99.212	Pass
AV152						
	6/21/2011 2:37:11 PM	82241-334	0.2700	Pass		
	6/21/2011 2:37:32 PM	82240-334	0.2698	Pass	99.948	Pass
AV153						
	6/30/2011 9:05:44 AM	63508A-334	0.2610	Pass		
	6/30/2011 10:17:32 AM	63507-334	0.2585	Pass	99.026	Pass
AV154						
	6/21/2011 2:39:31 PM	82243-334	0.2680	Pass		
	6/21/2011 2:40:03 PM	82242-334	0.2722	Pass	101.56	Pass
AV155						
	6/27/2011 9:21:16 PM	82244-334	0.2651	Pass		
	6/27/2011 9:22:09 PM	82243-334	0.2628	Pass	99.134	Pass
AV156						
	6/27/2011 9:22:55 PM	82245-334	0.2721	Pass		
	6/27/2011 9:23:40 PM	82244-334	0.2640	Pass	97.019	Pass
AV157						
	6/27/2011 9:24:40 PM	82246-334	0.2630	Pass		
	6/27/2011 9:25:17 PM	82245-334	0.2703	Pass	102.74	Pass
AV158						
	6/30/2011 11:40:49 AM	82235-334	0.2758	Pass		
	6/30/2011 12:51:15 PM	82234-334	0.2756	Pass	99.948	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV159						
	6/30/2011 9:06:12 AM	82236-334	0.2701	Pass		
	6/30/2011 9:06:45 AM	82235-334	0.2750	Pass	101.83	Pass
AV160						
	6/30/2011 9:07:03 AM	82237-334	0.2630	Pass		
	6/30/2011 9:07:22 AM	82236-334	0.2656	Pass	100.98	Pass
AV161						
	6/27/2011 9:29:26 PM	63508A-334	0.2652	Pass		
	6/27/2011 9:29:59 PM	63507-334	0.2604	Pass	98.212	Pass
AV162						
	6/23/2011 11:26:56 AM	63509A-334	0.2637	Pass		
	6/23/2011 1:44:04 PM	63508A-334	0.2643	Pass	100.20	Pass
AV163						
	6/15/2011 1:14:12 AM	82232-334	0.2782	Pass		
	6/27/2011 9:30:57 PM	63509A-334	0.2748	Pass	98.774	Pass
AV164						
	6/30/2011 9:07:48 AM	82241-334	0.2661	Pass		
	6/30/2011 9:08:11 AM	82240-334	0.2702	Pass	101.52	Pass
AV165						
	6/15/2011 1:14:21 AM	82234-334	0.2869	Pass		
	6/27/2011 9:32:32 PM	82233-334	0.2796	Pass	97.467	Pass
AV166						
	6/15/2011 1:14:26 AM	82235-334	0.2773	Pass		
	6/27/2011 9:33:19 PM	82234-334	0.2771	Pass	99.922	Pass
AV167						
	6/15/2011 1:14:30 AM	82236-334	0.2723	Pass		
	6/27/2011 9:34:00 PM	82235-334	0.2755	Pass	101.17	Pass
AV168						
	6/15/2011 1:14:34 AM	82237-334	0.2627	Pass		
	6/27/2011 9:34:45 PM	82236-334	0.2702	Pass	102.85	Pass
AV169						
	6/15/2011 1:14:37 AM	82238-334	0.2711	Pass		
	6/27/2011 9:35:26 PM	82237-334	0.2674	Pass	98.648	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV170						
	6/15/2011 1:14:41 AM	82239-334	0.2783	Pass		
	6/27/2011 9:36:10 PM	82238-334	0.2688	Pass	96.606	Pass
AV171						
	6/15/2011 1:14:45 AM	82240-334	0.2709	Pass		
	6/27/2011 9:37:06 PM	82239-334	0.2813	Pass	103.84	Pass
AV172						
	6/15/2011 1:14:49 AM	82241-334	0.2699	Pass		
	6/27/2011 9:37:46 PM	82240-334	0.2705	Pass	100.22	Pass
AV173						
	6/15/2011 1:14:52 AM	82242-334	0.2830	Pass		
	6/27/2011 9:38:28 PM	82241-334	0.2716	Pass	95.991	Pass
AV174						
	6/15/2011 1:14:56 AM	82243-334	0.2679	Pass		
	6/27/2011 9:39:06 PM	82242-334	0.2743	Pass	102.42	Pass
AV175						
	6/15/2011 1:15:00 AM	82244-334	0.2675	Pass		
	6/27/2011 9:39:52 PM	82243-334	0.2720	Pass	101.67	Pass
AV176						
	6/15/2011 2:15:31 AM	82245-334	0.2726	Pass		
	6/27/2011 9:40:38 PM	82244-334	0.2661	Pass	97.631	Pass
AV177						
	6/15/2011 1:15:04 AM	82246-334	0.2651	Pass		
	6/15/2011 4:19:56 AM	82245-334	0.2751	Pass	103.75	Pass
AV178						
	6/15/2011 1:15:07 AM	82247-334	0.2746	Pass		
	6/27/2011 9:41:21 PM	82246-334	0.2711	Pass	98.745	Pass
AV179						
	6/30/2011 9:08:46 AM	82237-334	0.2742	Pass		
	6/30/2011 10:17:36 AM	82236-334	0.2866	Pass	104.51	Pass
AV180						
	6/15/2011 1:15:15 AM	63507-334	0.2625	Pass		
	6/27/2011 9:43:59 PM	63506-334	0.2532	Pass	96.455	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV181						
	6/15/2011 1:15:18 AM	63508A-334	0.2611	Pass		
	6/27/2011 9:44:46 PM	63507-334	0.2587	Pass	99.069	Pass
AV182						
	6/27/2011 9:45:31 PM	63509A-334	0.2629	Pass		
	6/27/2011 9:46:14 PM	63508A-334	0.2625	Pass	99.822	Pass
AV183						
	6/20/2011 10:52:50 PM	82232-334	0.2795	Pass		
	6/27/2011 9:46:57 PM	63509A-334	0.2671	Pass	95.537	Pass
AV184						
	6/20/2011 10:52:55 PM	82233-334	0.2772	Pass		
	6/27/2011 9:47:46 PM	82232-334	0.2799	Pass	100.95	Pass
AV185						
	6/20/2011 10:52:58 PM	82234-334	0.2823	Pass		
	6/27/2011 9:48:33 PM	82233-334	0.2741	Pass	97.113	Pass
AV186						
	6/20/2011 10:53:06 PM	82235-334	0.2741	Pass		
	6/27/2011 9:49:22 PM	82234-334	0.2744	Pass	100.12	Pass
AV187						
	6/20/2011 10:53:09 PM	82236-334	0.2672	Pass		
	6/27/2011 9:50:09 PM	82235-334	0.2741	Pass	102.59	Pass
AV188						
	6/20/2011 10:53:13 PM	82237-334	0.2820	Pass		
	6/27/2011 9:50:56 PM	82236-334	0.2799	Pass	99.240	Pass
AV189						
	6/20/2011 10:53:16 PM	82238-334	0.2769	Pass		
	6/27/2011 9:51:48 PM	82237-334	0.2684	Pass	96.927	Pass
AV190						
	6/21/2011 1:27:18 AM	82239-334	0.2710	Pass		
	6/27/2011 9:52:36 PM	82238-334	0.2739	Pass	101.05	Pass
AV191						
	6/20/2011 10:53:19 PM	82240-334	0.2794	Pass		
	6/21/2011 4:20:11 AM	82239-334	0.2769	Pass	99.115	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV192						
	6/20/2011 10:53:23 PM	82241-334	0.2797	Pass		
	6/27/2011 9:53:23 PM	82240-334	0.2797	Pass	100.02	Pass
AV193						
	6/20/2011 10:53:26 PM	82242-334	0.2736	Pass		
	6/27/2011 9:54:02 PM	82241-334	0.2750	Pass	100.50	Pass
AV194						
	6/20/2011 10:53:29 PM	82243-334	0.2734	Pass		
	6/27/2011 9:54:56 PM	82242-334	0.2776	Pass	101.56	Pass
AV195						
	6/20/2011 10:53:33 PM	82244-334	0.2644	Pass		
	6/27/2011 9:55:43 PM	82243-334	0.2668	Pass	100.90	Pass
AV196						
	6/20/2011 10:53:37 PM	82245-334	0.2839	Pass		
	6/27/2011 9:56:30 PM	82244-334	0.2753	Pass	96.985	Pass
AV197						
	6/24/2011 2:40:07 AM	82246-334	0.2672	Pass		
	6/27/2011 9:57:47 PM	82245-334	0.2763	Pass	103.37	Pass
AV198						
	6/24/2011 2:22:48 PM	82247-334	0.2725	Pass		
	6/24/2011 3:24:45 PM	82246-334	0.2672	Pass	98.027	Pass
AV199						
	6/30/2011 9:09:28 AM	82238-334	0.2684	Pass		
	6/30/2011 10:17:40 AM	82237-334	0.2638	Pass	98.291	Pass
AV200						
	6/20/2011 10:53:47 PM	63507-334	0.2618	Pass		
	6/27/2011 10:00:20 PM	63506-334	0.2543	Pass	97.155	Pass
AV201						
	6/20/2011 10:53:53 PM	63508A-334	0.2654	Pass		
	6/27/2011 10:01:08 PM	63507-334	0.2735	Pass	103.06	Pass
AV202						
	6/27/2011 10:01:51 PM	63509A-334	0.2648	Pass		
	6/27/2011 10:02:25 PM	63508A-334	0.2613	Pass	98.648	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV203						
	6/21/2011 3:19:59 PM	82232-334	0.2768	Pass		
	6/21/2011 3:21:44 PM	63509A-334	0.2646	Pass	95.582	Pass
AV204						
	6/27/2011 10:03:31 PM	82233-334	0.2705	Pass		
	6/27/2011 10:04:08 PM	82232-334	0.2736	Pass	101.16	Pass
AV205						
	6/21/2011 3:29:26 PM	82234-334	0.2783	Pass		
	6/27/2011 10:04:59 PM	82233-334	0.2722	Pass	97.818	Pass
AV206						
	6/27/2011 10:05:51 PM	82235-334	0.2796	Pass		
	6/27/2011 10:06:38 PM	82234-334	0.2837	Pass	101.48	Pass
AV207						
	6/27/2011 10:07:21 PM	82236-334	0.2735	Pass		
	6/27/2011 10:08:05 PM	82235-334	0.2759	Pass	100.87	Pass
AV208						
	6/27/2011 10:08:56 PM	82237-334	0.2765	Pass		
	6/27/2011 10:09:30 PM	82236-334	0.2800	Pass	101.26	Pass
AV209						
	6/27/2011 10:10:06 PM	82238-334	0.2812	Pass		
	6/27/2011 10:10:39 PM	82237-334	0.2680	Pass	95.309	Pass
AV210						
	6/21/2011 9:13:09 AM	82239-334	0.2718	Pass		
	6/27/2011 10:11:34 PM	82238-334	0.2722	Pass	100.16	Pass
AV211						
	6/27/2011 10:12:37 PM	82240-334	0.2684	Pass		
	6/21/2011 10:55:13 AM	82239-334	0.2688	Pass	100.13	Pass
AV212						
	6/27/2011 10:13:23 PM	82241-334	0.2851	Pass		
	6/27/2011 10:13:58 PM	82240-334	0.2891	Pass	101.41	Pass
AV213						
	6/23/2011 11:27:18 AM	82242-334	0.2707	Pass		
	6/23/2011 1:44:14 PM	82241-334	0.2712	Pass	100.17	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV214						
	6/27/2011 10:15:18 PM	82243-334	0.2701	Pass		
	6/27/2011 10:15:54 PM	82242-334	0.2728	Pass	100.98	Pass
AV215						
	6/27/2011 10:16:46 PM	82244-334	0.2907	Pass		
	6/27/2011 10:17:26 PM	82243-334	0.2768	Pass	95.222	Pass
AV216						
	6/27/2011 10:18:14 PM	82245-334	0.2815	Pass		
	6/27/2011 10:18:50 PM	82244-334	0.2736	Pass	97.176	Pass
AV217						
	7/1/2011 10:10:06 AM	82246-334	0.2656	Pass		
	7/1/2011 10:10:22 AM	82245-334	0.2746	Pass	103.39	Pass
AV218						
	6/24/2011 1:51:29 PM	82247-334	0.2743	Pass		
	6/24/2011 5:16:09 PM	82246-334	0.2696	Pass	98.287	Pass
AV219						
	6/30/2011 9:09:52 AM	82240-334	0.2749	Pass		
	6/30/2011 9:10:10 AM	82238-334	0.2711	Pass	98.608	Pass
AV220						
	6/27/2011 10:21:49 PM	63507-334	0.2632	Pass		
	6/27/2011 10:22:24 PM	63506-334	0.2579	Pass	97.981	Pass
AV221						
	6/27/2011 10:23:08 PM	63508A-334	0.2621	Pass		
	6/27/2011 10:23:43 PM	63507-334	0.2617	Pass	99.836	Pass
AV222						
	6/27/2011 10:24:23 PM	63509A-334	0.2675	Pass		
	6/27/2011 10:25:09 PM	63508A-334	0.2634	Pass	98.476	Pass
AV223						
	6/23/2011 11:28:00 AM	82232-334	0.2800	Pass		
	6/23/2011 1:44:18 PM	63509A-334	0.2682	Pass	95.794	Pass
AV224						
	6/23/2011 11:28:25 AM	82233-334	0.2755	Pass		
	6/23/2011 1:44:22 PM	82232-334	0.2798	Pass	101.55	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV225						
	6/24/2011 2:40:10 AM	82234-334	0.2791	Pass		
	6/27/2011 10:26:27 PM	82233-334	0.2753	Pass	98.623	Pass
AV226						
	6/24/2011 2:40:15 AM	82235-334	0.2729	Pass		
	6/27/2011 10:27:06 PM	82234-334	0.2800	Pass	102.61	Pass
AV227						
	6/25/2011 10:39:33 AM	82236-334	0.2783	Pass		
	6/25/2011 1:18:30 PM	82235-334	0.2773	Pass	99.651	Pass
AV228						
	6/28/2011 9:07:26 AM	82237-334	0.2755	Pass		
	6/28/2011 9:07:46 AM	82236-334	0.2863	Pass	103.94	Pass
AV229						
	6/25/2011 10:39:43 AM	82238-334	0.2781	Pass		
	6/25/2011 1:18:41 PM	82237-334	0.2735	Pass	98.336	Pass
AV230						
	6/25/2011 10:39:47 AM	82239-334	0.2844	Pass		
	6/25/2011 1:19:16 PM	82238-334	0.2812	Pass	98.851	Pass
AV231						
	6/25/2011 10:50:22 AM	82240-334	0.2784	Pass		
	6/25/2011 1:19:42 PM	82239-334	0.2758	Pass	99.090	Pass
AV232						
	6/25/2011 10:58:31 AM	82241-334	0.2758	Pass		
	6/25/2011 1:19:51 PM	82240-334	0.2812	Pass	101.96	Pass
AV233						
	6/25/2011 10:58:37 AM	82242-334	0.2668	Pass		
	6/25/2011 1:20:13 PM	82241-334	0.2705	Pass	101.37	Pass
AV234						
	6/28/2011 9:08:33 AM	82243-334	0.2710	Pass		
	6/28/2011 9:08:49 AM	82242-334	0.2714	Pass	100.13	Pass
AV235						
	6/25/2011 11:19:40 AM	82244-334	0.2686	Pass		
	6/25/2011 1:21:34 PM	82243-334	0.2694	Pass	100.30	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV236						
	6/25/2011 11:19:44 AM	82245-334	0.2759	Pass		
	6/25/2011 1:22:02 PM	82244-334	0.2647	Pass	95.960	Pass
AV237						
	6/25/2011 11:19:48 AM	82246-334	0.2679	Pass		
	6/25/2011 1:22:14 PM	82245-334	0.2783	Pass	103.89	Pass
AV238						
	6/25/2011 11:19:52 AM	82247-334	0.2740	Pass		
	6/25/2011 1:22:47 PM	82246-334	0.2642	Pass	96.404	Pass
AV239						
	6/29/2011 4:17:46 PM	82241-334	0.2816	Pass		
	6/29/2011 5:24:20 PM	82239-334	0.2770	Pass	98.355	Pass
AV240						
	6/28/2011 9:06:33 AM	63507-334	0.2675	Pass		
	6/25/2011 1:23:31 PM	63506-334	0.2636	Pass	98.508	Pass
AV241						
	6/25/2011 11:47:42 AM	63508A-334	0.2600	Pass		
	6/25/2011 1:23:51 PM	63507-334	0.2602	Pass	100.06	Pass
AV242						
	6/25/2011 11:47:57 AM	63509A-334	0.2680	Pass		
	6/25/2011 1:24:10 PM	63508A-334	0.2667	Pass	99.534	Pass
AV243						
	6/25/2011 9:28:07 AM	82232-334	0.2795	Pass		
	6/25/2011 1:24:52 PM	63509A-334	0.2676	Pass	95.760	Pass
AV244						
	6/25/2011 12:07:09 PM	82233-334	0.2858	Pass		
	6/25/2011 1:25:04 PM	82232-334	0.2904	Pass	101.61	Pass
AV245						
	6/25/2011 12:07:13 PM	82234-334	0.2856	Pass		
	6/25/2011 1:25:24 PM	82233-334	0.2793	Pass	97.792	Pass
AV246						
	6/25/2011 12:07:17 PM	82235-334	0.2981	Pass		
	6/25/2011 1:25:53 PM	82234-334	0.2968	Pass	99.576	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV247						
	6/28/2011 9:04:33 AM	82236-334	0.2721	Pass		
	6/28/2011 9:04:52 AM	82235-334	0.2774	Pass	101.94	Pass
AV248						
	6/28/2011 9:09:30 AM	82237-334	0.2651	Pass		
	6/28/2011 9:09:48 AM	82236-334	0.2698	Pass	101.77	Pass
AV249						
	6/28/2011 9:10:11 AM	82238-334	0.2852	Pass		
	6/28/2011 9:10:27 AM	82237-334	0.2781	Pass	97.510	Pass
AV250						
	6/28/2011 9:10:53 AM	82239-334	0.2800	Pass		
	6/28/2011 9:11:12 AM	82238-334	0.2820	Pass	100.71	Pass

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Alpha Vision
Yearly Calibrations
Updated 2/22/12

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV22						
Dec2011_AV22	2/21/2012 2:57:59 PM	82237-334	0.2680	Pass		
Dec2011a_AV22_ICV	12/8/2011 2:38:54 PM	82236-334	0.2670	Pass	99.6280	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Wednesday, February 22, 2012 ***Page 1 of 1***

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV48						
June2011A_AV48	2/21/2012 2:58:50 PM	82237-334	0.2748	Pass		
June2011_AV48_ICV	6/28/2011 9:18:29 PM	82236-334	0.2720	Pass	98.9875	Pass
AV88						
May2011_AV88	2/21/2012 2:59:57 PM	82237-334	0.2736	Pass		
June2011_AV88_ICV	6/28/2011 9:33:31 PM	82236-334	0.2783	Pass	101.747	Pass
AV103						
June2011_AV103a	2/21/2012 3:00:31 PM	82237-334	0.2722	Pass		
June2011_AV103a_ICVb	6/29/2011 8:19:11 PM	82236-334	0.2718	Pass	99.8524	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV68						
May2011_AV68	2/21/2012 2:59:22 PM	82237-334	0.2733	Pass		
June2011_AV68_ICV	6/2/2011 5:28:05 PM	82236-334	0.2767	Pass	101.258	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV128						
June2011_AV128	2/21/2012 3:01:06 PM	82237-334	0.2692	Pass		
June2011_AV128_ICV	6/10/2011 3:00:38 PM	82236-334	0.2737	Pass	101.685	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV160						
June2011A_AV160	2/21/2012 3:02:57 PM	82237-334	0.2708	Pass		
June2011A_AV160_ICV	6/30/2011 9:07:22 AM	82236-334	0.2656	Pass	98.0720	Pass
AV168						
June2011_AV168	2/21/2012 3:03:27 PM	82237-334	0.2704	Pass		
June2011_AV168_ICV	6/27/2011 9:34:45 PM	82236-334	0.2702	Pass	99.9393	Pass
AV179						
June2011B_AV179	2/21/2012 3:03:50 PM	82237-334	0.2821	Pass		
June2011_AV179b_ICV	6/30/2011 10:17:36 AM	82236-334	0.2866	Pass	101.588	Pass
AV228						
June2011A_AV228	2/21/2012 3:04:50 PM	82237-334	0.2834	Pass		
June2011A_AV228_ICV	6/28/2011 9:07:46 AM	82236-334	0.2863	Pass	101.035	Pass
AV248						
June2011_AV248	2/21/2012 3:05:18 PM	82237-334	0.2726	Pass		
June2011_AV248_ICV	6/28/2011 9:09:48 AM	82236-334	0.2698	Pass	98.9835	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV205						
Dec2011_AV205	2/21/2012 3:04:20 PM	82237-334	0.2688	Pass		
Dec2011_AV205_ICV	12/16/2011 3:08:08 AM	82236-334	0.2684	Pass	99.8398	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:35:47AM 2/27/2012

Calibration

Name: February2012_AV50
Description:
Detector: AV50

Calibration Date: 2/24/2012 9:01:31AM
Analyst: 60040

Source Info

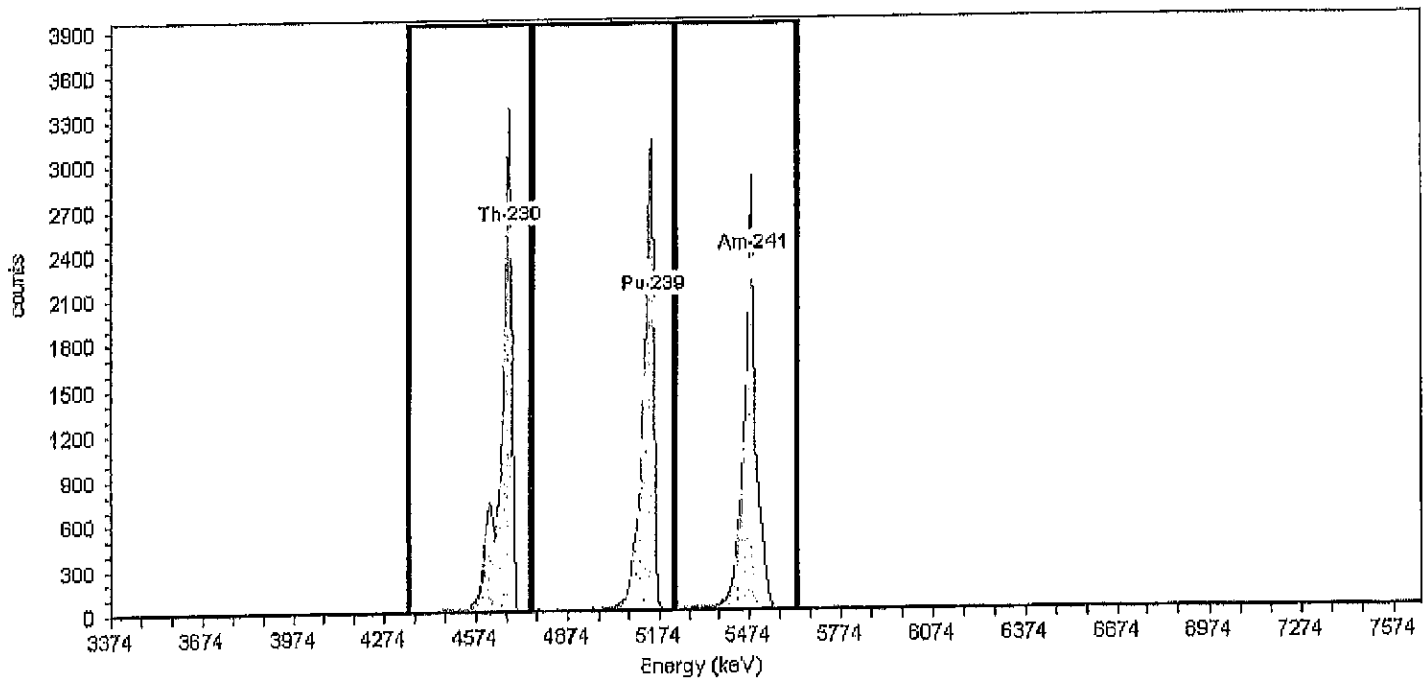
Certificate ID: 82232-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV50 , SN: 50-060W2
Acquisition Start Date: 2/23/2012 11:03:19PM
Live Time: 140.00 min.
Real Time: 140.06 min.
Efficiency: 28.22% +/- 0.31% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	18,073.00	129.09
Pu-239	240	5.16	186	249	17,064.00	121.89
Am-241	284	5.49	249	303	17,096.00	122.11

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:35:54AM 2/27/2012

Calibration

Name: Feb2012_AV50_ICV
Description:
Detector: AV50

Calibration Date: 2/24/2012 12:25:26PM
Analyst: 60040

Source Info

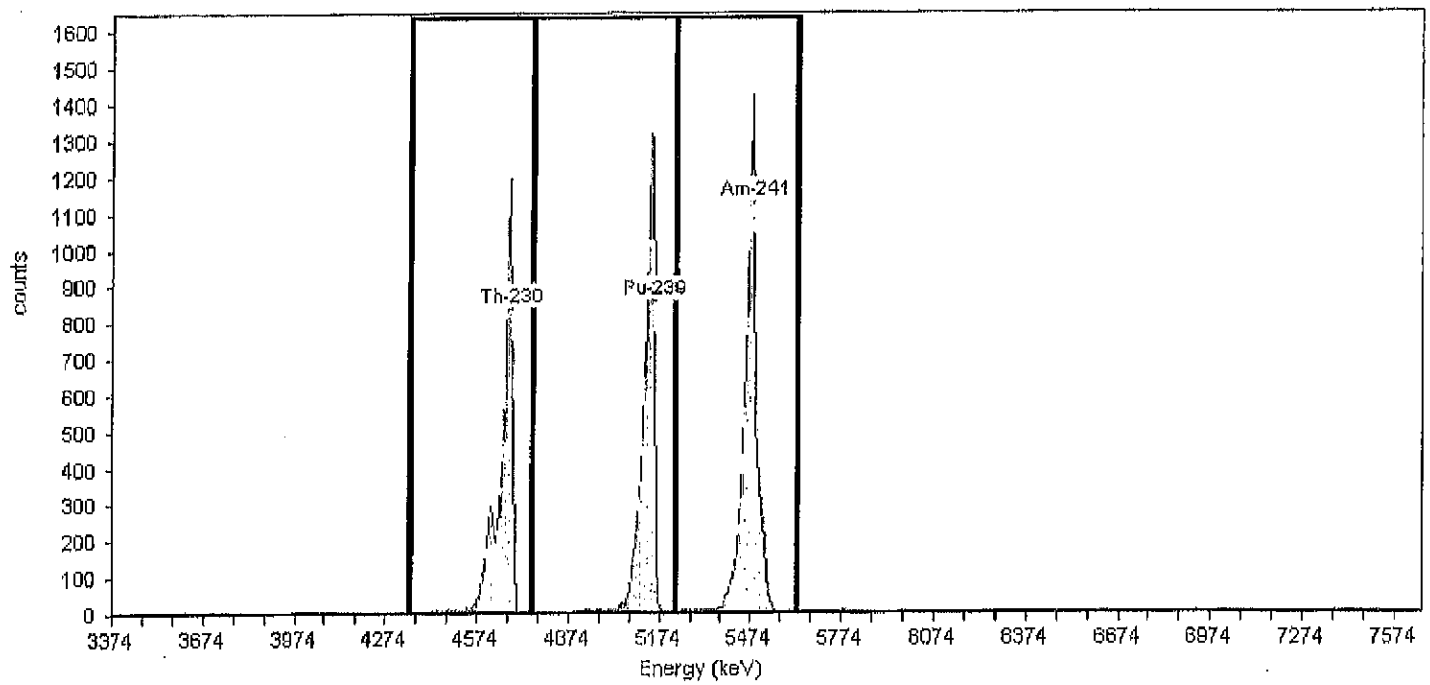
Certificate ID: 82240-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV50 , SN: 50-060W2
Acquisition Start Date: 2/24/2012 11:21:50AM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 27.83% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,324.00	105.40
Pu-239	240	5.16	186	249	7,121.00	118.68
Am-241	284	5.49	249	303	8,342.00	139.03

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:54:23AM 7/25/2011

Calibration

Name: June2011_AV51
Description:
Detector: AV51

Calibration Date: 6/2/2011 6:09:53AM
Analyst: 60040

Source Info

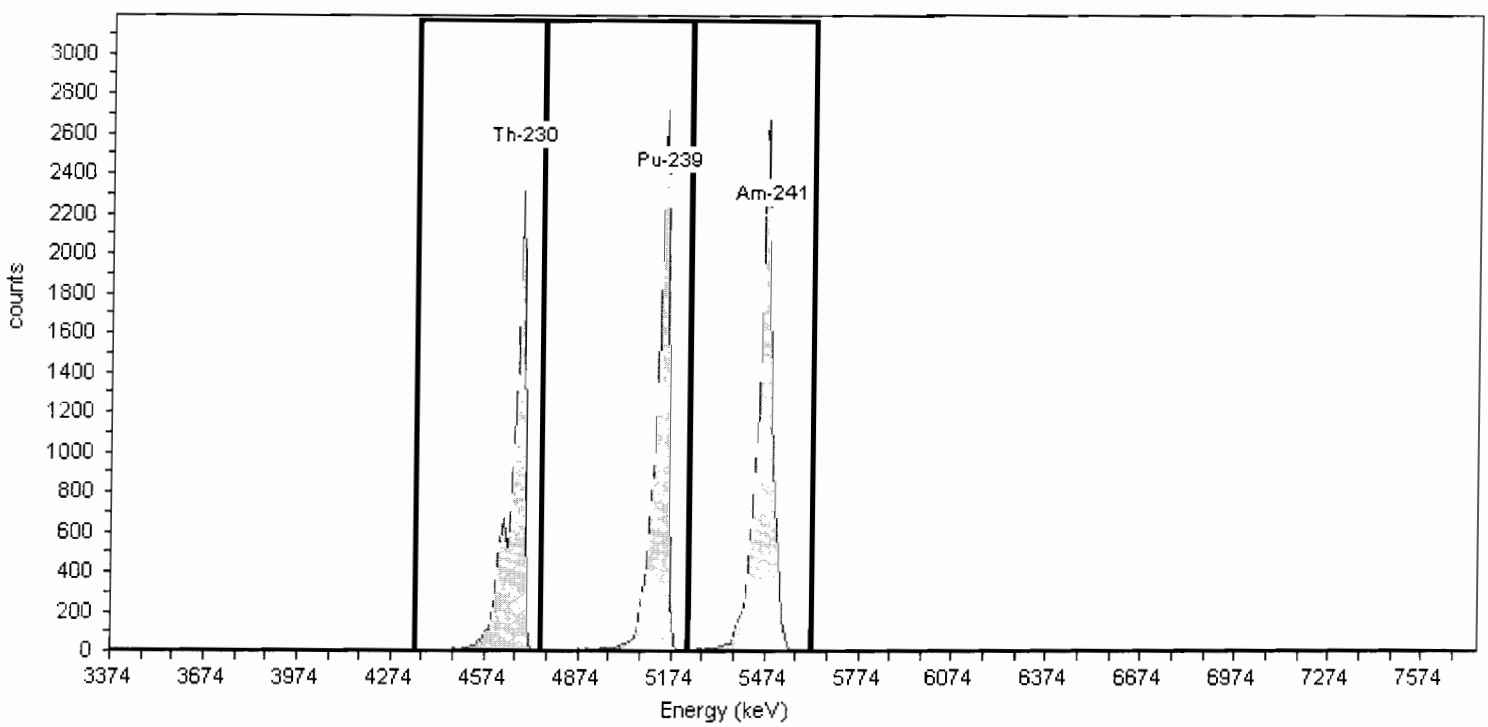
Certificate ID: 82240-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV51 , SN: 48-109I1
Acquisition Start Date: 6/1/2011 5:40:06PM
Live Time: 140.00 min.
Real Time: 148.78 min.
Efficiency: 27.71% +/- 0.32% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	14,761.00	105.44
Pu-239	240	5.16	186	249	16,705.00	119.32
Am-241	284	5.49	249	303	19,192.00	137.09

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:54:28AM 7/25/2011

Calibration

Name: June2011_AV51_ICV
Description:
Detector: AV51

Calibration Date: 6/2/2011 5:27:20PM
Analyst: 60040

Source Info

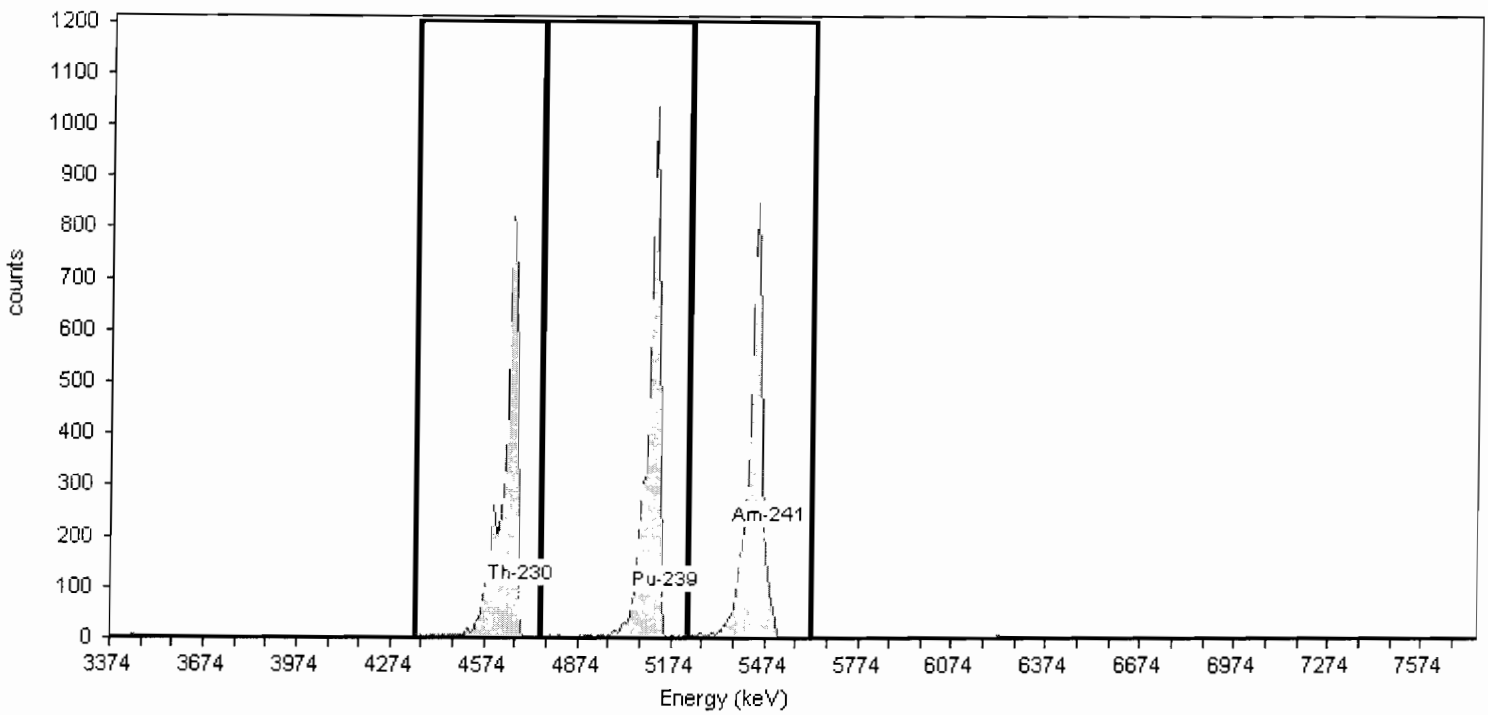
Certificate ID: 82239-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV51 , SN: 48-109I1
Acquisition Start Date: 6/2/2011 12:22:23PM
Live Time: 60.00 min.
Real Time: 60.03 min.
Efficiency: 27.04% +/- 0.50% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,543.00	92.38
Pu-239	240	5.16	186	249	5,891.00	98.18
Am-241	284	5.49	249	303	5,552.00	92.53

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:54:36AM 7/25/2011

Calibration

Name: June2011_AV52
Description:
Detector: AV52

Calibration Date: 6/2/2011 6:09:56AM
Analyst: 60040

Source Info

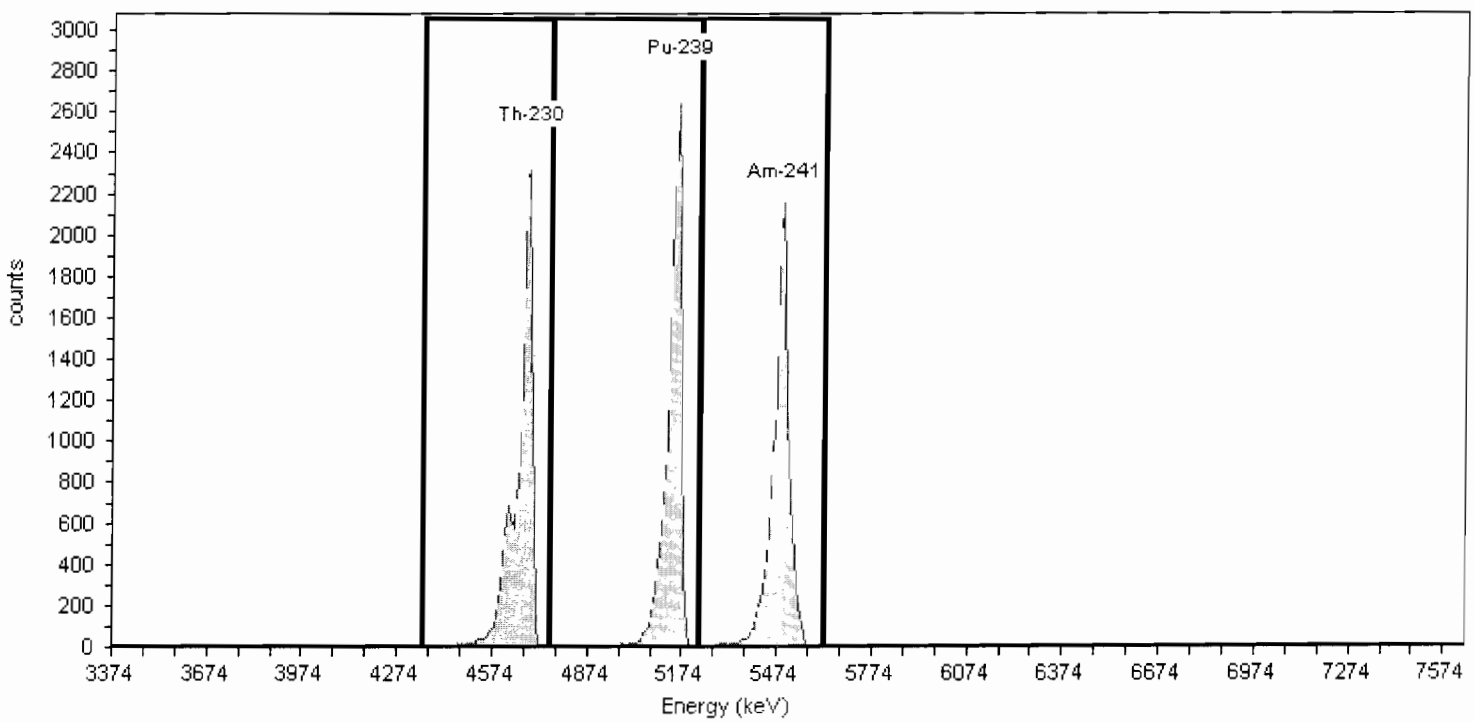
Certificate ID: 82241-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV52 , SN:
Acquisition Start Date: 6/1/2011 5:40:29PM
Live Time: 140.00 min.
Real Time: 148.79 min.
Efficiency: 28.70% +/- 0.34% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	15,916.00	113.69
Pu-239	240	5.16	186	249	16,303.00	116.45
Am-241	284	5.49	249	303	16,157.00	115.41

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:54:41AM 7/25/2011

Calibration

Name: June2011_AV52_ICV
Description:
Detector: AV52

Calibration Date: 6/2/2011 5:27:24PM
Analyst: 60040

Source Info

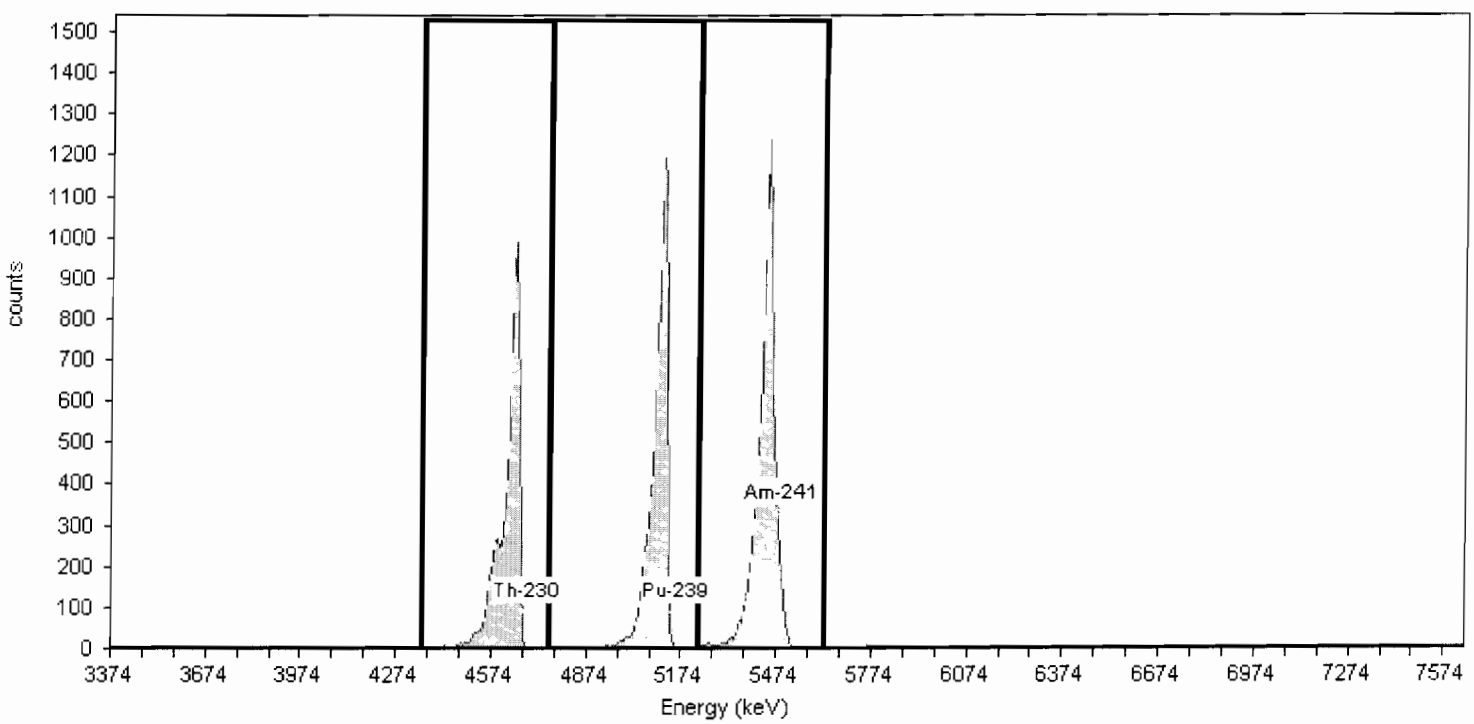
Certificate ID: 82240-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV52 , SN:
Acquisition Start Date: 6/2/2011 12:23:01PM
Live Time: 60.00 min.
Real Time: 60.03 min.
Efficiency: 28.93% +/- 0.44% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,458.00	107.63
Pu-239	240	5.16	186	249	7,529.00	125.48
Am-241	284	5.49	249	303	8,671.00	144.52

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:50:34PM 12/16/2011

Calibration

Name: Dec2011_AV53
Description:
Detector: AV53

Calibration Date: 12/15/2011 9:35:01AM
Analyst: 60040

Source Info

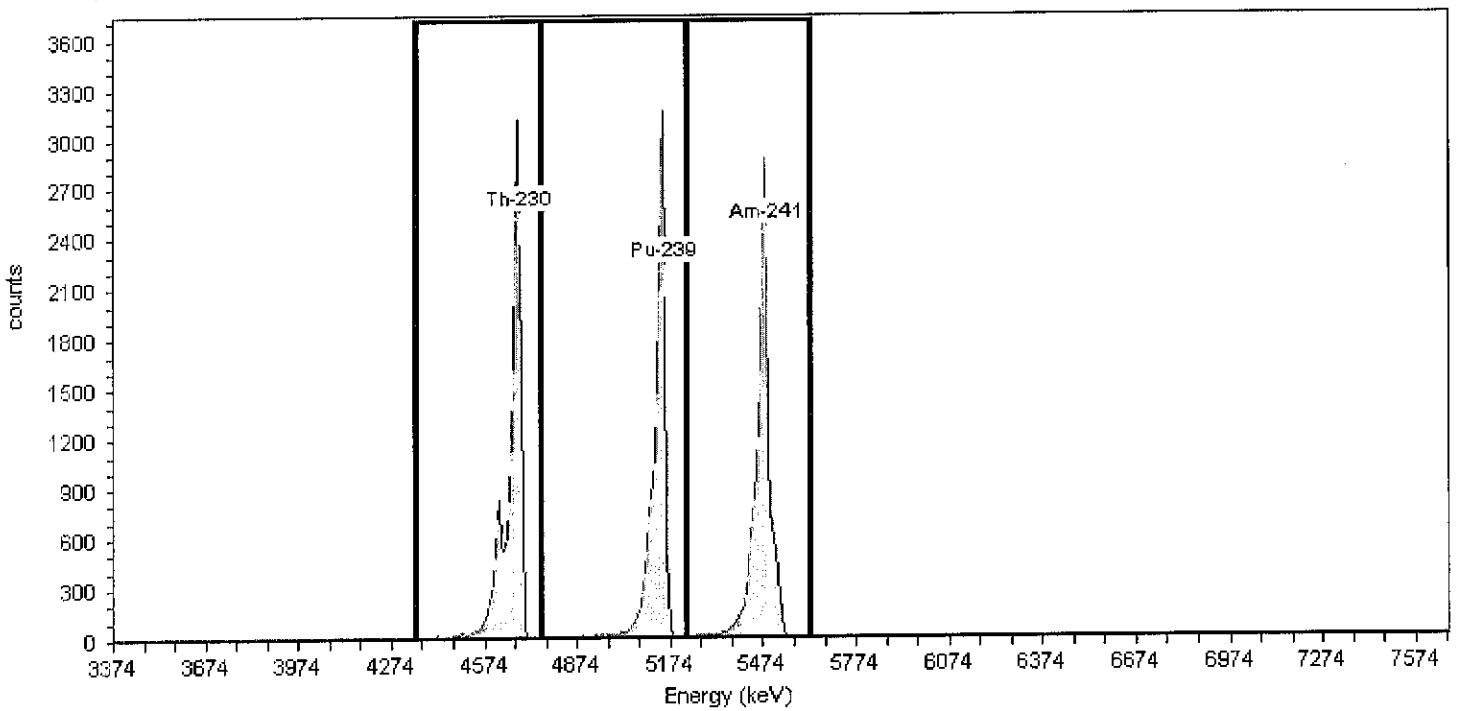
Certificate ID: 82235-334
Prepared by: Analytics

Certification Date: 6/4/2010 12:00:00PM
Description:

Acquisition

Detector: AV53 , SN: 50-051A6
Acquisition Start Date: 12/14/2011 8:56:27PM
Live Time: 140.00 min.
Real Time: 140.28 min.
Efficiency: 28.46% +/- 0.32% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	17,075.00	121.96
Pu-239	240	5.16	186	249	16,722.00	119.44
Am-241	284	5.49	249	303	17,662.00	126.16

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:50:39PM 12/16/2011

Calibration

Name: Dec2011_AV53_ICV
Description:
Detector: AV53

Calibration Date: 12/15/2011 9:35:32AM
Analyst: 60040

Source Info

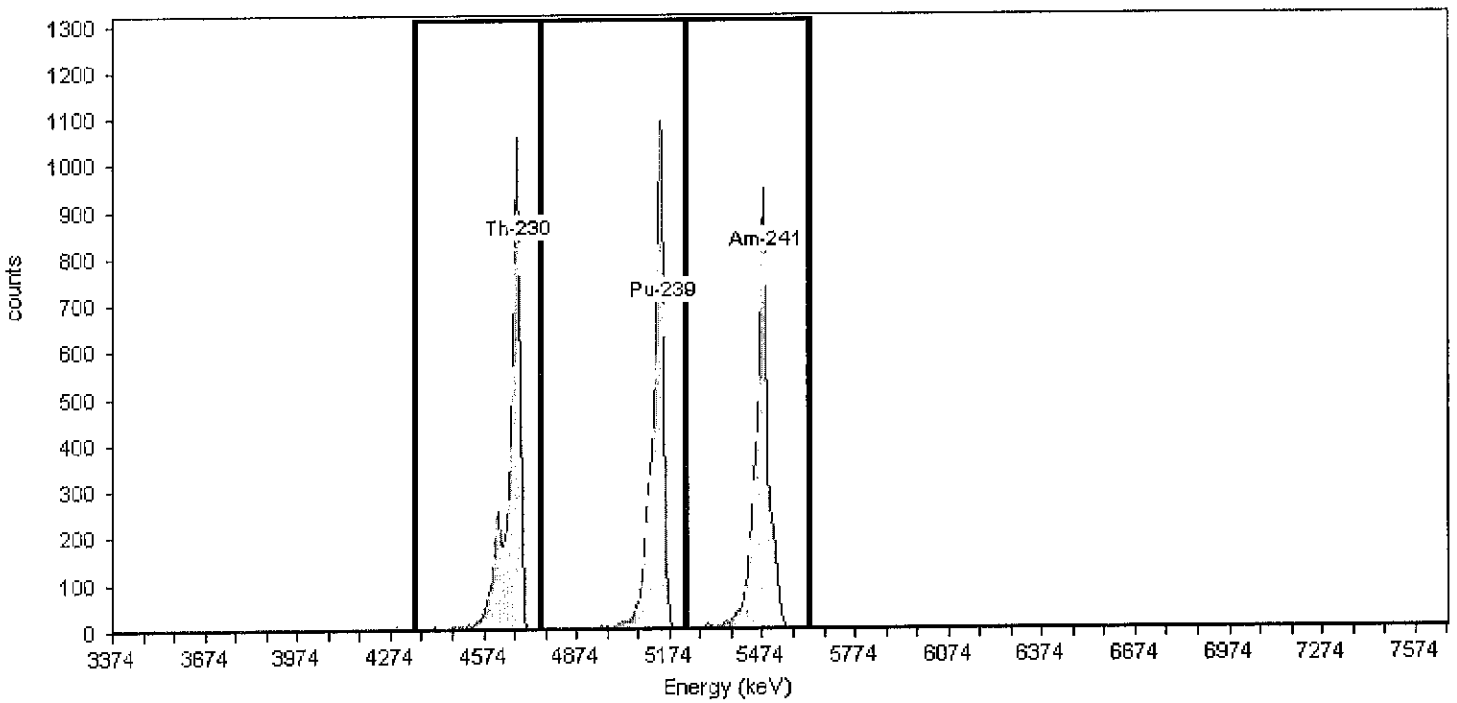
Certificate ID: 82234-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV53 , SN: 50-051A6
Acquisition Start Date: 12/15/2011 3:06:32AM
Live Time: 60.00 min.
Real Time: 60.17 min.
Efficiency: 28.52% +/- 0.50% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,729.00	95.48
Pu-239	240	5.16	186	249	6,156.00	102.60
Am-241	284	5.49	249	303	5,846.00	97.43

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:54:49AM 7/25/2011

Calibration

Name: June2011_AV54
Description:
Detector: AV54

Calibration Date: 6/2/2011 6:10:00AM
Analyst: 60040

Source Info

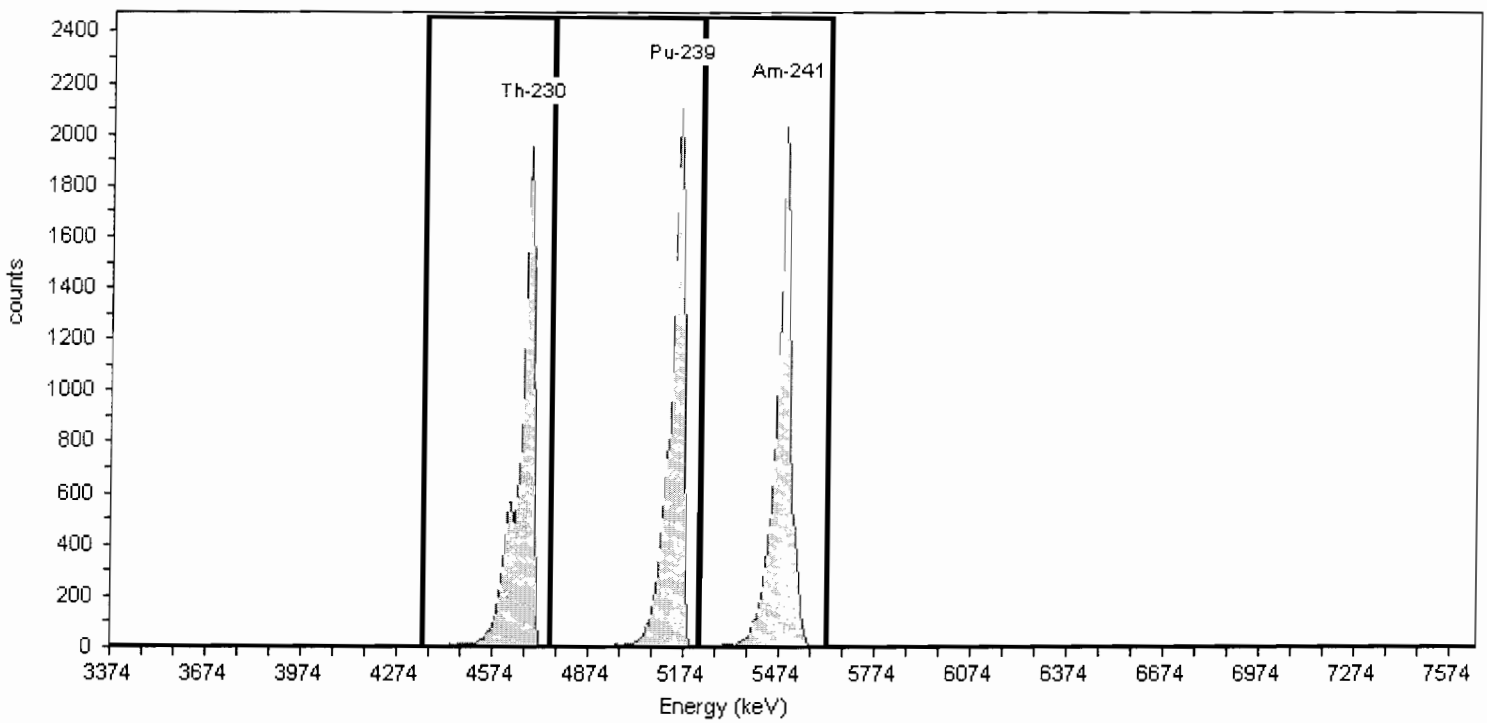
Certificate ID: 82243-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV54 , SN: 48-046II6
Acquisition Start Date: 6/1/2011 5:40:52PM
Live Time: 140.00 min.
Real Time: 148.80 min.
Efficiency: 27.19% +/- 0.35% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	13,363.00	95.45
Pu-239	240	5.16	186	249	13,566.00	96.90
Am-241	284	5.49	249	303	14,682.00	104.87

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:54:54AM 7/25/2011

Calibration

Name: June2011_AV54_ICV
Description:
Detector: AV54

Calibration Date: 6/2/2011 5:27:29PM
Analyst: 60040

Source Info

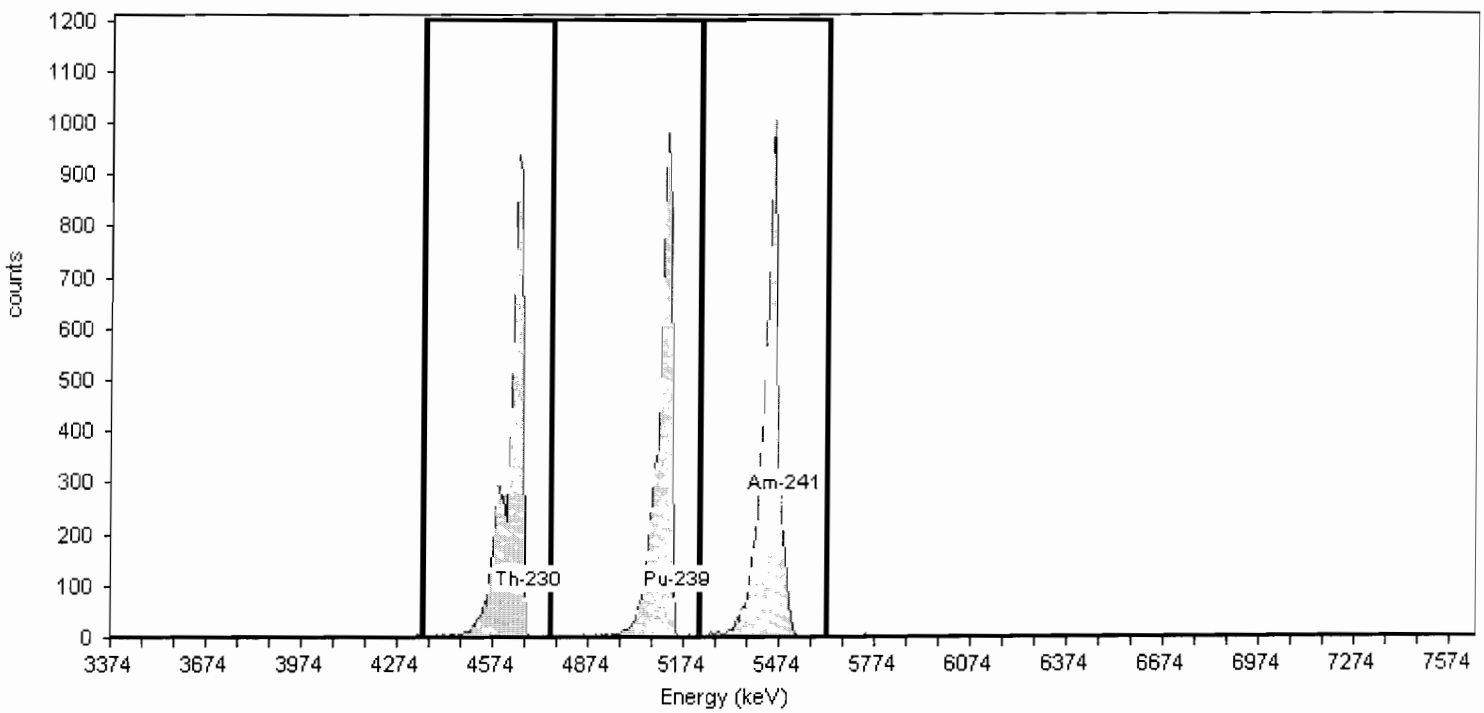
Certificate ID: 82242-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV54 , SN: 48-046II6
Acquisition Start Date: 6/2/2011 12:23:45PM
Live Time: 60.00 min.
Real Time: 60.03 min.
Efficiency: 27.63% +/- 0.45% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,627.00	110.45
Pu-239	240	5.16	186	249	6,234.00	103.90
Am-241	284	5.49	249	303	7,175.00	119.58

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:55:02AM 7/25/2011

Calibration

Name: June2011A_AV55
Description:
Detector: AV55

Calibration Date: 6/20/2011 8:44:19AM
Analyst: 60040

Source Info

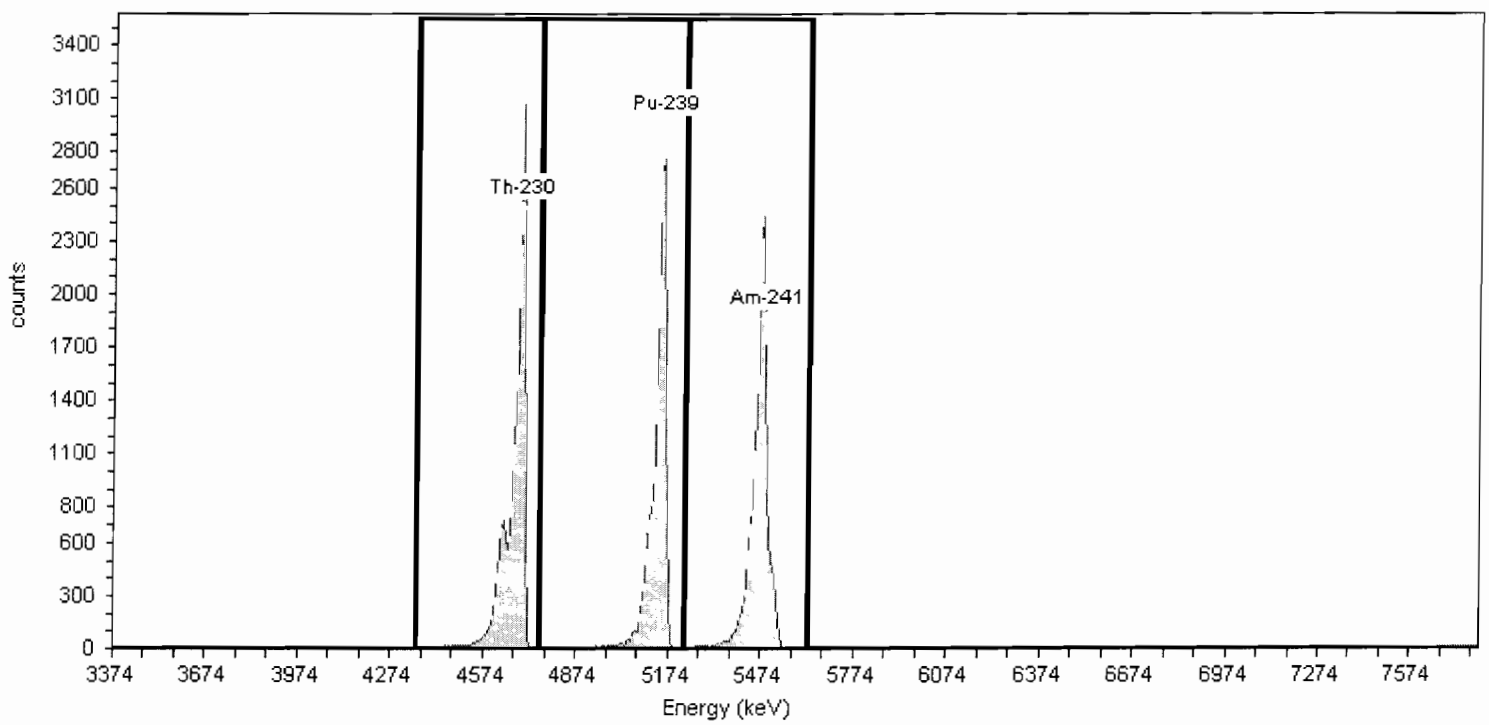
Certificate ID: 82244-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV55 , SN: 50-051C2
Acquisition Start Date: 6/20/2011 4:10:16AM
Live Time: 140.00 min.
Real Time: 140.02 min.
Efficiency: 26.85% +/- 0.32% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	16,633.00	118.81
Pu-239	240	5.16	186	249	15,204.00	108.60
Am-241	284	5.49	249	303	15,435.00	110.25

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:55:07AM 7/25/2011

Calibration

Name: June2011_AV55_ICV
Description:
Detector: AV55

Calibration Date: 6/20/2011 12:56:00PM
Analyst: 60040

Source Info

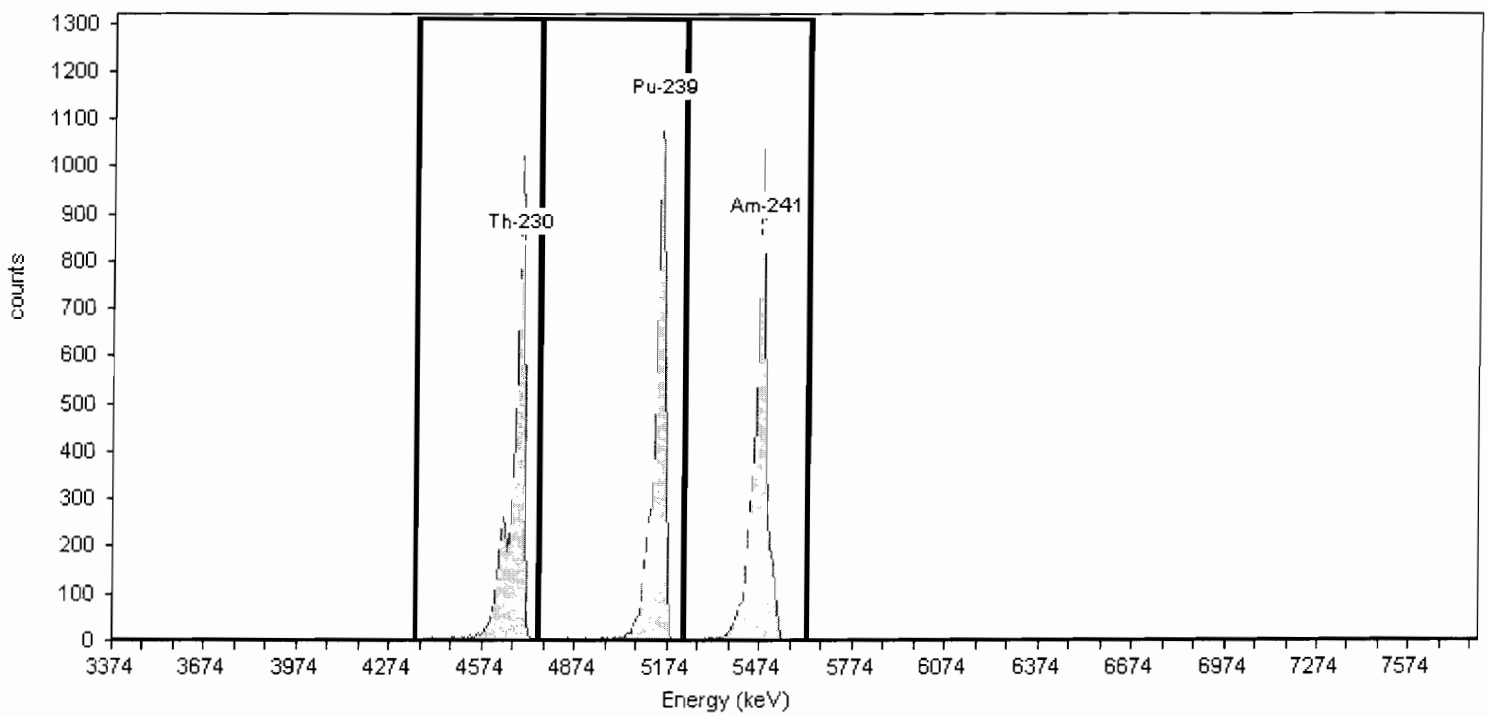
Certificate ID: 82243-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV55 , SN: 50-051C2
Acquisition Start Date: 6/20/2011 11:31:25AM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 26.93% +/- 0.47% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,680.00	94.67
Pu-239	240	5.16	186	249	5,808.00	96.80
Am-241	284	5.49	249	303	6,178.00	102.97

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:51:34PM 12/16/2011

Calibration

Name: Dec2011_AV57
Description:
Detector: AV57

Calibration Date: 12/13/2011 9:33:31AM
Analyst: 60040

Source Info

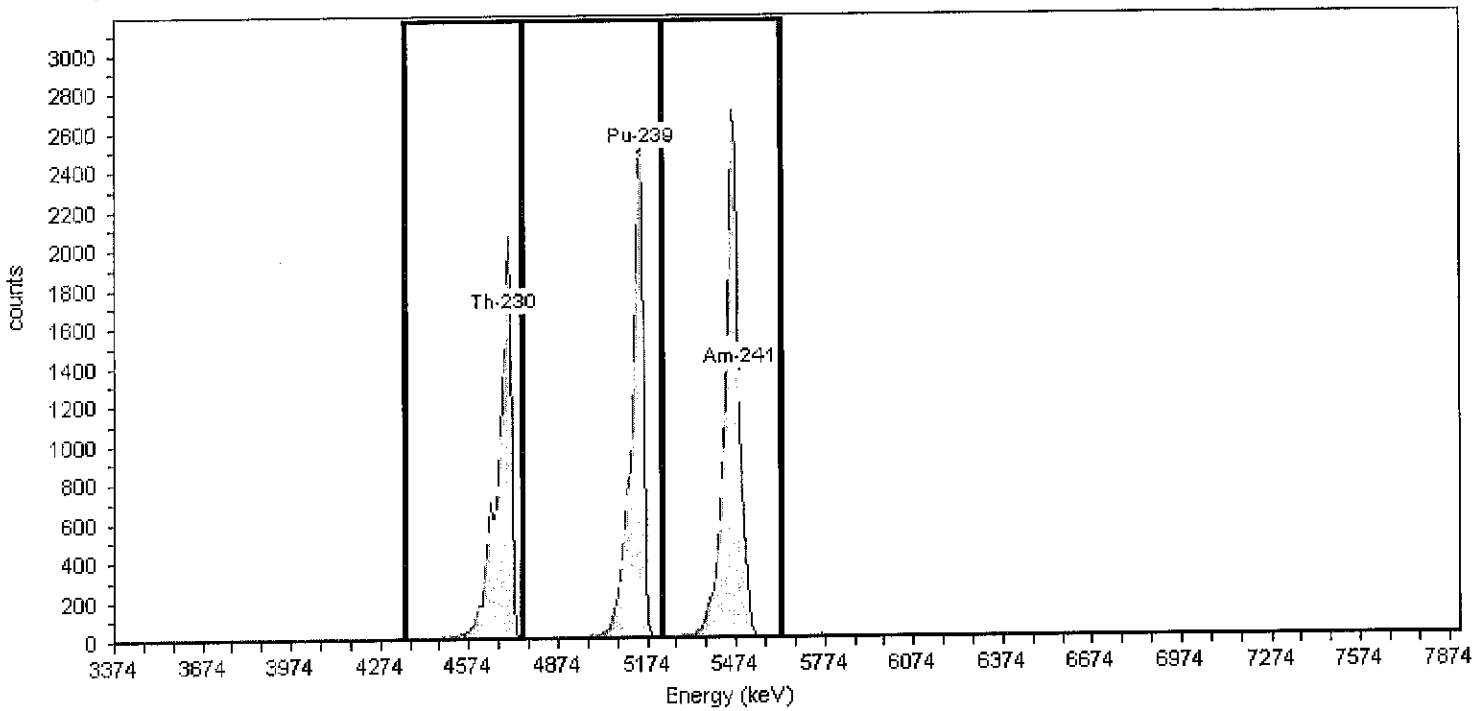
Certificate ID: 82240-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV57 , SN: 48-158EE3
Acquisition Start Date: 12/12/2011 8:11:21PM
Live Time: 140.00 min.
Real Time: 140.02 min.
Efficiency: 27.92% +/- 0.32% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	14,573.00	104.09
Pu-239	240	5.16	186	249	16,916.00	120.83
Am-241	284	5.49	249	303	19,507.00	139.34

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:51:43PM 12/16/2011

Calibration

Name: Dec2011_AV57_ICVa
Description:
Detector: AV57

Calibration Date: 12/13/2011 9:33:55AM
Analyst: 60040

Source Info

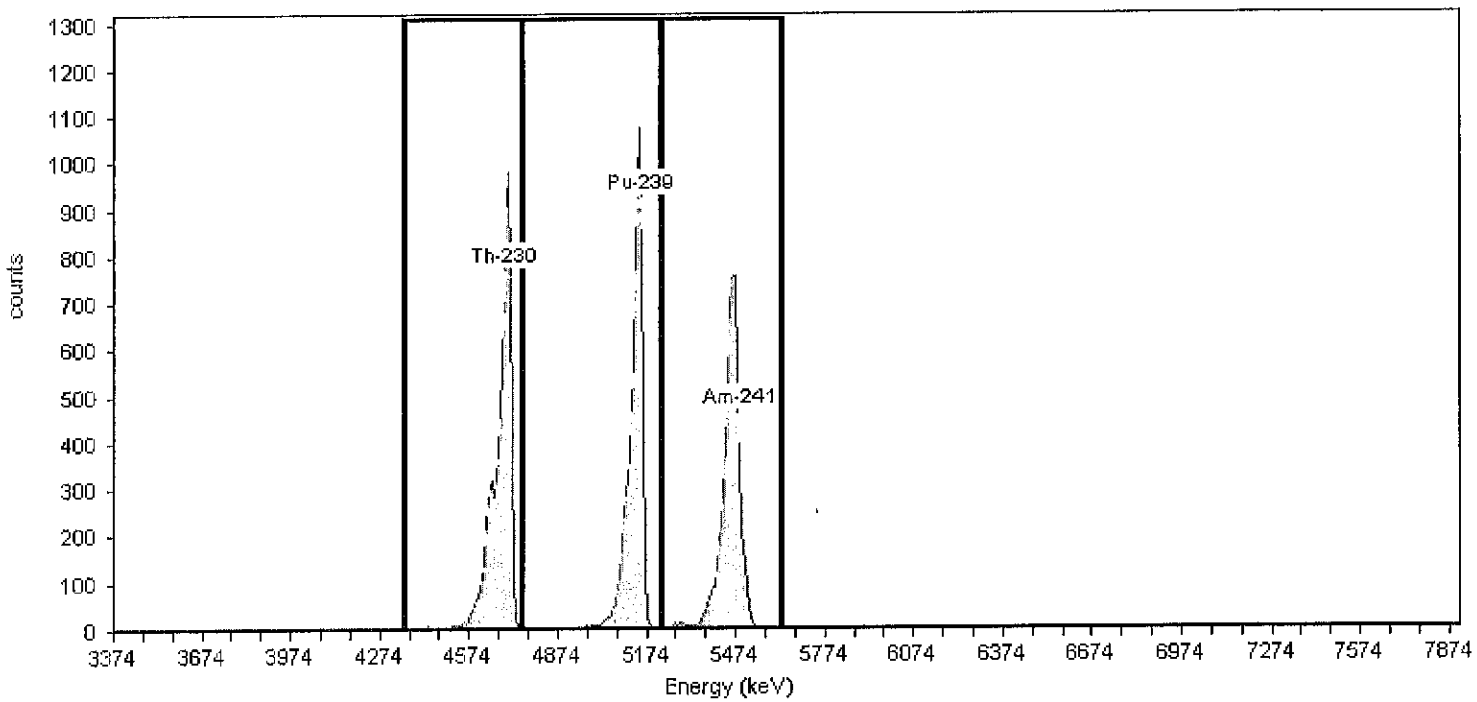
Certificate ID: 82238-334
Prepared by: Analytics

Certification Date: 6/1/2010 12:00:00PM
Description:

Acquisition

Detector: AV57 , SN: 48-158EE3
Acquisition Start Date: 12/12/2011 10:41:11PM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 27.34% +/- 0.46% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,922.00	115.37
Pu-239	240	5.16	186	249	6,699.00	111.65
Am-241	284	5.49	249	303	5,839.00	97.32

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:36:09AM 2/27/2012

Calibration

Name: February2012_AV58
Description:
Detector: AV58

Calibration Date: 2/24/2012 9:01:54AM
Analyst: 60040

Source Info

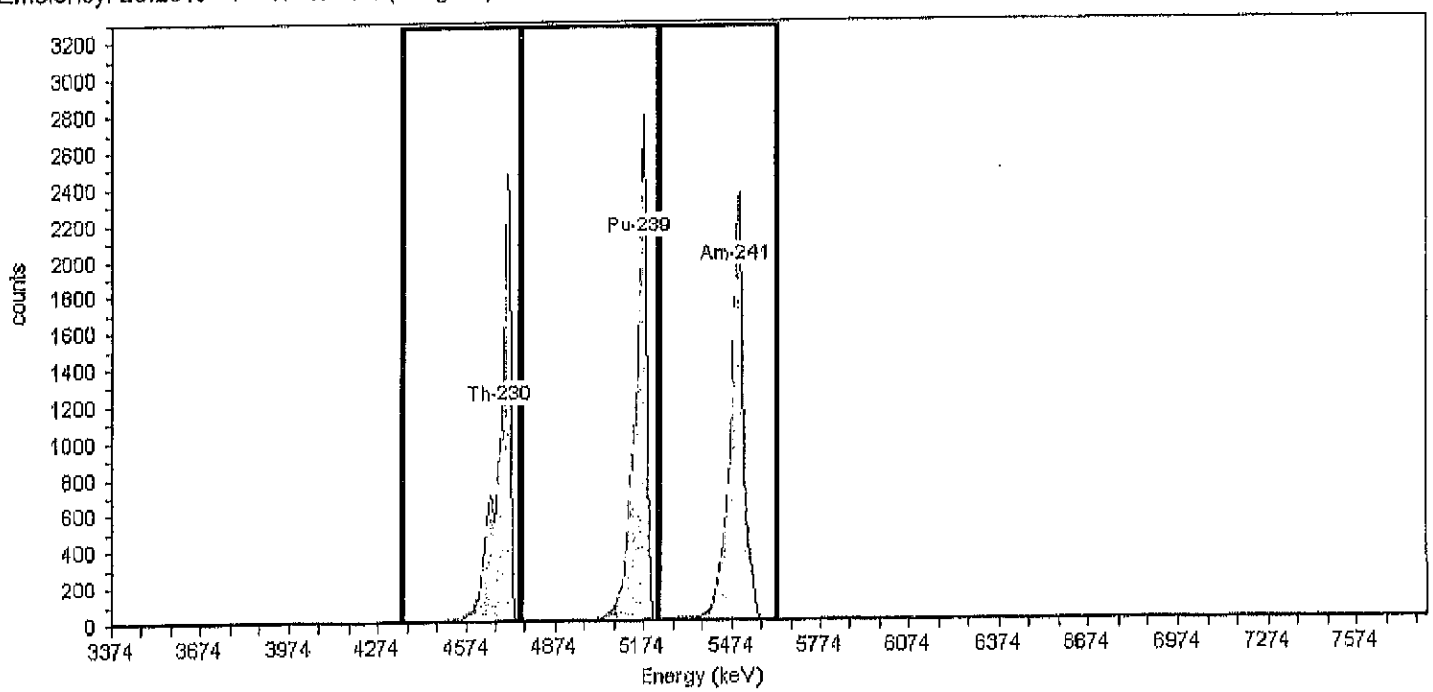
Certificate ID: 82241-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV58 , SN: 48-158EE4
Acquisition Start Date: 2/23/2012 11:03:58PM
Live Time: 140.00 min.
Real Time: 140.02 min.
Efficiency: 28.29% +/- 0.34% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	15,634.00	111.67
Pu-239	240	5.16	186	249	16,079.00	114.85
Am-241	284	5.49	249	303	15,943.00	113.88

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:36:20AM 2/27/2012

Calibration

Name: Feb2012_AV58_ICV
Description:
Detector: AV58

Calibration Date: 2/24/2012 12:25:49PM
Analyst: 60040

Source Info

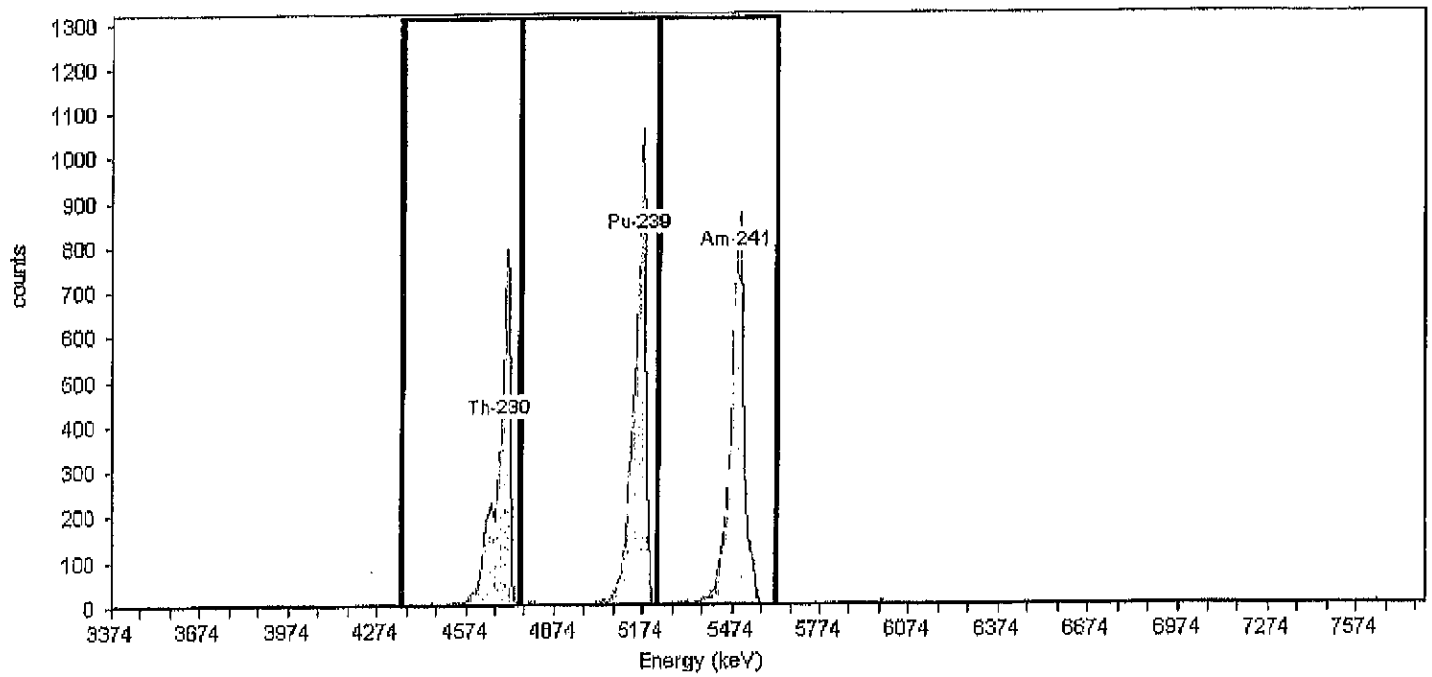
Certificate ID: 63507-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:00PM
Description:

Acquisition

Detector: AV58 , SN: 48-158EE4
Acquisition Start Date: 2/24/2012 11:23:00AM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 26.51% +/- 0.41% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,117.00	85.28
Pu-239	240	5.16	186	249	6,228.00	103.80
Am-241	284	5.49	249	303	5,990.00	99.83

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:36:25AM 2/27/2012

Calibration

Name: Feb2012_AV58a_ICV
Description:
Detector: AV58

Calibration Date: 2/24/2012 3:16:31PM
Analyst: 60040

Source Info

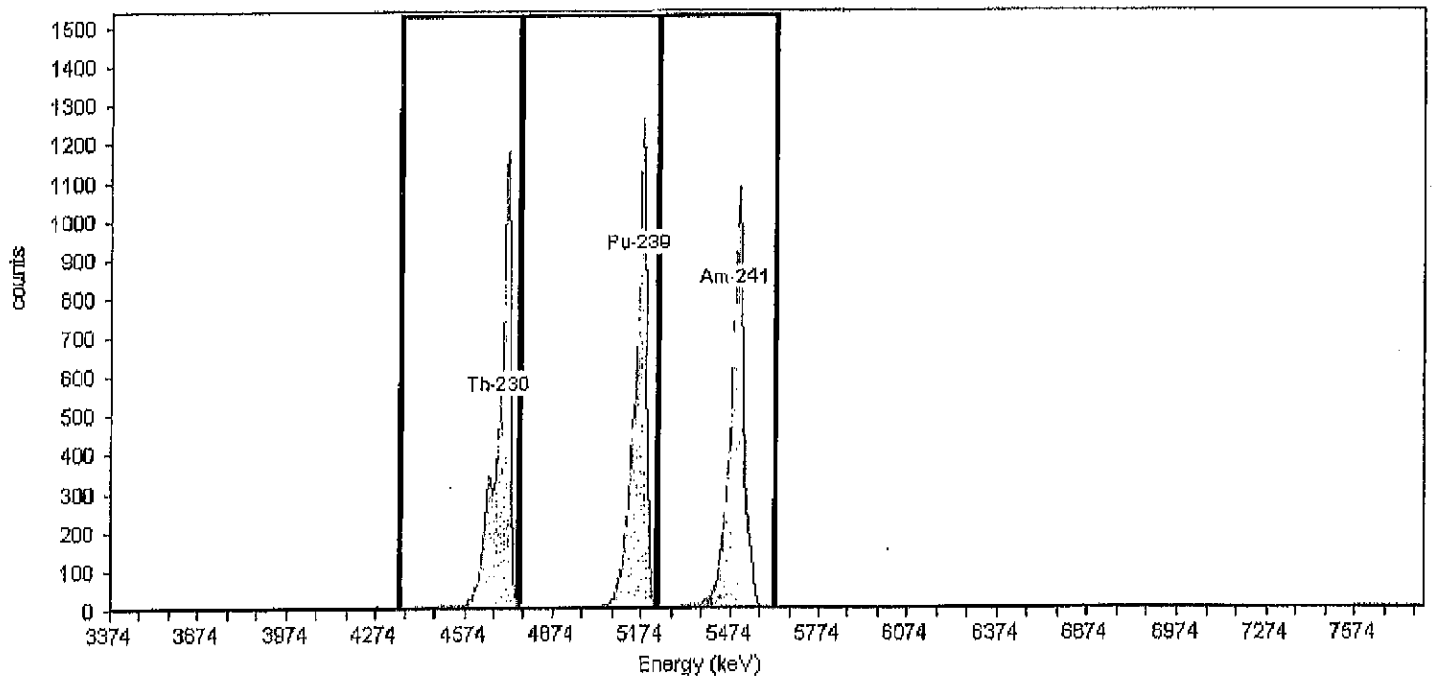
Certificate ID: 82232-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV58 , SN: 48-158EE4
Acquisition Start Date: 2/24/2012 2:16:15PM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 28.63% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	7,831.00	130.52
Pu-239	240	5.16	186	249	7,354.00	122.57
Am-241	284	5.49	249	303	7,529.00	125.48

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:36:31AM 2/27/2012

Calibration

Name: Feb2012_AV58b_ICV
Description:
Detector: AV58

Calibration Date: 2/24/2012 4:28:08PM
Analyst: 60040

Source Info

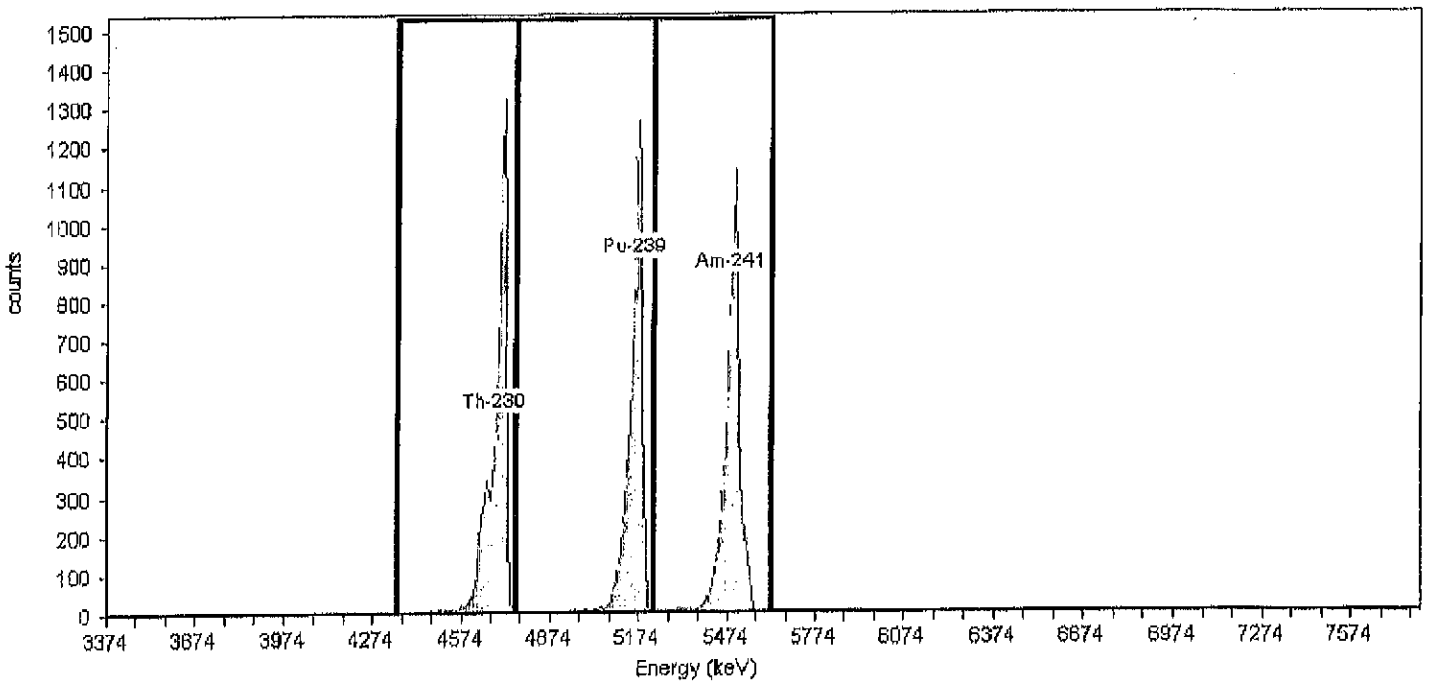
Certificate ID: 82232-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV58 , SN: 48-158EE4
Acquisition Start Date: 2/24/2012 3:27:02PM
Live Time: 60.00 min.
Real Time: 60.00 min.
Efficiency: 28.53% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	7,817.00	130.28
Pu-239	240	5.16	186	249	7,312.00	121.87
Am-241	284	5.49	249	303	7,502.00	125.03

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:36:41AM 2/27/2012

Calibration

Name: February2012_AV59
Description:
Detector: AV59

Calibration Date: 2/24/2012 9:02:17AM
Analyst: 60040

Source Info

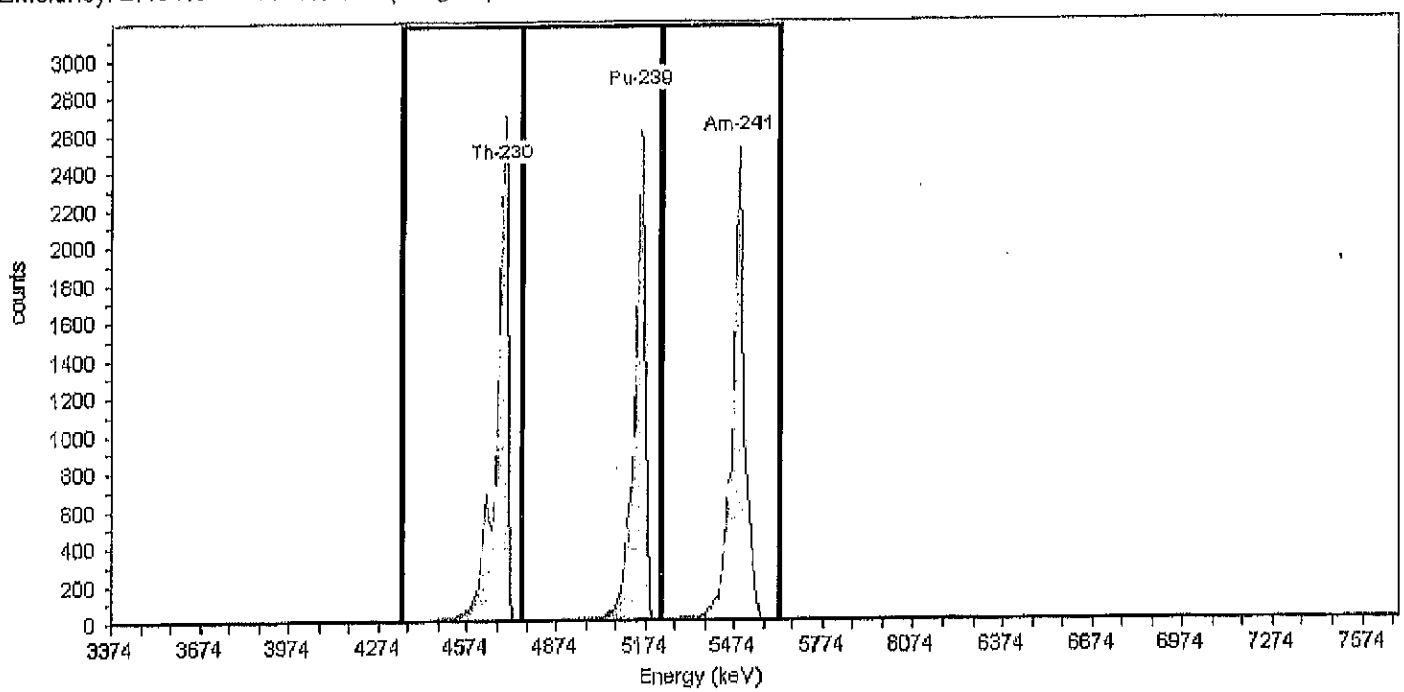
Certificate ID: 82242-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV59 , SN: 49-155M7
Acquisition Start Date: 2/23/2012 11:04:15PM
Live Time: 140.00 min.
Real Time: 140.02 min.
Efficiency: 27.94% +/- 0.34% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	15,685.00	112.04
Pu-239	240	5.16	186	249	14,815.00	105.82
Am-241	284	5.49	249	303	16,745.00	119.61

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:36:46AM 2/27/2012

Calibration

Name: Feb2012_AV59_ICV
Description:
Detector: AV59

Calibration Date: 2/24/2012 12:26:03PM
Analyst: 60040

Source Info

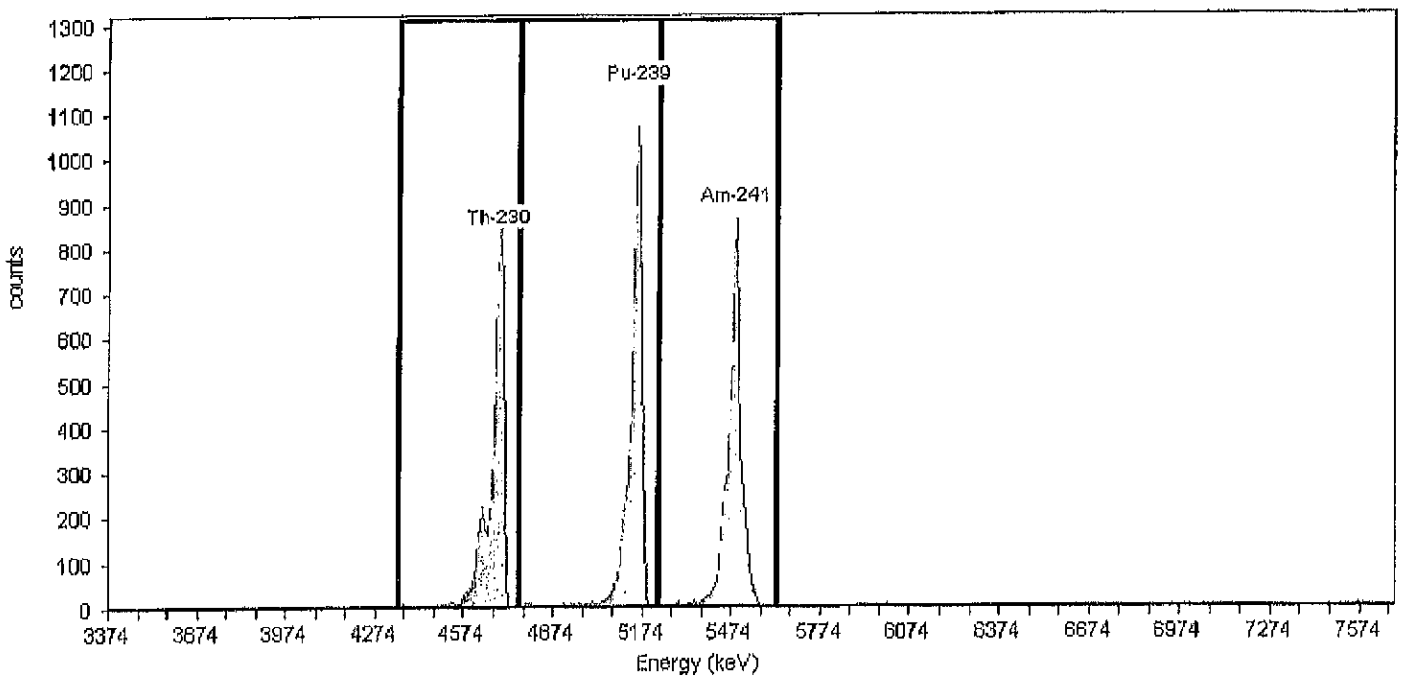
Certificate ID: 63508A-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:00PM
Description:

Acquisition

Detector: AV59 , SN: 49-155M7
Acquisition Start Date: 2/24/2012 11:23:02AM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 26.97% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,182.00	86.37
Pu-239	240	5.16	186	249	6,201.00	103.35
Am-241	284	5.49	249	303	5,669.00	94.48

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Yearly Calibration
Alpha Vision
May 2012
AV48 and AV56

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency (20-32%)	Recov (+/-5%)
AV1 Dec2011_AV1	12/15/2011 9:30:49 AM	82232-334	0.2769	Pass
AV2 Dec2011_AV2	12/15/2011 9:31:52 AM	82233-334	0.2696	Pass
AV3 June2011_AV3	6/1/2011 2:07:22 PM	63508A-334	0.2671	Pass
AV4 June2011_AV4	6/1/2011 2:07:26 PM	63509A-334	0.2679	Pass
AV6 June2011_AV6	6/1/2011 2:08:00 PM	82233-334	0.2795	Pass
AV7 June2011_AV7	6/1/2011 2:08:04 PM	82234-334	0.2783	Pass
AV8 June2011_AV8	6/1/2011 2:08:08 PM	82235-334	0.2799	Pass
AV9 Feb2012_AV9a	2/22/2012 5:00:30 PM	82240-334	0.2776	Pass
AV10 Feb2012_AV10a	2/22/2012 8:32:27 PM	82241-334	0.2709	Pass
AV11 Dec2011_AV11	12/15/2011 1:33:27 PM	82242-334	0.2749	Pass
AV12 Feb2012_AV12a	2/22/2012 5:00:57 PM	82243-334	0.2682	Pass
AV13 June2011_AV13a	6/1/2011 2:12:53 PM	82240-334	0.2795	Pass
AV14 Dec2011_AV14	12/15/2011 9:32:53 AM	82245-334	0.2806	Pass
AV15 June2011_AV15	6/1/2011 2:13:10 PM	82242-334	0.2731	Pass
AV16 Feb2012_AV16a	2/22/2012 5:01:24 PM	82247-334	0.2769	Pass
AV17 June2011A_AV17	6/10/2011 2:02:28 PM	82244-334	0.2619	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV18						
Feb2012_AV18a	2/22/2012 5:01:33 PM	82233-334	0.2699	Pass		
AV19						
Dec2011_AV19	12/8/2011 9:35:31 AM	82234-334	0.2724	Pass		
AV20						
June2011_AV20	6/1/2011 2:13:04 PM	82247-334	0.2701	Pass		
AV21						
June2011_AV21b	6/29/2011 3:56:43 PM	63508A-334	0.2596	Pass		
AV22						
Dec2011_AV22	2/21/2012 2:57:59 PM	82237-334	0.2680	Pass		
AV23						
June2011_AV23	6/2/2011 6:09:19 AM	63508A-334	0.2563	Pass		
AV24						
Dec2011_AV24	12/15/2011 9:33:47 AM	82240-334	0.2717	Pass		
AV43						
June2011A_AV43	6/20/2011 1:52:02 AM	82232-334	0.2786	Pass		
AV44						
June2011A_AV44	6/20/2011 8:43:44 AM	82233-334	0.2708	Pass		
AV45						
June2011_AV45	6/2/2011 6:09:33 AM	82234-334	0.2811	Pass		
AV46						
February2012_AV46	2/24/2012 9:01:09 AM	82244-334	0.2721	Pass		
AV47						
June2011A_AV47	6/20/2011 8:43:55 AM	82236-334	0.2691	Pass		
AV48						
May2012_AV48	5/3/2012 9:38:16 AM	82237-334	0.2725	Pass		
May2012_AV48_ICV	5/3/2012 9:38:44 AM	82238-334	0.2704	Pass	99.2470	Pass
AV49						
June2011_AV49	6/2/2011 6:09:47 AM	82238-334	0.2849	Pass		
AV50						
February2012_AV50	2/24/2012 9:01:31 AM	82232-334	0.2822	Pass		
AV51						
June2011_AV51	6/2/2011 6:09:53 AM	82240-334	0.2771	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV52						
June2011_AV52	6/2/2011 6:09:56 AM	82241-334	0.2870	Pass		
AV53						
Dec2011_AV53	12/15/2011 9:35:01 AM	82235-334	0.2846	Pass		
AV54						
June2011_AV54	6/2/2011 6:10:00 AM	82243-334	0.2719	Pass		
AV55						
June2011A_AV55	6/20/2011 8:44:19 AM	82244-334	0.2685	Pass		
AV56						
May2012_AV56	5/3/2012 9:37:34 AM	82238-334	0.2680	Pass		
May2012_AV56_ICV	5/3/2012 9:37:51 AM	82246-334	0.2612	Pass	97.4594	Pass
AV57						
Dec2011_AV57	12/13/2011 9:33:31 AM	82240-334	0.2792	Pass		
AV58						
February2012_AV58	2/24/2012 9:01:54 AM	82241-334	0.2829	Pass		
AV59						
February2012_AV59	2/24/2012 9:02:17 AM	82242-334	0.2794	Pass		
AV60						
May2011_AV60	6/2/2011 11:03:44 AM	63507-334	0.2647	Pass		
AV61						
June2011_AV61	6/20/2011 2:14:49 PM	63508A-334	0.2663	Pass		
AV62						
May2011_AV62	6/2/2011 11:15:48 AM	63509A-334	0.2723	Pass		
AV63						
Feb2012_AV63	2/23/2012 4:05:57 PM	82246-334	0.2686	Pass		
AV64						
May2011_AV64	6/2/2011 11:16:26 AM	82233-334	0.2832	Pass		
AV65						
Feb2012_AV65	2/23/2012 4:06:15 PM	82232-334	0.2841	Pass		
AV66						
Dec2011_AV66	12/13/2011 9:35:41 AM	82233-334	0.2772	Pass		
AV67						
May2011_AV67	6/2/2011 11:17:07 AM	82236-334	0.2930	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov	(+/-5%)
AV68 May2011_AV68	2/21/2012 2:59:22 PM	82237-334	0.2733	Pass	
AV69 June2011_AV69	6/21/2011 2:25:40 PM	82238-334	0.2749	Pass	
AV70 June2011_AV70	6/21/2011 2:26:58 PM	82239-334	0.2763	Pass	
AV71 May2011_AV71	6/2/2011 11:17:45 AM	82240-334	0.2741	Pass	
AV72 May2011_AV72	6/2/2011 11:17:59 AM	82241-334	0.2892	Pass	
AV73 Dec2011_AV73	12/16/2011 2:11:57 PM	82241-334	0.2786	Pass	
AV74 Dec2011_AV74b	12/13/2011 12:09:06 PM	82242-334	0.2738	Pass	
AV75 May2011_AV75	6/2/2011 11:18:19 AM	82244-334	0.2642	Pass	
AV77 May2011_AV77	6/2/2011 11:18:32 AM	82246-334	0.2664	Pass	
AV78 May2011_AV78	6/2/2011 11:18:45 AM	82247-334	0.2767	Pass	
AV79 June2011_AV79c	6/29/2011 3:57:04 PM	82232-334	0.2834	Pass	
AV80 May2011_AV80	6/10/2011 5:01:32 PM	63507-334	0.2579	Pass	
AV81 Dec2011_AV81	12/15/2011 12:13:48 PM	82233-334	0.2814	Pass	
AV82 May2011_AV82	6/28/2011 9:27:42 PM	63509A-334	0.2676	Pass	
AV83 May2011_AV83	6/28/2011 9:28:42 PM	82232-334	0.2783	Pass	
AV84 May2011_AV84	6/28/2011 9:29:52 PM	82233-334	0.2740	Pass	
AV85 May2011_AV85	6/28/2011 9:30:57 PM	82234-334	0.2852	Pass	

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov	(+/-5%)
AV86 May2011_AV86	6/28/2011 9:31:44 PM	82235-334	0.2811	Pass	
AV87 June2011_AV87	6/21/2011 2:25:24 PM	82236-334	0.2944	Pass	
AV88 May2011_AV88	2/21/2012 2:59:57 PM	82237-334	0.2736	Pass	
AV89 May2011_AV89	6/2/2011 11:21:41 AM	82238-334	0.2698	Pass	
AV90 May2011_AV90	6/28/2011 9:34:16 PM	82239-334	0.2753	Pass	
AV91 March2012_AV91a	3/30/2012 9:27:41 AM	82235-334	0.2781	Pass	
AV92 May2011_AV92	6/28/2011 9:35:11 PM	82241-334	0.2775	Pass	
AV93 May2011_AV93	6/10/2011 5:05:03 PM	82242-334	0.2772	Pass	
AV94 June2011_AV94a	6/29/2011 3:57:09 PM	82247-334	0.2751	Pass	
AV95 June2011_AV95b	6/30/2011 8:32:04 PM	82244-334	0.2663	Pass	
AV96 June2011_AV96	6/21/2011 2:25:55 PM	82245-334	0.2743	Pass	
AV97 May2011_AV97	6/28/2011 9:40:29 PM	82246-334	0.2715	Pass	
AV98 May2011_AV98	6/28/2011 9:41:09 PM	82247-334	0.2807	Pass	
AV99 Dec2011_AV99a	12/15/2011 1:34:42 PM	82236-334	0.2661	Pass	
AV100 June2011_AV100	6/10/2011 2:41:33 PM	63507-334	0.2630	Pass	
AV101 June2011_AV101	6/10/2011 2:42:11 PM	63508A-334	0.2594	Pass	
AV102 June2011_AV102	6/10/2011 2:42:28 PM	63509A-334	0.2668	Pass	

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov (+/-5%)
AV103 June2011_AV103a	2/21/2012 3:00:31 PM	82237-334	0.2722	Pass
AV104 June2011_AV104	6/10/2011 2:45:37 PM	82233-334	0.2711	Pass
AV105 June2011_AV105	6/10/2011 2:48:33 PM	82234-334	0.2601	Pass
AV106 June2011_AV106	6/10/2011 2:49:36 PM	82235-334	0.2828	Pass
AV107 June2011_AV107	6/10/2011 2:49:58 PM	82236-334	0.2809	Pass
AV108 Dec2011_AV108a	12/15/2011 4:14:23 PM	82246-334	0.2763	Pass
AV109 June2011_AV109	6/10/2011 2:50:52 PM	82238-334	0.2642	Pass
AV110 June2011_AV110	6/10/2011 2:51:15 PM	82239-334	0.2761	Pass
AV111 June2011_AV111	6/10/2011 2:51:42 PM	82240-334	0.2742	Pass
AV112 June2011_AV112	6/10/2011 2:52:10 PM	82241-334	0.2689	Pass
AV113 June2011_AV113a	6/29/2011 8:19:17 PM	82247-334	0.2797	Pass
AV114 June2011_AV114	6/10/2011 2:53:57 PM	82243-334	0.2672	Pass
AV115 June2011_AV115	6/10/2011 2:57:31 PM	82244-334	0.2713	Pass
AV116 May2011_AV116	6/2/2011 11:22:31 AM	82245-334	0.2802	Pass
AV117 June2011_AV117	6/10/2011 2:54:57 PM	82246-334	0.2598	Pass
AV118 June2011_AV118	6/10/2011 2:55:22 PM	82247-334	0.2708	Pass
AV119 June2011_AV119a	6/29/2011 3:57:22 PM	82234-334	0.2780	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov (+/-5%)
AV120 June2011_AV120	6/10/2011 2:56:12 PM	63507-334	0.2673	Pass
AV121 June2011_AV121	6/10/2011 2:58:09 PM	63508A-334	0.2680	Pass
AV122 June2011_AV122	6/10/2011 2:58:33 PM	63509A-334	0.2633	Pass
AV123 June2011_AV123a	6/21/2011 2:27:18 PM	82232-334	0.2737	Pass
AV124 June2011_AV124a	6/21/2011 2:26:12 PM	82233-334	0.2650	Pass
AV125 June2011_AV125a	6/21/2011 2:26:25 PM	82234-334	0.2746	Pass
AV126 June2011_AV126	6/3/2011 3:29:01 PM	82235-334	0.2754	Pass
AV127 June2011A_AV127	6/28/2011 9:47:50 PM	82236-334	0.2755	Pass
AV128 June2011_AV128	2/21/2012 3:01:06 PM	82237-334	0.2692	Pass
AV130 June2011_AV130	6/3/2011 3:29:19 PM	82239-334	0.2686	Pass
AV131 February2012_AV131	2/24/2012 9:02:44 AM	82238-334	0.2733	Pass
AV132 June2011_AV132a	6/30/2011 11:37:39 AM	82247-334	0.2712	Pass
AV133 Feb2012_AV133	2/24/2012 1:40:22 PM	82241-334	0.2654	Pass
AV134 June2011_AV134	6/3/2011 3:29:39 PM	82243-334	0.2826	Pass
AV135 June2011_AV135	6/3/2011 3:29:47 PM	82244-334	0.2626	Pass
AV136 June2011_AV136	6/3/2011 3:29:51 PM	82245-334	0.2706	Pass
AV137 June2011_AV137	6/3/2011 3:29:43 PM	82246-334	0.2746	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov (+/-5%)
AV138 June2011_AV138	6/3/2011 3:29:55 PM	82247-334	0.2648	Pass
AV139 June2011_AV139a	6/29/2011 3:57:26 PM	82235-334	0.2713	Pass
AV140 June2011_AV140	6/3/2011 3:30:04 PM	63507-334	0.2557	Pass
AV141 June2011_AV141	6/3/2011 3:30:09 PM	63508A-334	0.2581	Pass
AV142 June2011_AV142	6/3/2011 3:30:14 PM	63509A-334	0.2631	Pass
AV143 Dec2011_AV143	12/15/2011 1:36:38 PM	82235-334	0.2708	Pass
AV144 June2011_AV144	6/10/2011 3:04:53 PM	82233-334	0.2723	Pass
AV145 June2011_AV145	6/10/2011 3:05:03 PM	82234-334	0.2749	Pass
AV146 June2011_AV146	6/10/2011 3:05:14 PM	82235-334	0.2748	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:43:32AM 5/3/2012

Calibration

Sample Name: May2012_AV48
Description:
Detector: AV48

Calibration Date: 5/3/2012 9:38:16AM
Analyst: 60040

Source Info

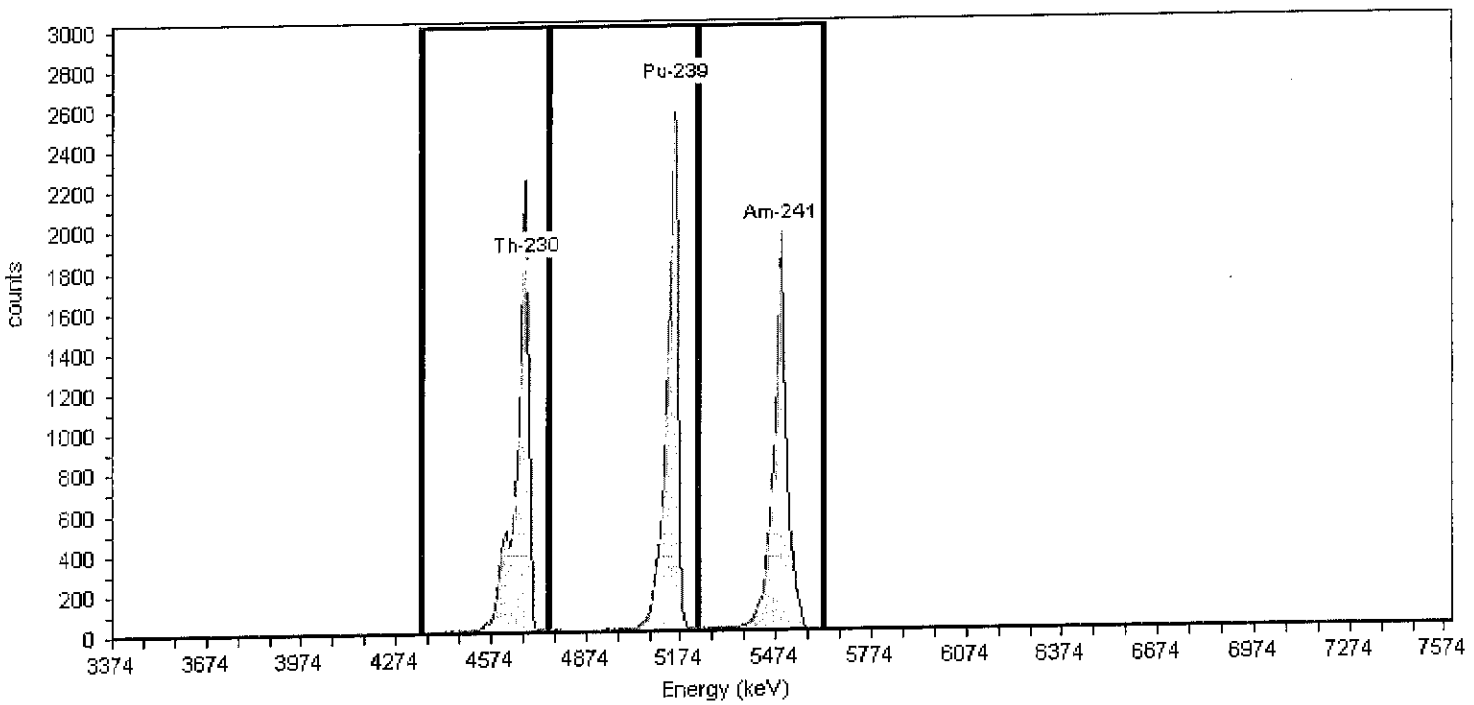
Certificate ID: 82237-334
Prepared by: Analytics

Certification Date: 6/1/2010 12:00:00PM
Description:

Acquisition

Detector: AV48 , SN: 50-051JJ4
Acquisition Start Date: 5/2/2012 11:00:36PM
Live Time: 140.00 min.
Real Time: 140.43 min.
Efficiency: 27.25% +/- 0.37% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	13,222.00	94.44
Pu-239	240	5.16	186	249	14,804.00	105.74
Am-241	284	5.49	249	303	12,886.00	92.04

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:43:40AM 5/3/2012

Calibration

Sample Name: May2012_AV48_ICV
Description:
Detector: AV48

Calibration Date: 5/3/2012 9:38:44AM
Analyst: 60040

Source Info

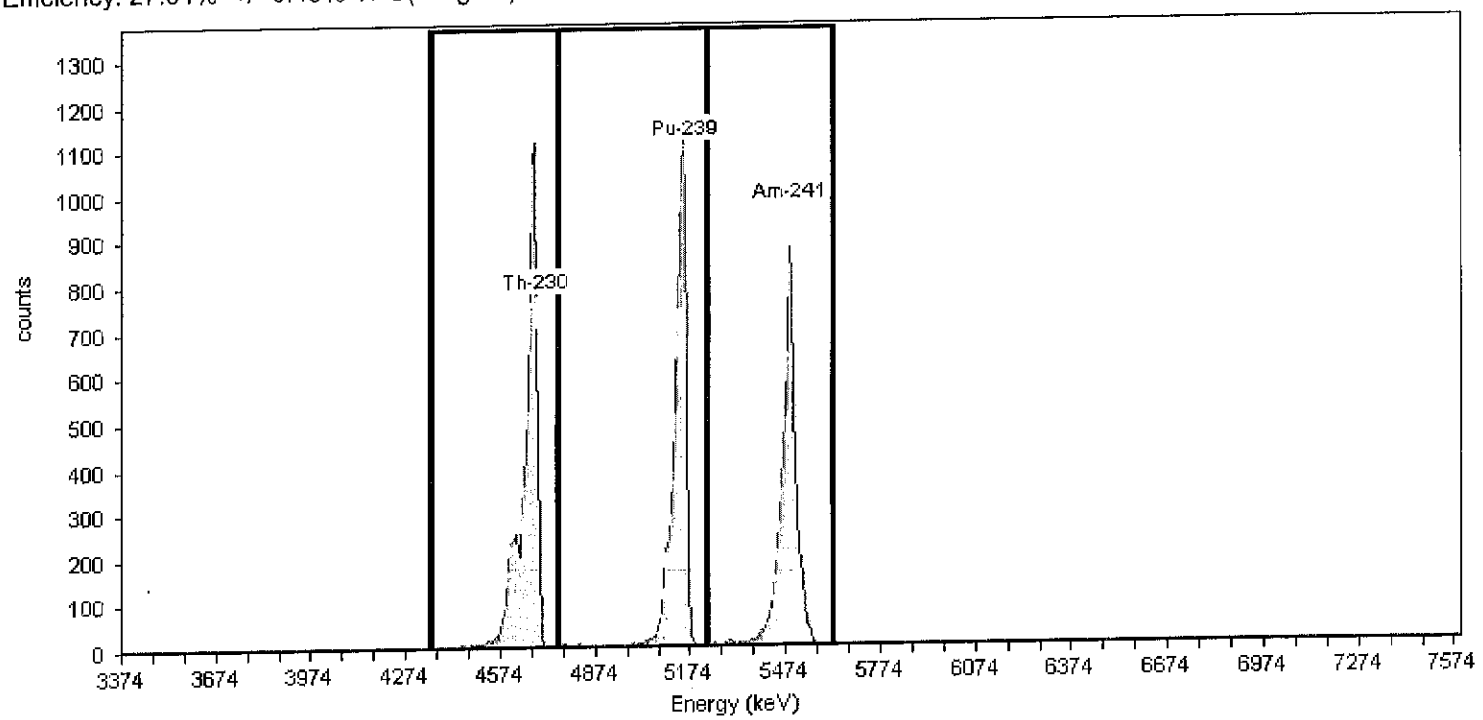
Certificate ID: 82238-334
Prepared by: Analytics

Certification Date: 6/1/2010 12:00:00PM
Description:

Acquisition

Detector: AV48 , SN: 50-051JJ4
Acquisition Start Date: 5/3/2012 1:33:40AM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 27.04% +/- 0.46% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,729.00	112.15
Pu-239	240	5.16	186	249	6,716.00	111.93
Am-241	284	5.49	249	303	5,825.00	97.08

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:43:51AM 5/3/2012

Calibration

Sample Name: May2012_AV56
Description:
Detector: AV56

Calibration Date: 5/3/2012 9:37:34AM
Analyst: 60040

Source Info

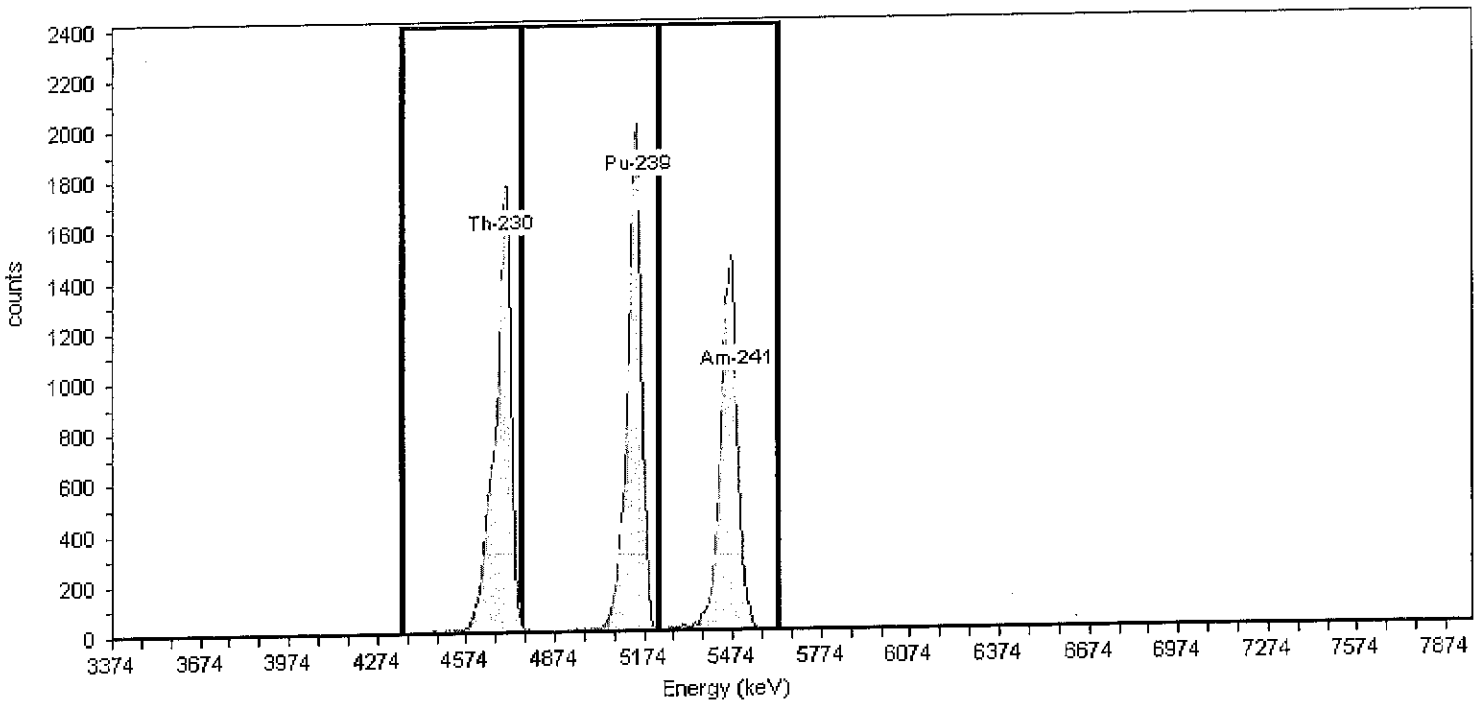
Certificate ID: 82238-334
Prepared by: Analytics

Certification Date: 6/1/2010 12:00:00PM
Description:

Acquisition

Detector: AV56 , SN:
Acquisition Start Date: 5/2/2012 11:00:52PM
Live Time: 140.00 min.
Real Time: 140.02 min.
Efficiency: 26.80% +/- 0.35% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	15,862.00	113.30
Pu-239	240	5.16	186	249	15,428.00	110.20
Am-241	284	5.49	249	303	13,237.00	94.55

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
9:43:59AM 5/3/2012

Calibration

Sample Name: May2012_AV56_ICV
Description:
Detector: AV56

Calibration Date: 5/3/2012 9:37:51AM
Analyst: 60040

Source Info

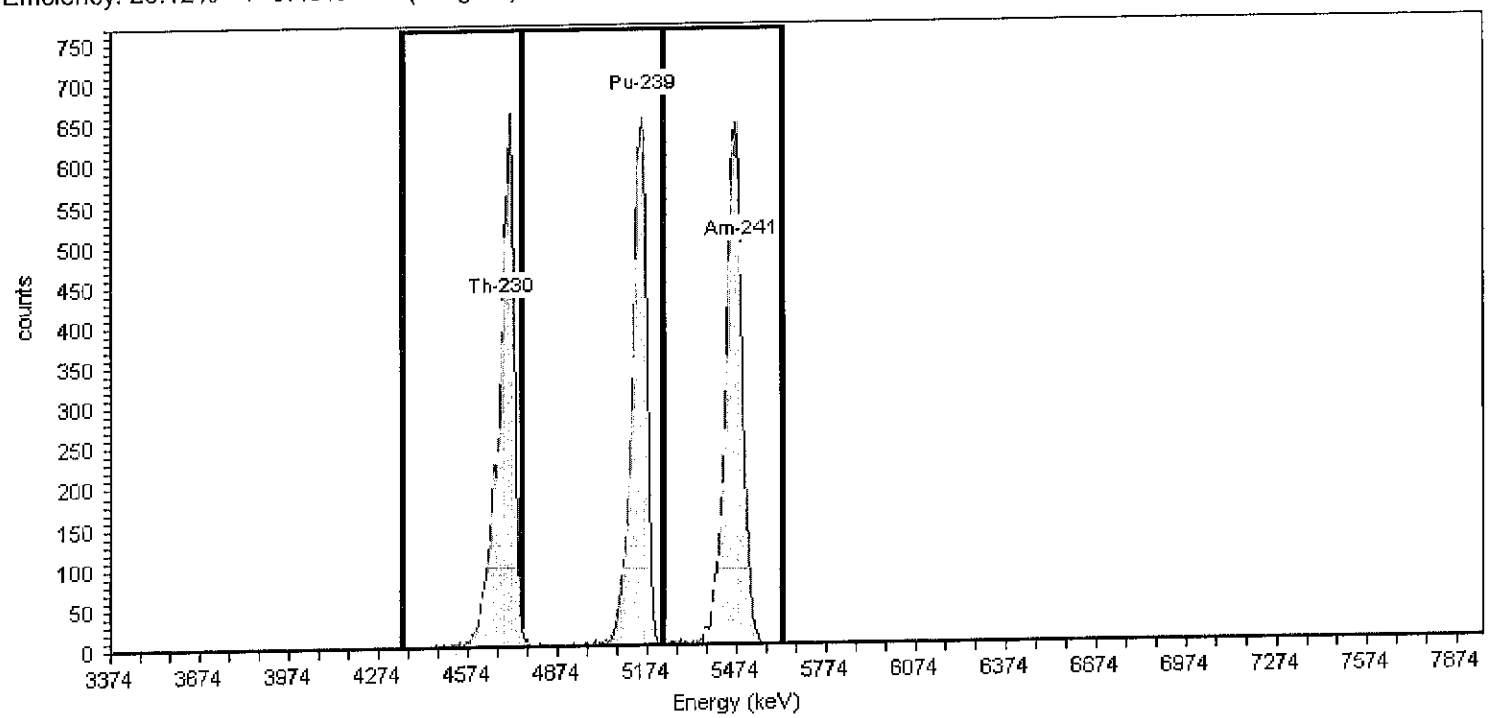
Certificate ID: 82246-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV56 , SN:
Acquisition Start Date: 5/3/2012 1:34:00AM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 26.12% +/- 0.49% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,206.00	86.77
Pu-239	240	5.16	186	249	5,037.00	83.95
Am-241	284	5.49	249	303	5,660.00	94.33

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Yearly Calibrations
Alpha Vision
February 2012
AV1-146

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV1						
Dec2011_AV1	12/15/2011 9:30:49 AM	82232-334	0.2769	Pass		
AV2						
Dec2011_AV2	12/15/2011 9:31:52 AM	82233-334	0.2696	Pass		
AV3						
June2011_AV3	6/1/2011 2:07:22 PM	63508A-334	0.2671	Pass		
AV4						
June2011_AV4	6/1/2011 2:07:26 PM	63509A-334	0.2679	Pass		
AV6						
June2011_AV6	6/1/2011 2:08:00 PM	82233-334	0.2795	Pass		
AV7						
June2011_AV7	6/1/2011 2:08:04 PM	82234-334	0.2763	Pass		
AV8						
June2011_AV8	6/1/2011 2:08:08 PM	82235-334	0.2799	Pass		
AV9						
Feb2012_AV9a	2/22/2012 5:00:30 PM	82240-334	0.2776	Pass		
Feb2012_AV9a_ICV	2/22/2012 8:32:32 PM	82236-334	0.2761	Pass	99.4615	Pass
AV10						
Feb2012_AV10a	2/22/2012 8:32:27 PM	82241-334	0.2709	Pass		
Feb2012_AV10a_ICV	2/23/2012 11:15:43 AM	82237-334	0.2717	Pass	100.292	Pass
AV11						
Dec2011_AV11	12/15/2011 1:33:27 PM	82242-334	0.2749	Pass		
AV12						
Feb2012_AV12a	2/22/2012 5:00:57 PM	82243-334	0.2682	Pass		
Feb2012_AV12a_ICV	2/22/2012 8:32:35 PM	82238-334	0.2707	Pass	100.940	Pass
AV13						
June2011_AV13a	6/1/2011 2:12:53 PM	82240-334	0.2795	Pass		
AV14						
Dec2011_AV14	12/15/2011 9:32:53 AM	82245-334	0.2606	Pass		
AV15						
June2011_AV15	6/1/2011 2:13:10 PM	82242-334	0.2731	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV16						
Feb2012_AV16a	2/22/2012 5:01:24 PM	82247-334	0.2769	Pass		
Feb2012_AV16a_ICV	2/22/2012 6:32:38 PM	82243-334	0.2707	Pass	97.7705	Pass
AV17						
June2011A_AV17	6/10/2011 2:02:28 PM	82244-334	0.2619	Pass		
AV18						
Feb2012_AV18a	2/22/2012 5:01:33 PM	82233-334	0.2699	Pass		
Feb2012_AV18a_ICV	2/22/2012 6:32:42 PM	82247-334	0.2566	Pass	95.0864	Pass
AV19						
Dec2011_AV19	12/6/2011 9:35:31 AM	82234-334	0.2724	Pass		
AV20						
June2011_AV20	6/1/2011 2:13:04 PM	82247-334	0.2701	Pass		
AV21						
June2011_AV21b	6/29/2011 3:56:43 PM	63508A-334	0.2596	Pass		
AV22						
Dec2011_AV22	2/21/2012 2:57:59 PM	82237-334	0.2680	Pass		
AV23						
June2011_AV23	6/2/2011 6:09:19 AM	63508A-334	0.2563	Pass		
AV24						
Dec2011_AV24	12/15/2011 9:33:47 AM	82240-334	0.2717	Pass		
AV43						
June2011A_AV43	6/20/2011 1:52:02 AM	82232-334	0.2786	Pass		
AV44						
June2011A_AV44	6/20/2011 8:43:44 AM	82233-334	0.2708	Pass		
AV45						
June2011_AV45	6/2/2011 6:09:33 AM	82234-334	0.2811	Pass		
AV46						
February2012_AV46	2/24/2012 9:01:09 AM	82244-334	0.2721	Pass		
Feb2012_AV46_ICV	2/24/2012 12:25:10 PM	82236-334	0.2768	Pass	101.742	Pass
AV47						
June2011A_AV47	6/20/2011 8:43:55 AM	82236-334	0.2691	Pass		
AV48						
June2011A_AV48	2/21/2012 2:58:50 PM	82237-334	0.2748	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV49						
June2011_AV49	6/2/2011 6:09:47 AM	82238-334	0.2849	Pass		
AV50						
February2012_AV50	2/24/2012 9:01:31 AM	82232-334	0.2822	Pass		
Feb2012_AV50_ICV	2/24/2012 12:25:26 PM	82240-334	0.2783	Pass	98.6252	Pass
AV51						
June2011_AV51	6/2/2011 6:09:53 AM	82240-334	0.2771	Pass		
AV52						
June2011_AV52	6/2/2011 6:09:56 AM	82241-334	0.2870	Pass		
AV53						
Dec2011_AV53	12/15/2011 9:35:01 AM	82235-334	0.2846	Pass		
AV54						
June2011_AV54	6/2/2011 6:10:00 AM	82243-334	0.2719	Pass		
AV55						
June2011A_AV55	6/20/2011 8:44:19 AM	82244-334	0.2685	Pass		
AV56						
Dec2011_AV56	12/15/2011 9:36:08 AM	82238-334	0.2691	Pass		
AV57						
Dec2011_AV57	12/13/2011 9:33:31 AM	82240-334	0.2792	Pass		
AV58						
February2012_AV58	2/24/2012 9:01:54 AM	82241-334	0.2829	Pass		
Feb2012_AV58_ICV	2/24/2012 12:25:49 PM	63507-334	0.2651	Pass	93.6999	Fail
Feb2012_AV58a_ICV	2/24/2012 3:16:31 PM	82232-334	0.2863	Pass	101.213	Pass
Feb2012_AV58b_ICV	2/24/2012 4:28:08 PM	82232-334	0.2853	Pass	100.844	Pass
AV59						
February2012_AV59	2/24/2012 9:02:17 AM	82242-334	0.2794	Pass		
Feb2012_AV59_ICV	2/24/2012 12:26:03 PM	63508A-334	0.2697	Pass	96.5361	Pass
AV60						
May2011_AV60	6/2/2011 11:03:44 AM	63507-334	0.2647	Pass		
AV61						
June2011_AV61	6/20/2011 2:14:49 PM	63508A-334	0.2663	Pass		
AV62						
May2011_AV62	6/2/2011 11:15:48 AM	63509A-334	0.2723	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV63						
Feb2012_AV63	2/23/2012 4:05:57 PM	82246-334	0.2686	Pass		
Feb2012_AV63_ICV	2/23/2012 5:15:45 PM	82234-334	0.2798	Pass	104.191	Pass
AV64						
May2011_AV64	6/2/2011 11:16:28 AM	82233-334	0.2832	Pass		
AV65						
Feb2012_AV65	2/23/2012 4:06:15 PM	82232-334	0.2841	Pass		
Feb2012_AV65_ICV	2/23/2012 5:15:50 PM	82236-334	0.2714	Pass	95.5197	Pass
AV66						
Dec2011_AV66	12/13/2011 9:35:41 AM	82233-334	0.2772	Pass		
AV67						
May2011_AV67	6/2/2011 11:17:07 AM	82236-334	0.2930	Pass		
AV68						
May2011_AV68	2/21/2012 2:59:22 PM	82237-334	0.2733	Pass		
AV69						
June2011_AV69	6/21/2011 2:25:40 PM	82238-334	0.2749	Pass		
AV70						
June2011_AV70	6/21/2011 2:26:58 PM	82239-334	0.2763	Pass		
AV71						
May2011_AV71	6/2/2011 11:17:45 AM	82240-334	0.2741	Pass		
AV72						
May2011_AV72	6/2/2011 11:17:59 AM	82241-334	0.2892	Pass		
AV73						
Dec2011_AV73	12/16/2011 2:11:57 PM	82241-334	0.2786	Pass		
AV74						
Dec2011_AV74b	12/13/2011 12:09:06 PM	82242-334	0.2738	Pass		
AV75						
May2011_AV75	6/2/2011 11:18:19 AM	82244-334	0.2642	Pass		
AV77						
May2011_AV77	6/2/2011 11:18:32 AM	82246-334	0.2664	Pass		
AV78						
May2011_AV78	6/2/2011 11:18:45 AM	82247-334	0.2787	Pass		
AV79						
June2011_AV79c	6/29/2011 3:57:04 PM	82232-334	0.2634	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov	(+/-5%)
AV80 May2011_AV80	6/10/2011 5:01:32 PM	63507-334	0.2579	Pass	
AV81 Dec2011_AV81	12/15/2011 12:13:48 PM	82233-334	0.2814	Pass	
AV82 May2011_AV82	6/28/2011 9:27:42 PM	63509A-334	0.2676	Pass	
AV83 May2011_AV83	6/28/2011 9:28:42 PM	82232-334	0.2783	Pass	
AV84 May2011_AV84	6/28/2011 9:29:52 PM	82233-334	0.2740	Pass	
AV85 May2011_AV85	6/28/2011 9:30:57 PM	82234-334	0.2852	Pass	
AV86 May2011_AV86	6/28/2011 9:31:44 PM	82235-334	0.2811	Pass	
AV87 June2011_AV87	6/21/2011 2:25:24 PM	82236-334	0.2944	Pass	
AV88 May2011_AV88	2/21/2012 2:59:57 PM	82237-334	0.2736	Pass	
AV89 May2011_AV89	6/2/2011 11:21:41 AM	82238-334	0.2698	Pass	
AV90 May2011_AV90	6/28/2011 9:34:16 PM	82239-334	0.2753	Pass	
AV92 May2011_AV92	6/28/2011 9:35:11 PM	82241-334	0.2775	Pass	
AV93 May2011_AV93	6/10/2011 5:05:03 PM	82242-334	0.2772	Pass	
AV94 June2011_AV94a	6/29/2011 3:57:09 PM	82247-334	0.2751	Pass	
AV95 June2011_AV95b	6/30/2011 8:32:04 PM	82244-334	0.2663	Pass	
AV96 June2011_AV96	6/21/2011 2:25:55 PM	82245-334	0.2743	Pass	
AV97 May2011_AV97	6/28/2011 9:40:29 PM	82246-334	0.2715	Pass	

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency (20-32%)	Recov (+/-5%)
AV98 May2011_AV98	6/28/2011 9:41:09 PM	82247-334	0.2807	Pass
AV99 Dec2011_AV99a	12/15/2011 1:34:42 PM	82236-334	0.2681	Pass
AV100 June2011_AV100	6/10/2011 2:41:33 PM	63507-334	0.2630	Pass
AV101 June2011_AV101	6/10/2011 2:42:11 PM	63508A-334	0.2594	Pass
AV102 June2011_AV102	6/10/2011 2:42:28 PM	63509A-334	0.2668	Pass
AV103 June2011_AV103a	2/21/2012 3:00:31 PM	82237-334	0.2722	Pass
AV104 June2011_AV104	6/10/2011 2:45:37 PM	82233-334	0.2711	Pass
AV105 June2011_AV105	6/10/2011 2:48:33 PM	82234-334	0.2601	Pass
AV106 June2011_AV106	6/10/2011 2:49:36 PM	82235-334	0.2828	Pass
AV107 June2011_AV107	6/10/2011 2:49:58 PM	82236-334	0.2809	Pass
AV108 Dec2011_AV108a	12/15/2011 4:14:23 PM	82246-334	0.2763	Pass
AV109 June2011_AV109	6/10/2011 2:50:52 PM	82238-334	0.2642	Pass
AV110 June2011_AV110	6/10/2011 2:51:15 PM	82239-334	0.2761	Pass
AV111 June2011_AV111	6/10/2011 2:51:42 PM	82240-334	0.2742	Pass
AV112 June2011_AV112	6/10/2011 2:52:10 PM	82241-334	0.2669	Pass
AV113 June2011_AV113a	6/29/2011 8:19:17 PM	82247-334	0.2797	Pass
AV114 June2011_AV114	6/10/2011 2:53:57 PM	82243-334	0.2672	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV115 June2011_AV115	6/10/2011 2:57:31 PM	82244-334	0.2713	Pass		
AV116 May2011_AV116	6/2/2011 11:22:31 AM	82245-334	0.2802	Pass		
AV117 June2011_AV117	6/10/2011 2:54:57 PM	82246-334	0.2598	Pass		
AV118 June2011_AV118	6/10/2011 2:55:22 PM	82247-334	0.2708	Pass		
AV119 June2011_AV119a	6/29/2011 3:57:22 PM	82234-334	0.2780	Pass		
AV120 June2011_AV120	6/10/2011 2:56:12 PM	63507-334	0.2673	Pass		
AV121 June2011_AV121	6/10/2011 2:58:09 PM	63508A-334	0.2680	Pass		
AV122 June2011_AV122	6/10/2011 2:58:33 PM	63509A-334	0.2633	Pass		
AV123 June2011_AV123a	6/21/2011 2:27:18 PM	82232-334	0.2737	Pass		
AV124 June2011_AV124a	6/21/2011 2:28:12 PM	82233-334	0.2650	Pass		
AV125 June2011_AV125a	6/21/2011 2:26:25 PM	82234-334	0.2746	Pass		
AV126 June2011_AV126	6/3/2011 3:29:01 PM	82235-334	0.2754	Pass		
AV127 June2011A_AV127	6/28/2011 9:47:50 PM	82236-334	0.2756	Pass		
AV128 June2011_AV128	2/21/2012 3:01:06 PM	82237-334	0.2692	Pass		
AV130 June2011_AV130	6/3/2011 3:29:19 PM	82239-334	0.2686	Pass		
AV131 February2012_AV131	2/24/2012 9:02:44 AM	82238-334	0.2733	Pass		
Feb2012_AV131_ICV	2/24/2012 12:26:24 PM	82245-334	0.2767	Pass	101.234	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV132						
June2011_AV132a	6/30/2011 11:37:39 AM	82247-334	0.2712	Pass		
AV133						
Feb2012_AV133	2/24/2012 1:40:22 PM	82241-334	0.2654	Pass		
Feb2012_AV133_ICV	2/24/2012 3:16:36 PM	82247-334	0.2639	Pass	99.4605	Pass
AV134						
June2011_AV134	6/3/2011 3:29:39 PM	82243-334	0.2826	Pass		
AV135						
June2011_AV135	6/3/2011 3:29:47 PM	82244-334	0.2626	Pass		
AV136						
June2011_AV136	6/3/2011 3:29:51 PM	82245-334	0.2706	Pass		
AV137						
June2011_AV137	6/3/2011 3:29:43 PM	82246-334	0.2746	Pass		
AV138						
June2011_AV138	6/3/2011 3:29:55 PM	82247-334	0.2648	Pass		
AV139						
June2011_AV139a	6/29/2011 3:57:26 PM	82235-334	0.2713	Pass		
AV140						
June2011_AV140	6/3/2011 3:30:04 PM	63507-334	0.2557	Pass		
AV141						
June2011_AV141	6/3/2011 3:30:09 PM	63508A-334	0.2581	Pass		
AV142						
June2011_AV142	6/3/2011 3:30:14 PM	63509A-334	0.2631	Pass		
AV143						
Dec2011_AV143	12/15/2011 1:36:38 PM	82235-334	0.2708	Pass		
AV144						
June2011_AV144	6/10/2011 3:04:53 PM	82233-334	0.2723	Pass		
AV145						
June2011_AV145	6/10/2011 3:05:03 PM	82234-334	0.2749	Pass		
AV146						
June2011_AV146	6/10/2011 3:05:14 PM	82235-334	0.2748	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

June Alpha Spec Calibrations

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV147						
	6/14/2011 9:47:31 AM	82236-334	0.2858	Pass		
	6/14/2011 9:48:52 AM	82247-334	0.2876	Pass	100.65	Pass
AV148						
	6/21/2011 2:32:02 PM	82237-334	0.2655	Pass		
	6/21/2011 2:32:43 PM	82236-334	0.2752	Pass	103.63	Pass
AV149						
	6/21/2011 2:34:00 PM	82238-334	0.2822	Pass		
	6/21/2011 2:34:33 PM	82237-334	0.2743	Pass	97.212	Pass
AV151						
	6/21/2011 2:36:24 PM	82240-334	0.2779	Pass		
	6/21/2011 2:36:47 PM	82239-334	0.2757	Pass	99.212	Pass
AV152						
	6/21/2011 2:37:11 PM	82241-334	0.2700	Pass		
	6/21/2011 2:37:32 PM	82240-334	0.2698	Pass	99.948	Pass
AV153						
	6/30/2011 9:05:44 AM	63508A-334	0.2610	Pass		
	6/30/2011 10:17:32 AM	63507-334	0.2585	Pass	99.026	Pass
AV154						
	6/21/2011 2:39:31 PM	82243-334	0.2680	Pass		
	6/21/2011 2:40:03 PM	82242-334	0.2722	Pass	101.56	Pass
AV155						
	6/27/2011 9:21:16 PM	82244-334	0.2651	Pass		
	6/27/2011 9:22:09 PM	82243-334	0.2628	Pass	99.134	Pass
AV156						
	6/27/2011 9:22:55 PM	82245-334	0.2721	Pass		
	6/27/2011 9:23:40 PM	82244-334	0.2640	Pass	97.019	Pass
AV157						
	6/27/2011 9:24:40 PM	82246-334	0.2630	Pass		
	6/27/2011 9:25:17 PM	82245-334	0.2703	Pass	102.74	Pass
AV158						
	6/30/2011 11:40:49 AM	82235-334	0.2758	Pass		
	6/30/2011 12:51:15 PM	82234-334	0.2756	Pass	99.948	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV159						
	6/30/2011 9:06:12 AM	82236-334	0.2701	Pass		
	6/30/2011 9:06:45 AM	82235-334	0.2750	Pass	101.83	Pass
AV160						
	6/30/2011 9:07:03 AM	82237-334	0.2630	Pass		
	6/30/2011 9:07:22 AM	82236-334	0.2656	Pass	100.98	Pass
AV161						
	6/27/2011 9:29:26 PM	63508A-334	0.2652	Pass		
	6/27/2011 9:29:59 PM	63507-334	0.2604	Pass	98.212	Pass
AV162						
	6/23/2011 11:26:56 AM	63509A-334	0.2637	Pass		
	6/23/2011 1:44:04 PM	63508A-334	0.2643	Pass	100.20	Pass
AV163						
	6/15/2011 1:14:12 AM	82232-334	0.2782	Pass		
	6/27/2011 9:30:57 PM	63509A-334	0.2748	Pass	98.774	Pass
AV164						
	6/30/2011 9:07:48 AM	82241-334	0.2661	Pass		
	6/30/2011 9:08:11 AM	82240-334	0.2702	Pass	101.52	Pass
AV165						
	6/15/2011 1:14:21 AM	82234-334	0.2869	Pass		
	6/27/2011 9:32:32 PM	82233-334	0.2796	Pass	97.467	Pass
AV166						
	6/15/2011 1:14:26 AM	82235-334	0.2773	Pass		
	6/27/2011 9:33:19 PM	82234-334	0.2771	Pass	99.922	Pass
AV167						
	6/15/2011 1:14:30 AM	82236-334	0.2723	Pass		
	6/27/2011 9:34:00 PM	82235-334	0.2755	Pass	101.17	Pass
AV168						
	6/15/2011 1:14:34 AM	82237-334	0.2627	Pass		
	6/27/2011 9:34:45 PM	82236-334	0.2702	Pass	102.85	Pass
AV169						
	6/15/2011 1:14:37 AM	82238-334	0.2711	Pass		
	6/27/2011 9:35:26 PM	82237-334	0.2674	Pass	98.648	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV170						
	6/15/2011 1:14:41 AM	82239-334	0.2783	Pass		
	6/27/2011 9:36:10 PM	82238-334	0.2688	Pass	96.606	Pass
AV171						
	6/15/2011 1:14:45 AM	82240-334	0.2709	Pass		
	6/27/2011 9:37:06 PM	82239-334	0.2813	Pass	103.84	Pass
AV172						
	6/15/2011 1:14:49 AM	82241-334	0.2699	Pass		
	6/27/2011 9:37:46 PM	82240-334	0.2705	Pass	100.22	Pass
AV173						
	6/15/2011 1:14:52 AM	82242-334	0.2830	Pass		
	6/27/2011 9:38:28 PM	82241-334	0.2716	Pass	95.991	Pass
AV174						
	6/15/2011 1:14:56 AM	82243-334	0.2679	Pass		
	6/27/2011 9:39:06 PM	82242-334	0.2743	Pass	102.42	Pass
AV175						
	6/15/2011 1:15:00 AM	82244-334	0.2675	Pass		
	6/27/2011 9:39:52 PM	82243-334	0.2720	Pass	101.67	Pass
AV176						
	6/15/2011 2:15:31 AM	82245-334	0.2726	Pass		
	6/27/2011 9:40:38 PM	82244-334	0.2661	Pass	97.631	Pass
AV177						
	6/15/2011 1:15:04 AM	82246-334	0.2651	Pass		
	6/15/2011 4:19:56 AM	82245-334	0.2751	Pass	103.75	Pass
AV178						
	6/15/2011 1:15:07 AM	82247-334	0.2746	Pass		
	6/27/2011 9:41:21 PM	82246-334	0.2711	Pass	98.745	Pass
AV179						
	6/30/2011 9:08:46 AM	82237-334	0.2742	Pass		
	6/30/2011 10:17:36 AM	82236-334	0.2866	Pass	104.51	Pass
AV180						
	6/15/2011 1:15:15 AM	63507-334	0.2625	Pass		
	6/27/2011 9:43:59 PM	63506-334	0.2532	Pass	96.455	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV181						
	6/15/2011 1:15:18 AM	63508A-334	0.2611	Pass		
	6/27/2011 9:44:46 PM	63507-334	0.2587	Pass	99.069	Pass
AV182						
	6/27/2011 9:45:31 PM	63509A-334	0.2629	Pass		
	6/27/2011 9:46:14 PM	63508A-334	0.2625	Pass	99.822	Pass
AV183						
	6/20/2011 10:52:50 PM	82232-334	0.2795	Pass		
	6/27/2011 9:46:57 PM	63509A-334	0.2671	Pass	95.537	Pass
AV184						
	6/20/2011 10:52:55 PM	82233-334	0.2772	Pass		
	6/27/2011 9:47:46 PM	82232-334	0.2799	Pass	100.95	Pass
AV185						
	6/20/2011 10:52:58 PM	82234-334	0.2823	Pass		
	6/27/2011 9:48:33 PM	82233-334	0.2741	Pass	97.113	Pass
AV186						
	6/20/2011 10:53:06 PM	82235-334	0.2741	Pass		
	6/27/2011 9:49:22 PM	82234-334	0.2744	Pass	100.12	Pass
AV187						
	6/20/2011 10:53:09 PM	82236-334	0.2672	Pass		
	6/27/2011 9:50:09 PM	82235-334	0.2741	Pass	102.59	Pass
AV188						
	6/20/2011 10:53:13 PM	82237-334	0.2820	Pass		
	6/27/2011 9:50:56 PM	82236-334	0.2799	Pass	99.240	Pass
AV189						
	6/20/2011 10:53:16 PM	82238-334	0.2769	Pass		
	6/27/2011 9:51:48 PM	82237-334	0.2684	Pass	96.927	Pass
AV190						
	6/21/2011 1:27:18 AM	82239-334	0.2710	Pass		
	6/27/2011 9:52:36 PM	82238-334	0.2739	Pass	101.05	Pass
AV191						
	6/20/2011 10:53:19 PM	82240-334	0.2794	Pass		
	6/21/2011 4:20:11 AM	82239-334	0.2769	Pass	99.115	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV192						
	6/20/2011 10:53:23 PM	82241-334	0.2797	Pass		
	6/27/2011 9:53:23 PM	82240-334	0.2797	Pass	100.02	Pass
AV193						
	6/20/2011 10:53:26 PM	82242-334	0.2736	Pass		
	6/27/2011 9:54:02 PM	82241-334	0.2750	Pass	100.50	Pass
AV194						
	6/20/2011 10:53:29 PM	82243-334	0.2734	Pass		
	6/27/2011 9:54:56 PM	82242-334	0.2776	Pass	101.56	Pass
AV195						
	6/20/2011 10:53:33 PM	82244-334	0.2644	Pass		
	6/27/2011 9:55:43 PM	82243-334	0.2668	Pass	100.90	Pass
AV196						
	6/20/2011 10:53:37 PM	82245-334	0.2839	Pass		
	6/27/2011 9:56:30 PM	82244-334	0.2753	Pass	96.985	Pass
AV197						
	6/24/2011 2:40:07 AM	82246-334	0.2672	Pass		
	6/27/2011 9:57:47 PM	82245-334	0.2763	Pass	103.37	Pass
AV198						
	6/24/2011 2:22:48 PM	82247-334	0.2725	Pass		
	6/24/2011 3:24:45 PM	82246-334	0.2672	Pass	98.027	Pass
AV199						
	6/30/2011 9:09:28 AM	82238-334	0.2684	Pass		
	6/30/2011 10:17:40 AM	82237-334	0.2638	Pass	98.291	Pass
AV200						
	6/20/2011 10:53:47 PM	63507-334	0.2618	Pass		
	6/27/2011 10:00:20 PM	63506-334	0.2543	Pass	97.155	Pass
AV201						
	6/20/2011 10:53:53 PM	63508A-334	0.2654	Pass		
	6/27/2011 10:01:08 PM	63507-334	0.2735	Pass	103.06	Pass
AV202						
	6/27/2011 10:01:51 PM	63509A-334	0.2648	Pass		
	6/27/2011 10:02:25 PM	63508A-334	0.2613	Pass	98.648	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV203						
	6/21/2011 3:19:59 PM	82232-334	0.2768	Pass		
	6/21/2011 3:21:44 PM	63509A-334	0.2646	Pass	95.582	Pass
AV204						
	6/27/2011 10:03:31 PM	82233-334	0.2705	Pass		
	6/27/2011 10:04:08 PM	82232-334	0.2736	Pass	101.16	Pass
AV205						
	6/21/2011 3:29:26 PM	82234-334	0.2783	Pass		
	6/27/2011 10:04:59 PM	82233-334	0.2722	Pass	97.818	Pass
AV206						
	6/27/2011 10:05:51 PM	82235-334	0.2796	Pass		
	6/27/2011 10:06:38 PM	82234-334	0.2837	Pass	101.48	Pass
AV207						
	6/27/2011 10:07:21 PM	82236-334	0.2735	Pass		
	6/27/2011 10:08:05 PM	82235-334	0.2759	Pass	100.87	Pass
AV208						
	6/27/2011 10:08:56 PM	82237-334	0.2765	Pass		
	6/27/2011 10:09:30 PM	82236-334	0.2800	Pass	101.26	Pass
AV209						
	6/27/2011 10:10:06 PM	82238-334	0.2812	Pass		
	6/27/2011 10:10:39 PM	82237-334	0.2680	Pass	95.309	Pass
AV210						
	6/21/2011 9:13:09 AM	82239-334	0.2718	Pass		
	6/27/2011 10:11:34 PM	82238-334	0.2722	Pass	100.16	Pass
AV211						
	6/27/2011 10:12:37 PM	82240-334	0.2684	Pass		
	6/21/2011 10:55:13 AM	82239-334	0.2688	Pass	100.13	Pass
AV212						
	6/27/2011 10:13:23 PM	82241-334	0.2851	Pass		
	6/27/2011 10:13:58 PM	82240-334	0.2891	Pass	101.41	Pass
AV213						
	6/23/2011 11:27:18 AM	82242-334	0.2707	Pass		
	6/23/2011 1:44:14 PM	82241-334	0.2712	Pass	100.17	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV214						
	6/27/2011 10:15:18 PM	82243-334	0.2701	Pass		
	6/27/2011 10:15:54 PM	82242-334	0.2728	Pass	100.98	Pass
AV215						
	6/27/2011 10:16:46 PM	82244-334	0.2907	Pass		
	6/27/2011 10:17:26 PM	82243-334	0.2768	Pass	95.222	Pass
AV216						
	6/27/2011 10:18:14 PM	82245-334	0.2815	Pass		
	6/27/2011 10:18:50 PM	82244-334	0.2736	Pass	97.176	Pass
AV217						
	7/1/2011 10:10:06 AM	82246-334	0.2656	Pass		
	7/1/2011 10:10:22 AM	82245-334	0.2746	Pass	103.39	Pass
AV218						
	6/24/2011 1:51:29 PM	82247-334	0.2743	Pass		
	6/24/2011 5:16:09 PM	82246-334	0.2696	Pass	98.287	Pass
AV219						
	6/30/2011 9:09:52 AM	82240-334	0.2749	Pass		
	6/30/2011 9:10:10 AM	82238-334	0.2711	Pass	98.608	Pass
AV220						
	6/27/2011 10:21:49 PM	63507-334	0.2632	Pass		
	6/27/2011 10:22:24 PM	63506-334	0.2579	Pass	97.981	Pass
AV221						
	6/27/2011 10:23:08 PM	63508A-334	0.2621	Pass		
	6/27/2011 10:23:43 PM	63507-334	0.2617	Pass	99.836	Pass
AV222						
	6/27/2011 10:24:23 PM	63509A-334	0.2675	Pass		
	6/27/2011 10:25:09 PM	63508A-334	0.2634	Pass	98.476	Pass
AV223						
	6/23/2011 11:28:00 AM	82232-334	0.2800	Pass		
	6/23/2011 1:44:18 PM	63509A-334	0.2682	Pass	95.794	Pass
AV224						
	6/23/2011 11:28:25 AM	82233-334	0.2755	Pass		
	6/23/2011 1:44:22 PM	82232-334	0.2798	Pass	101.55	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV225						
	6/24/2011 2:40:10 AM	82234-334	0.2791	Pass		
	6/27/2011 10:26:27 PM	82233-334	0.2753	Pass	98.623	Pass
AV226						
	6/24/2011 2:40:15 AM	82235-334	0.2729	Pass		
	6/27/2011 10:27:06 PM	82234-334	0.2800	Pass	102.61	Pass
AV227						
	6/25/2011 10:39:33 AM	82236-334	0.2783	Pass		
	6/25/2011 1:18:30 PM	82235-334	0.2773	Pass	99.651	Pass
AV228						
	6/28/2011 9:07:26 AM	82237-334	0.2755	Pass		
	6/28/2011 9:07:46 AM	82236-334	0.2863	Pass	103.94	Pass
AV229						
	6/25/2011 10:39:43 AM	82238-334	0.2781	Pass		
	6/25/2011 1:18:41 PM	82237-334	0.2735	Pass	98.336	Pass
AV230						
	6/25/2011 10:39:47 AM	82239-334	0.2844	Pass		
	6/25/2011 1:19:16 PM	82238-334	0.2812	Pass	98.851	Pass
AV231						
	6/25/2011 10:50:22 AM	82240-334	0.2784	Pass		
	6/25/2011 1:19:42 PM	82239-334	0.2758	Pass	99.090	Pass
AV232						
	6/25/2011 10:58:31 AM	82241-334	0.2758	Pass		
	6/25/2011 1:19:51 PM	82240-334	0.2812	Pass	101.96	Pass
AV233						
	6/25/2011 10:58:37 AM	82242-334	0.2668	Pass		
	6/25/2011 1:20:13 PM	82241-334	0.2705	Pass	101.37	Pass
AV234						
	6/28/2011 9:08:33 AM	82243-334	0.2710	Pass		
	6/28/2011 9:08:49 AM	82242-334	0.2714	Pass	100.13	Pass
AV235						
	6/25/2011 11:19:40 AM	82244-334	0.2686	Pass		
	6/25/2011 1:21:34 PM	82243-334	0.2694	Pass	100.30	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV236						
	6/25/2011 11:19:44 AM	82245-334	0.2759	Pass		
	6/25/2011 1:22:02 PM	82244-334	0.2647	Pass	95.960	Pass
AV237						
	6/25/2011 11:19:48 AM	82246-334	0.2679	Pass		
	6/25/2011 1:22:14 PM	82245-334	0.2783	Pass	103.89	Pass
AV238						
	6/25/2011 11:19:52 AM	82247-334	0.2740	Pass		
	6/25/2011 1:22:47 PM	82246-334	0.2642	Pass	96.404	Pass
AV239						
	6/29/2011 4:17:46 PM	82241-334	0.2816	Pass		
	6/29/2011 5:24:20 PM	82239-334	0.2770	Pass	98.355	Pass
AV240						
	6/28/2011 9:06:33 AM	63507-334	0.2675	Pass		
	6/25/2011 1:23:31 PM	63506-334	0.2636	Pass	98.508	Pass
AV241						
	6/25/2011 11:47:42 AM	63508A-334	0.2600	Pass		
	6/25/2011 1:23:51 PM	63507-334	0.2602	Pass	100.06	Pass
AV242						
	6/25/2011 11:47:57 AM	63509A-334	0.2680	Pass		
	6/25/2011 1:24:10 PM	63508A-334	0.2667	Pass	99.534	Pass
AV243						
	6/25/2011 9:28:07 AM	82232-334	0.2795	Pass		
	6/25/2011 1:24:52 PM	63509A-334	0.2676	Pass	95.760	Pass
AV244						
	6/25/2011 12:07:09 PM	82233-334	0.2858	Pass		
	6/25/2011 1:25:04 PM	82232-334	0.2904	Pass	101.61	Pass
AV245						
	6/25/2011 12:07:13 PM	82234-334	0.2856	Pass		
	6/25/2011 1:25:24 PM	82233-334	0.2793	Pass	97.792	Pass
AV246						
	6/25/2011 12:07:17 PM	82235-334	0.2981	Pass		
	6/25/2011 1:25:53 PM	82234-334	0.2968	Pass	99.576	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV247						
	6/28/2011 9:04:33 AM	82236-334	0.2721	Pass		
	6/28/2011 9:04:52 AM	82235-334	0.2774	Pass	101.94	Pass
AV248						
	6/28/2011 9:09:30 AM	82237-334	0.2651	Pass		
	6/28/2011 9:09:48 AM	82236-334	0.2698	Pass	101.77	Pass
AV249						
	6/28/2011 9:10:11 AM	82238-334	0.2852	Pass		
	6/28/2011 9:10:27 AM	82237-334	0.2781	Pass	97.510	Pass
AV250						
	6/28/2011 9:10:53 AM	82239-334	0.2800	Pass		
	6/28/2011 9:11:12 AM	82238-334	0.2820	Pass	100.71	Pass

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Alpha Vision
Yearly Calibrations
Updated 2/22/12

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV22						
Dec2011_AV22	2/21/2012 2:57:59 PM	82237-334	0.2680	Pass		
Dec2011a_AV22_ICV	12/8/2011 2:38:54 PM	82236-334	0.2670	Pass	99.6280	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Wednesday, February 22, 2012 **Page 1 of 1**

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV48						
June2011A_AV48	2/21/2012 2:58:50 PM	82237-334	0.2748	Pass		
June2011_AV48_ICV	6/28/2011 9:18:29 PM	82236-334	0.2720	Pass	98.9875	Pass
AV88						
May2011_AV88	2/21/2012 2:59:57 PM	82237-334	0.2736	Pass		
June2011_AV88_ICV	6/28/2011 9:33:31 PM	82236-334	0.2783	Pass	101.747	Pass
AV103						
June2011_AV103a	2/21/2012 3:00:31 PM	82237-334	0.2722	Pass		
June2011_AV103a_ICVb	6/29/2011 8:19:11 PM	82236-334	0.2718	Pass	99.8524	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV68						
May2011_AV68	2/21/2012 2:59:22 PM	82237-334	0.2733	Pass		
June2011_AV68_ICV	6/2/2011 5:28:05 PM	82236-334	0.2767	Pass	101.258	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV128						
June2011_AV128	2/21/2012 3:01:06 PM	82237-334	0.2692	Pass		
June2011_AV128_ICV	6/10/2011 3:00:38 PM	82236-334	0.2737	Pass	101.685	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV160						
June2011A_AV160	2/21/2012 3:02:57 PM	82237-334	0.2708	Pass		
June2011A_AV160_ICV	6/30/2011 9:07:22 AM	82236-334	0.2656	Pass	98.0720	Pass
AV168						
June2011_AV168	2/21/2012 3:03:27 PM	82237-334	0.2704	Pass		
June2011_AV168_ICV	6/27/2011 9:34:45 PM	82236-334	0.2702	Pass	99.9393	Pass
AV179						
June2011B_AV179	2/21/2012 3:03:50 PM	82237-334	0.2821	Pass		
June2011_AV179b_ICV	6/30/2011 10:17:36 AM	82236-334	0.2866	Pass	101.588	Pass
AV228						
June2011A_AV228	2/21/2012 3:04:50 PM	82237-334	0.2834	Pass		
June2011A_AV228_ICV	6/28/2011 9:07:46 AM	82236-334	0.2863	Pass	101.035	Pass
AV248						
June2011_AV248	2/21/2012 3:05:18 PM	82237-334	0.2726	Pass		
June2011_AV248_ICV	6/28/2011 9:09:48 AM	82236-334	0.2698	Pass	98.9835	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV205						
Dec2011_AV205	2/21/2012 3:04:20 PM	82237-334	0.2688	Pass		
Dec2011_AV205_ICV	12/16/2011 3:08:08 AM	82236-334	0.2684	Pass	99.8398	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:55:54AM 7/25/2011

Calibration

Name: May2011_AV60
Description:
Detector: AV60

Calibration Date: 6/2/2011 11:03:44AM
Analyst: 60040

Source Info

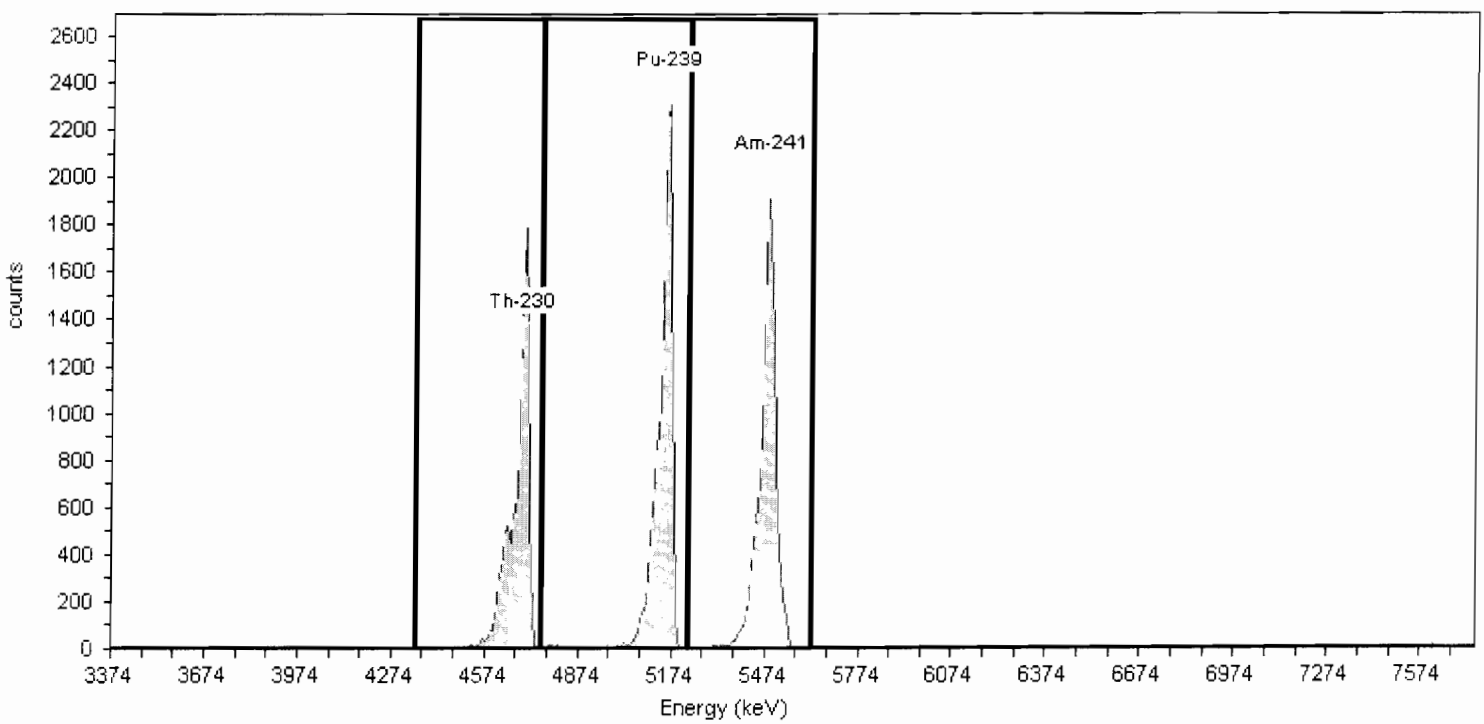
Certificate ID: 63507-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:00PM
Description:

Acquisition

Detector: AV60 , SN:
Acquisition Start Date: 6/2/2011 8:26:19AM
Live Time: 140.00 min.
Real Time: 140.13 min.
Efficiency: 26.47% +/- 0.28% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	11,967.00	85.48
Pu-239	240	5.16	186	249	14,610.00	104.36
Am-241	284	5.49	249	303	13,828.00	98.77

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:56:00AM 7/25/2011

Calibration

Name: June2011_AV60_ICV
Description:
Detector: AV60

Calibration Date: 6/2/2011 5:27:47PM
Analyst: 60040

Source Info

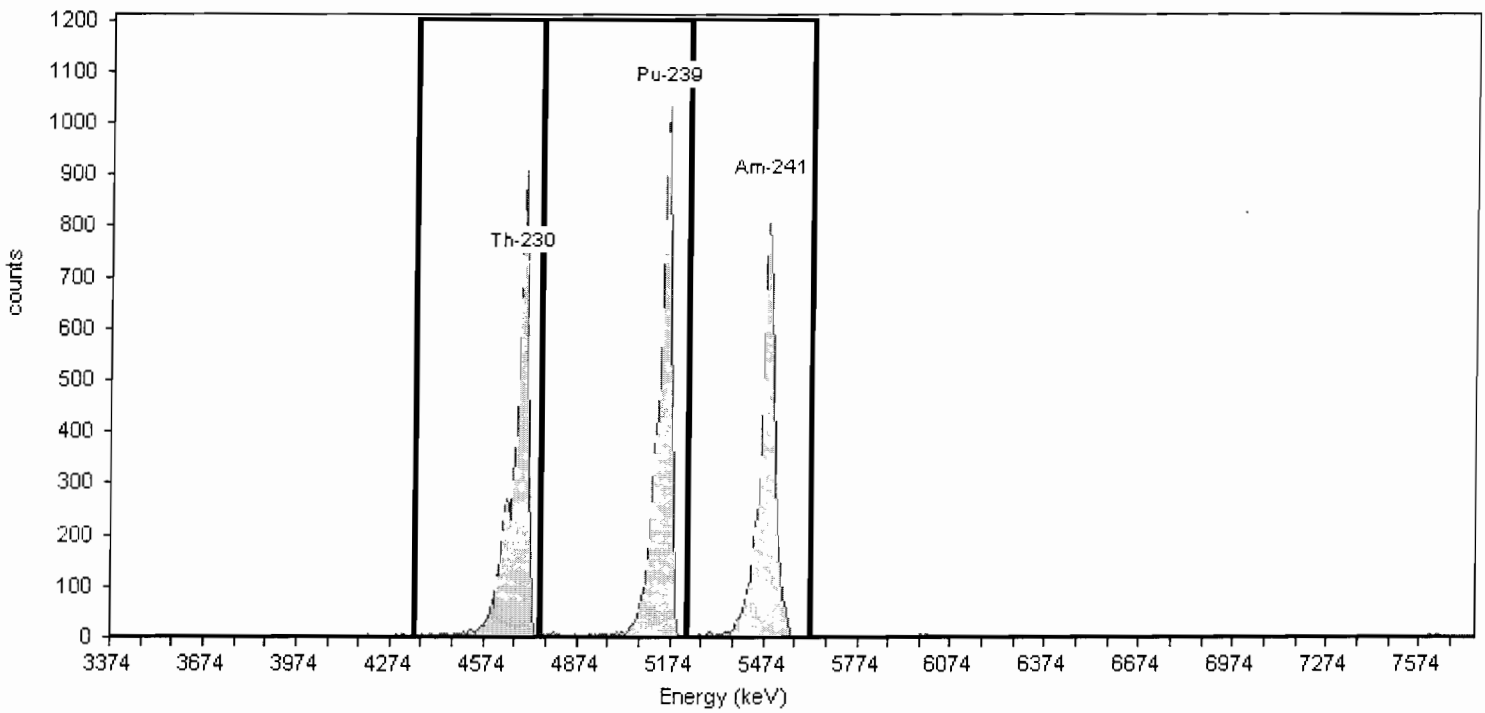
Certificate ID: 63506-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:07PM
Description:

Acquisition

Detector: AV60 , SN:
Acquisition Start Date: 6/2/2011 11:51:31AM
Live Time: 60.00 min.
Real Time: 60.03 min.
Efficiency: 25.70% +/- 0.38% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 0

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,378.00	106.30
Pu-239	240	5.16	186	249	6,733.00	112.22
Am-241	284	5.49	249	303	5,844.00	97.40

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:56:08AM 7/25/2011

Calibration

Name: June2011_AV61
Description:
Detector: AV61

Calibration Date: 6/20/2011 2:14:49PM
Analyst: 60040

Source Info

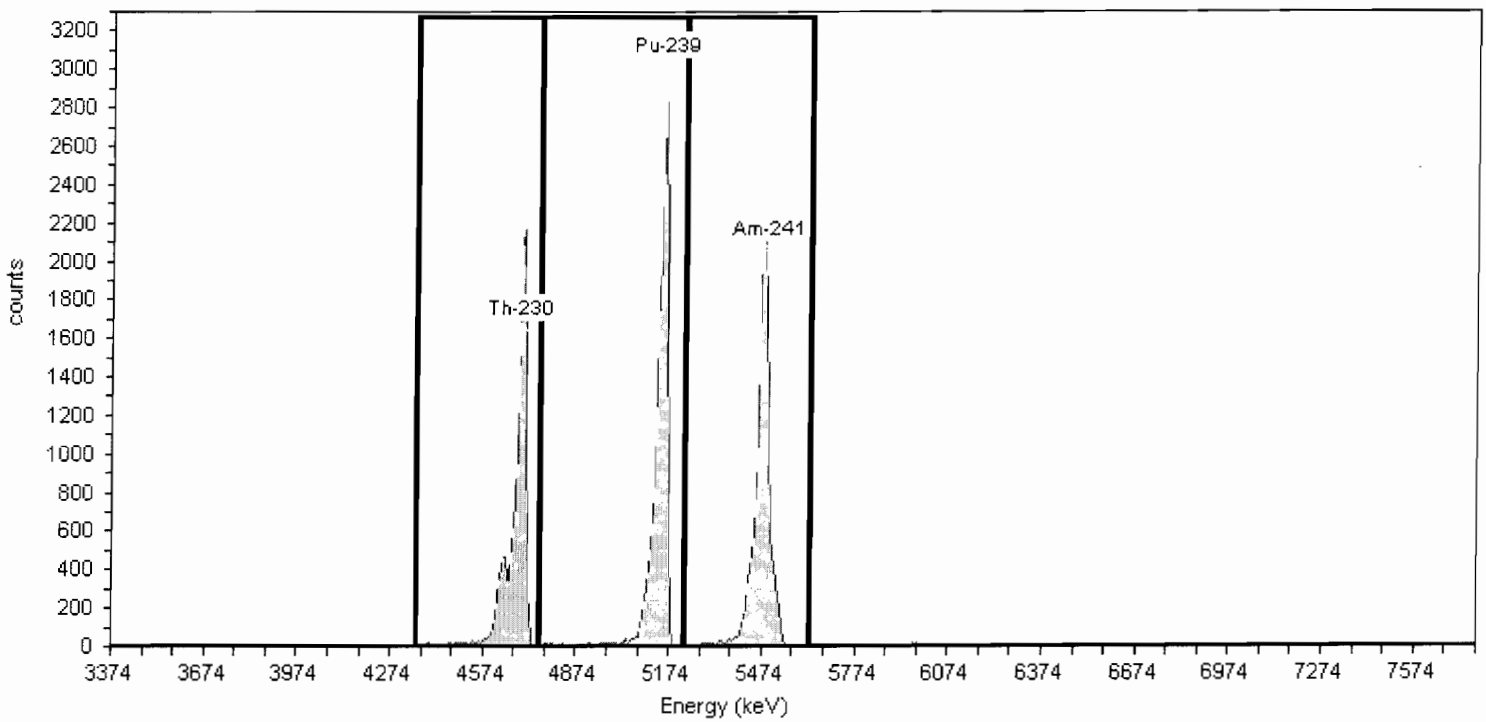
Certificate ID: 63508A-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:00PM
Description:

Acquisition

Detector: AV61 , SN: 5-051JJ3
Acquisition Start Date: 6/20/2011 11:43:54AM
Live Time: 140.00 min.
Real Time: 140.03 min.
Efficiency: 26.63% +/- 0.29% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	12,151.00	86.79
Pu-239	240	5.16	186	249	14,250.00	101.79
Am-241	284	5.49	249	303	12,896.00	92.11

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:56:13AM 7/25/2011

Calibration

Name: June2011_AV61_ICV
Description:
Detector: AV61

Calibration Date: 6/20/2011 3:32:40PM
Analyst: 60040

Source Info

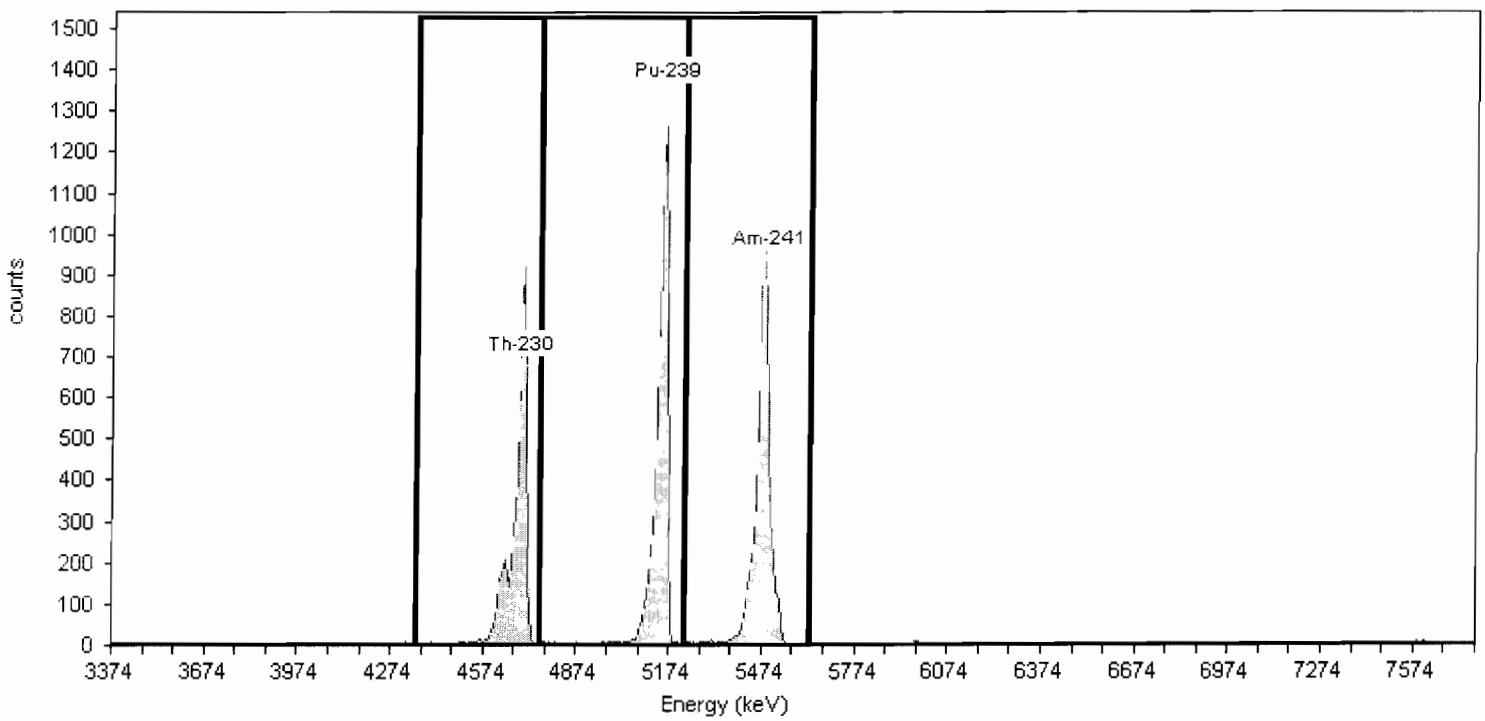
Certificate ID: 63507-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:00PM
Description:

Acquisition

Detector: AV61 , SN: 5-051JJ3
Acquisition Start Date: 6/20/2011 2:22:43PM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 26.35% +/- 0.41% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,097.00	84.95
Pu-239	240	5.16	186	249	6,199.00	103.32
Am-241	284	5.49	249	303	5,945.00	99.08

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:56:22AM 7/25/2011

Calibration

Name: May2011_AV62
Description:
Detector: AV62

Calibration Date: 6/2/2011 11:15:48AM
Analyst: 60040

Source Info

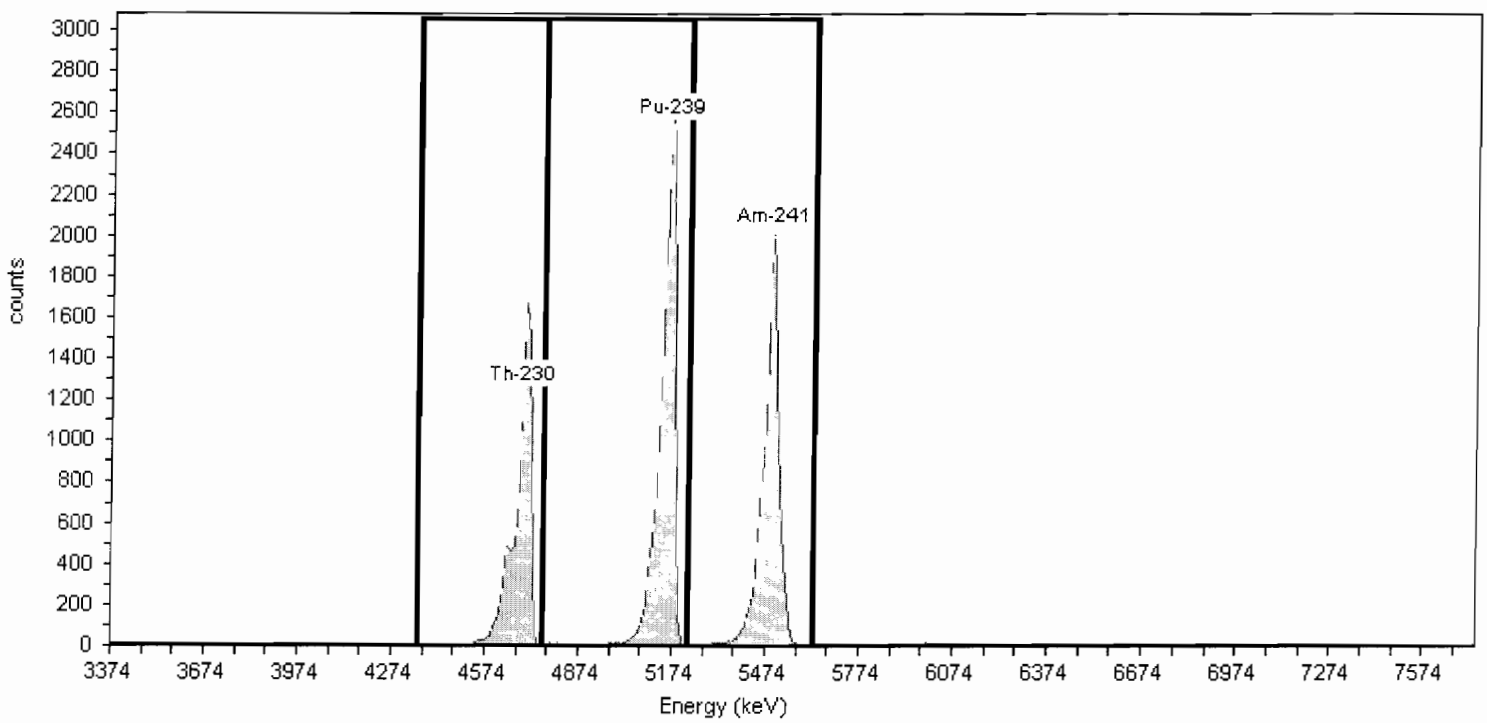
Certificate ID: 63509A-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:00PM
Description:

Acquisition

Detector: AV62 , SN: 49-115DD4
Acquisition Start Date: 6/2/2011 8:27:27AM
Live Time: 140.00 min.
Real Time: 140.14 min.
Efficiency: 27.23% +/- 0.28% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	11,579.00	82.71
Pu-239	240	5.16	186	249	18,079.00	129.14
Am-241	284	5.49	249	303	15,040.00	107.43

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:56:27AM 7/25/2011

Calibration

Name: June2011_AV62_ICV
Description:
Detector: AV62

Calibration Date: 6/2/2011 6:59:03PM
Analyst: 60040

Source Info

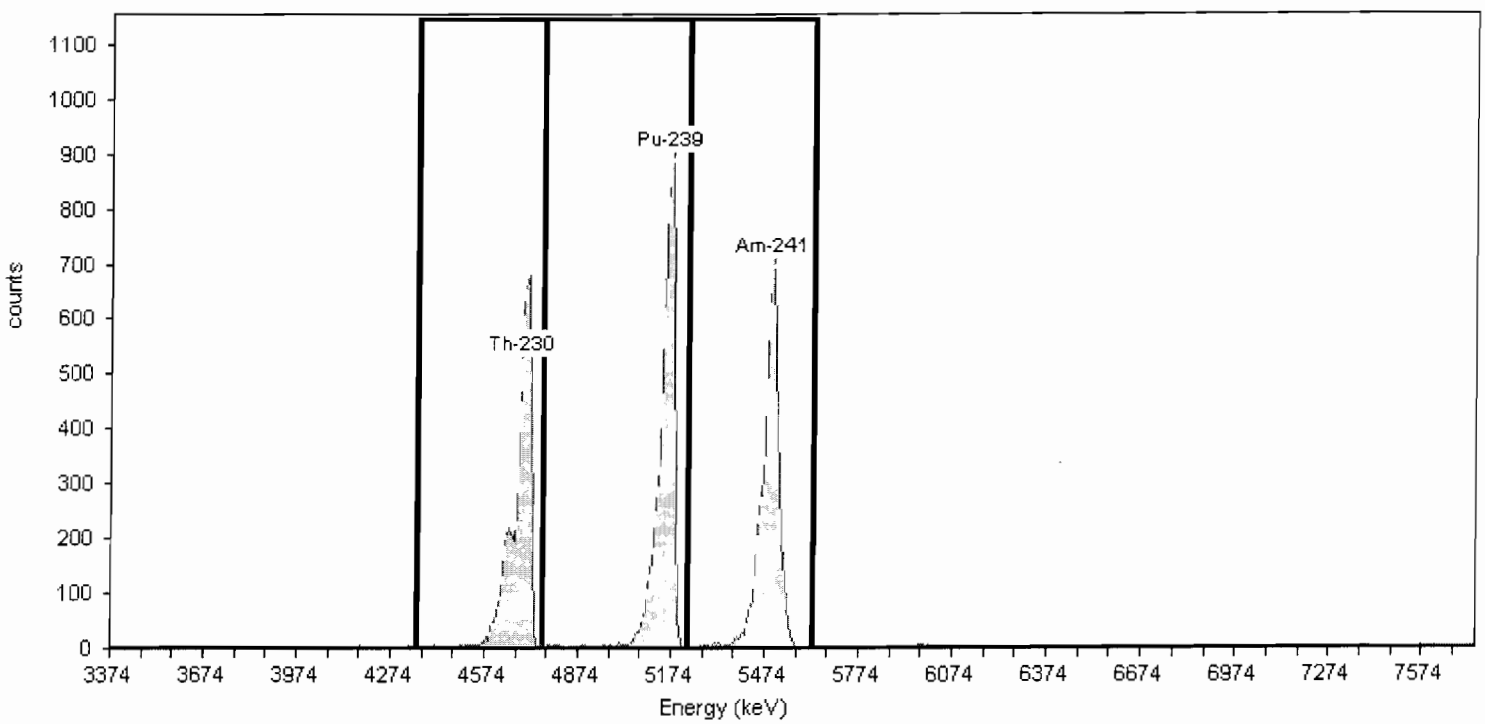
Certificate ID: 63508A-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:00PM
Description:

Acquisition

Detector: AV62 , SN: 49-115DD4
Acquisition Start Date: 6/2/2011 5:52:08PM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 26.97% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,146.00	85.77
Pu-239	240	5.16	186	249	6,310.00	105.17
Am-241	284	5.49	249	303	5,620.00	93.67

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:37:00AM 2/27/2012

Calibration

Name: Feb2012_AV63
Description:
Detector: AV63

Calibration Date: 2/23/2012 4:05:57PM
Analyst: 60040

Source Info

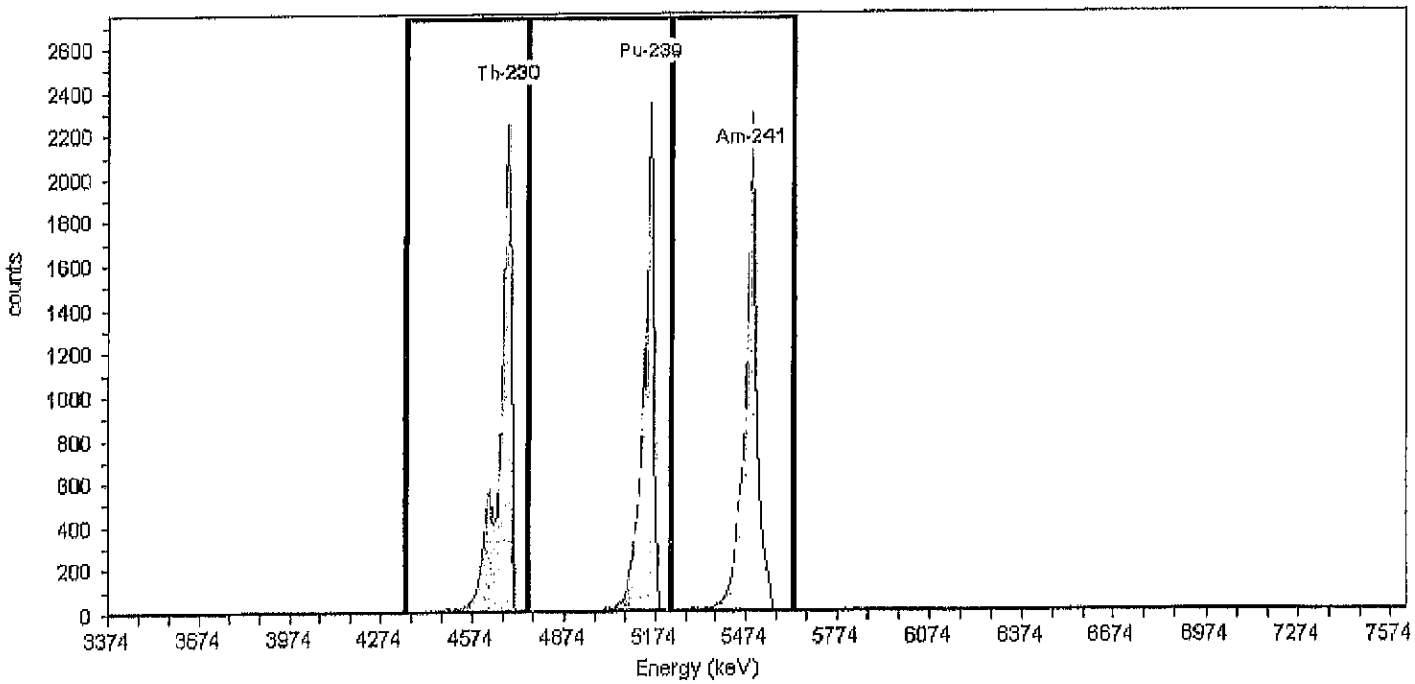
Certificate ID: 82246-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV63 , SN: 47-029ff2
Acquisition Start Date: 2/23/2012 1:45:20PM
Live Time: 140.00 min.
Real Time: 140.04 min.
Efficiency: 26.86% +/- 0.39% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	12,605.00	90.04
Pu-239	240	5.16	186	249	11,972.00	85.51
Am-241	284	5.49	249	303	13,581.00	97.01

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:37:05AM 2/27/2012

Calibration

Name: Feb2012_AV63_ICV
Description:
Detector: AV63

Calibration Date: 2/23/2012 5:15:45PM
Analyst: 60040

Source Info

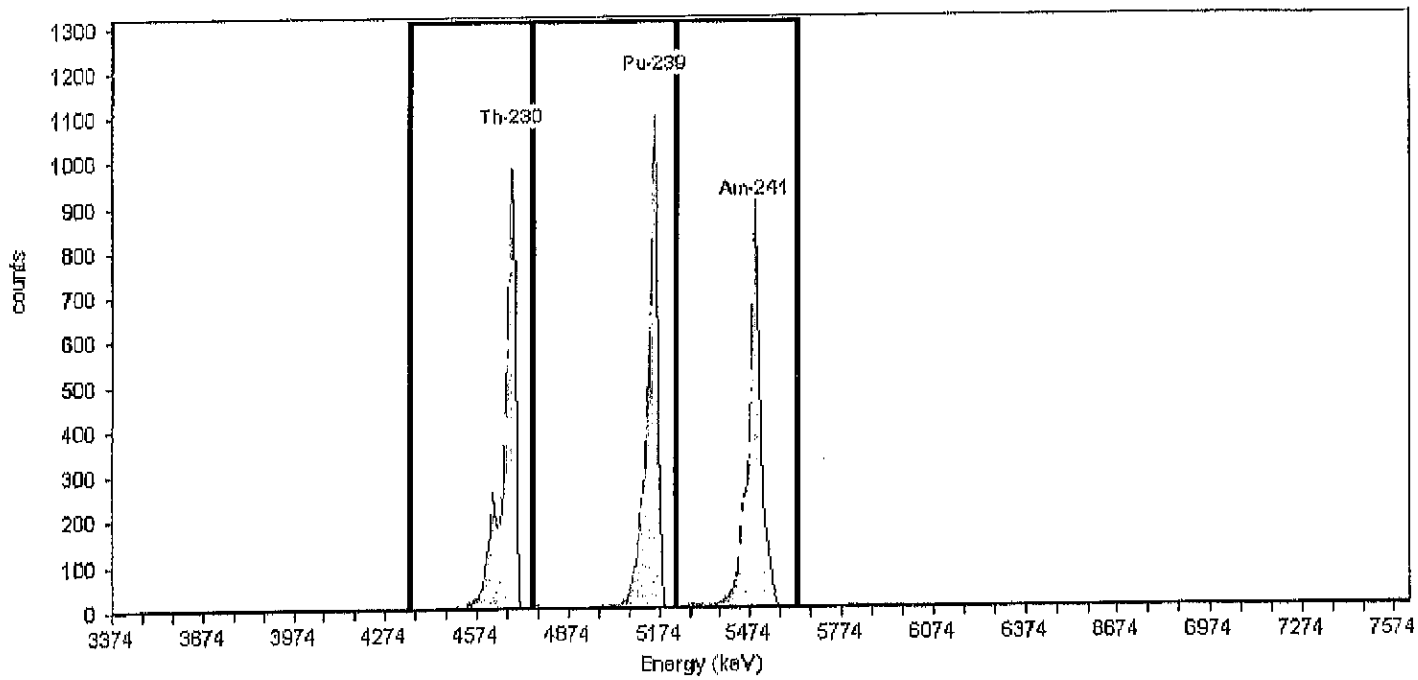
Certificate ID: 82234-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV63 , SN: 47-029ff2
Acquisition Start Date: 2/23/2012 4:10:47PM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 27.98% +/- 0.50% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,709.00	95.15
Pu-239	240	5.18	186	249	5,925.00	98.75
Am-241	284	5.49	249	303	5,761.00	96.02

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:56:50AM 7/25/2011

Calibration

Name: May2011_AV64
Description:
Detector: AV64

Calibration Date: 6/2/2011 11:16:26AM
Analyst: 60040

Source Info

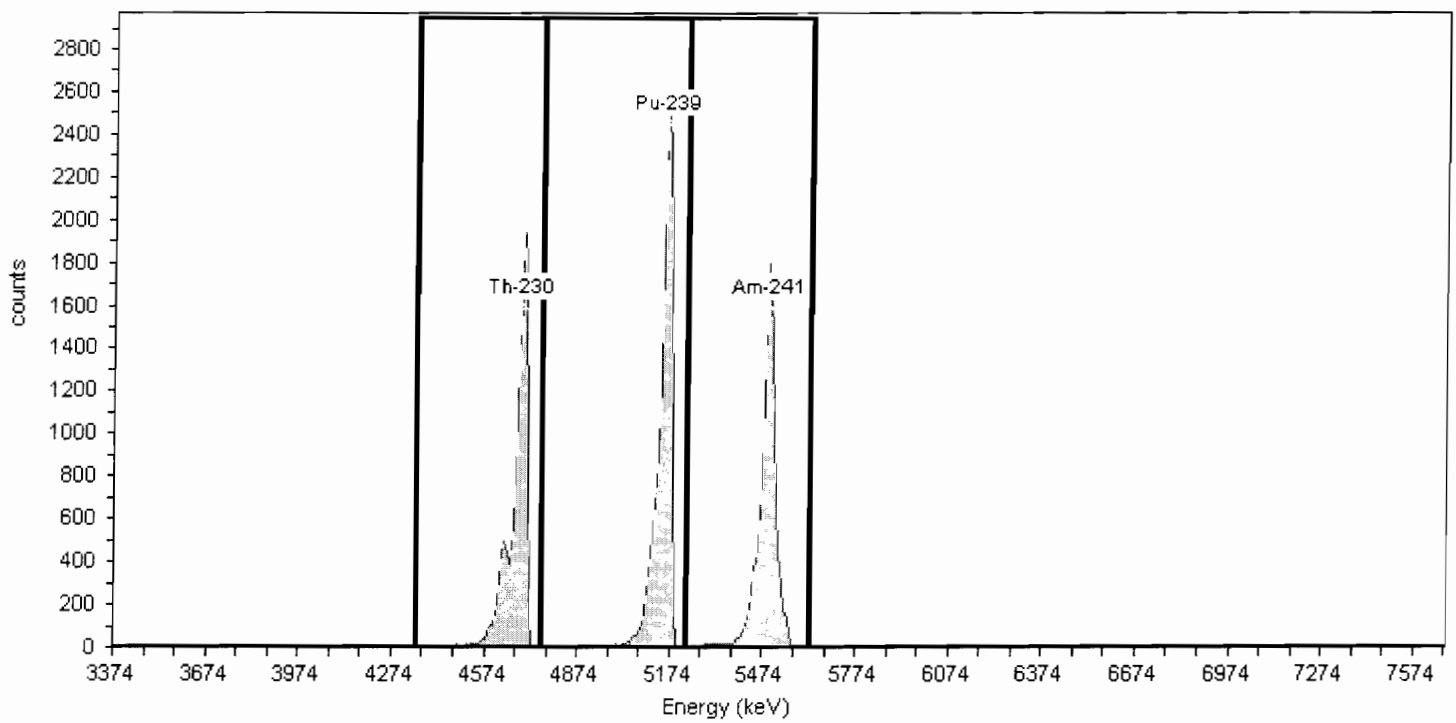
Certificate ID: 82233-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV64 , SN:
Acquisition Start Date: 6/2/2011 8:28:58AM
Live Time: 140.00 min.
Real Time: 140.12 min.
Efficiency: 28.32% +/- 0.40% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	11,702.00	83.59
Pu-239	240	5.16	186	249	14,443.00	103.16
Am-241	284	5.49	249	303	12,218.00	87.27

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:37:17AM 2/27/2012

Calibration

Name: Feb2012_AV65
Description:
Detector: AV65

Calibration Date: 2/23/2012 4:06:15PM
Analyst: 60040

Source Info

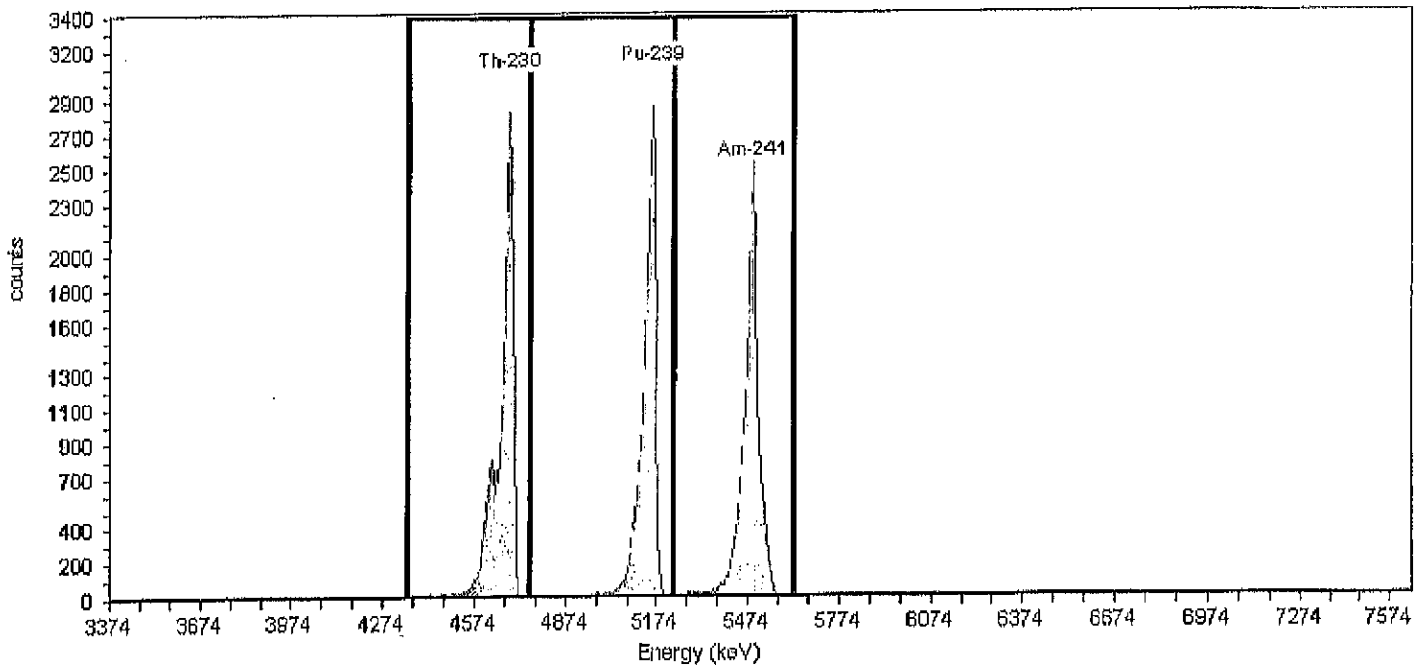
Certificate ID: 82232-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV65 , SN: 44-049JJ1
Acquisition Start Date: 2/23/2012 1:46:02PM
Live Time: 140.00 min.
Real Time: 140.04 min.
Efficiency: 28.41% +/- 0.31% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	18,039.00	128.85
Pu-239	240	5.16	186	249	17,111.00	122.22
Am-241	284	5.49	249	303	17,455.00	124.68

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
10:37:22AM 2/27/2012

Calibration

Name: Feb2012_AV65_ICV
Description:
Detector: AV65

Calibration Date: 2/23/2012 5:15:50PM
Analyst: 60040

Source Info

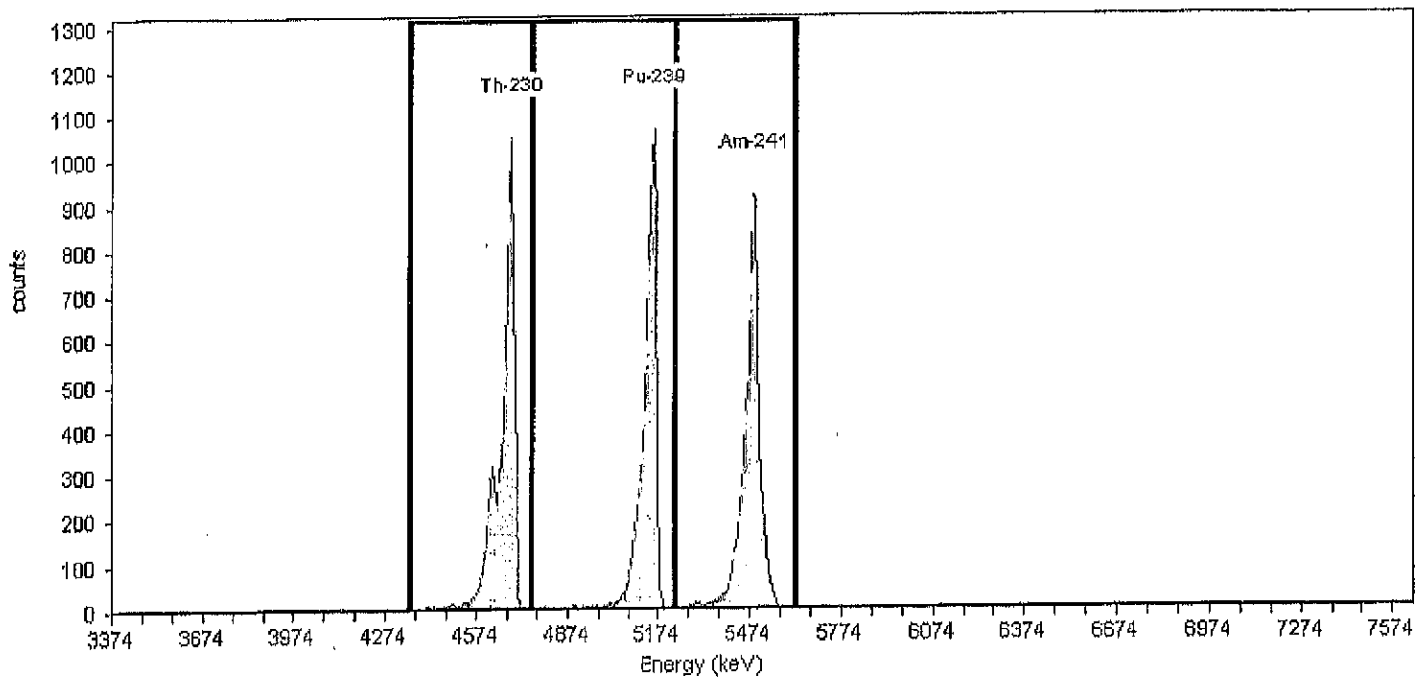
Certificate ID: 82236-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV65 , SN: 44-049JJ1
Acquisition Start Date: 2/23/2012 4:11:16PM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 27.14% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,838.00	113.97
Pu-239	240	5.16	186	249	6,613.00	110.22
Am-241	284	5.49	249	303	6,734.00	112.23

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:56:55AM 7/25/2011

Calibration

Name: June2011_AV64_ICV
Description:
Detector: AV64

Calibration Date: 6/2/2011 5:27:57PM
Analyst: 60040

Source Info

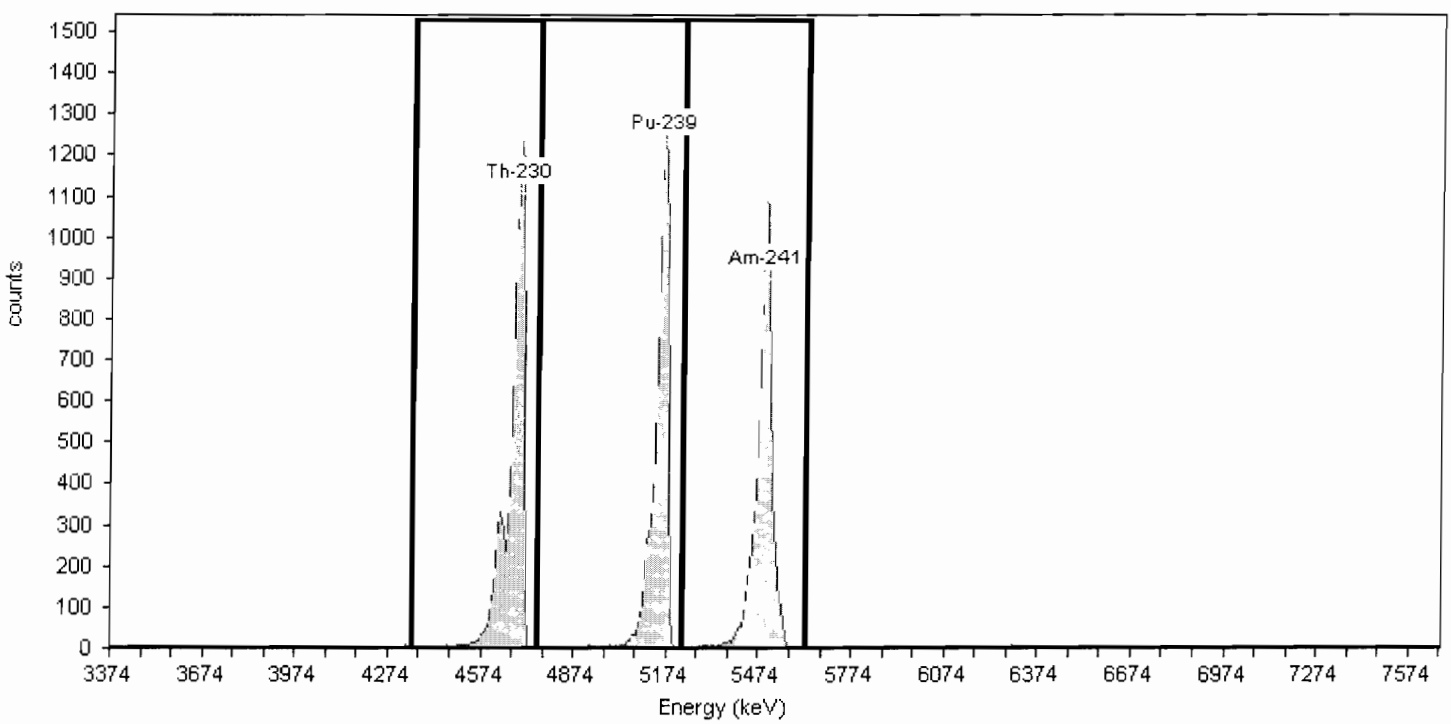
Certificate ID: 82232-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV64 , SN:
Acquisition Start Date: 6/2/2011 11:54:36AM
Live Time: 60.00 min.
Real Time: 60.03 min.
Efficiency: 28.67% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	7,866.00	131.10
Pu-239	240	5.16	186	249	7,408.00	123.47
Am-241	284	5.49	249	303	7,483.00	124.72

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
3:01:26PM 12/16/2011

Calibration

Name: Dec2011_AV66
Description:
Detector: AV66

Calibration Date: 12/13/2011 9:35:41AM
Analyst: 60040

Source Info

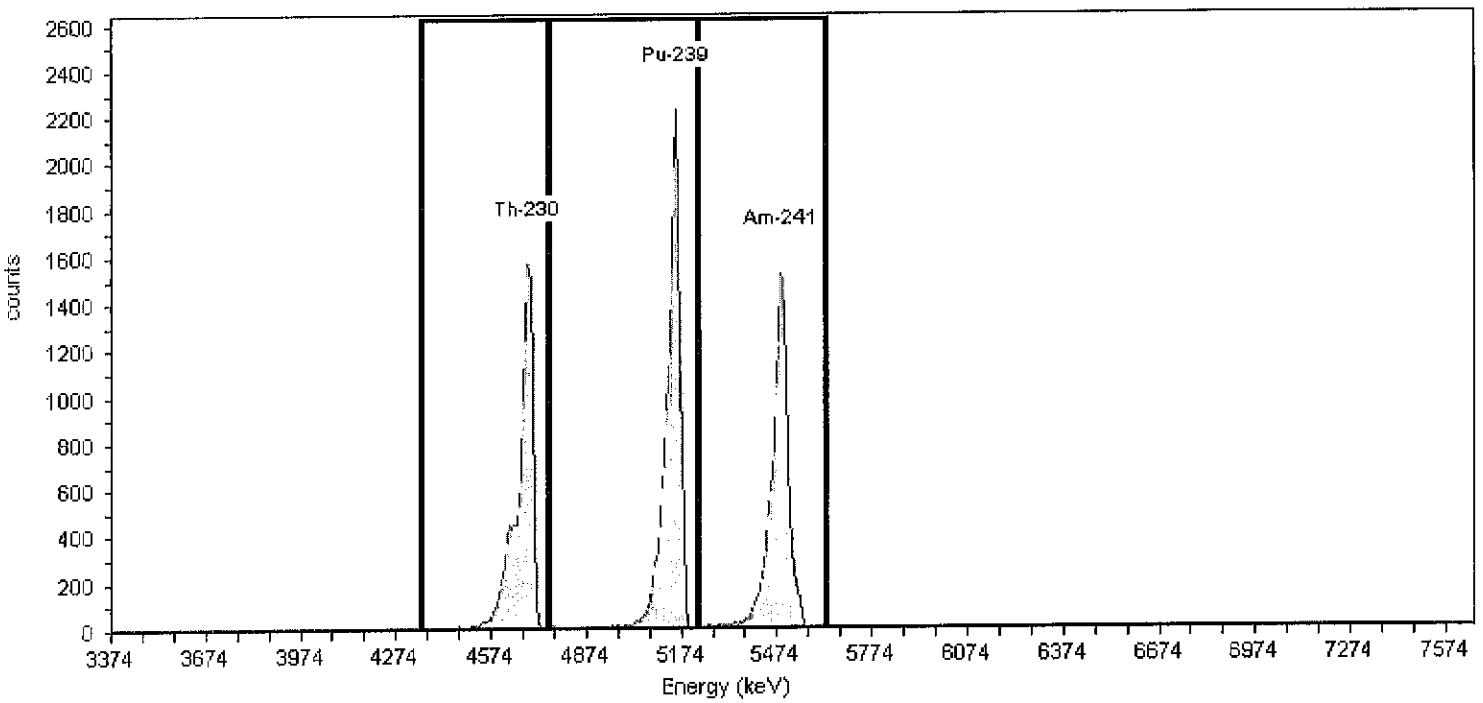
Certificate ID: 82233-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV66 , SN: 48-158EE2
Acquisition Start Date: 12/12/2011 8:12:04PM
Live Time: 140.00 min.
Real Time: 140.03 min.
Efficiency: 27.72% +/- 0.39% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	11,251.00	80.36
Pu-239	240	5.16	186	249	14,372.00	102.66
Am-241	284	5.49	249	303	11,901.00	85.01

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
3:01:32PM 12/16/2011

Calibration

Name: Dec2011_AV66_ICVa
Description:
Detector: AV66

Calibration Date: 12/13/2011 9:35:56AM
Analyst: 60040

Source Info

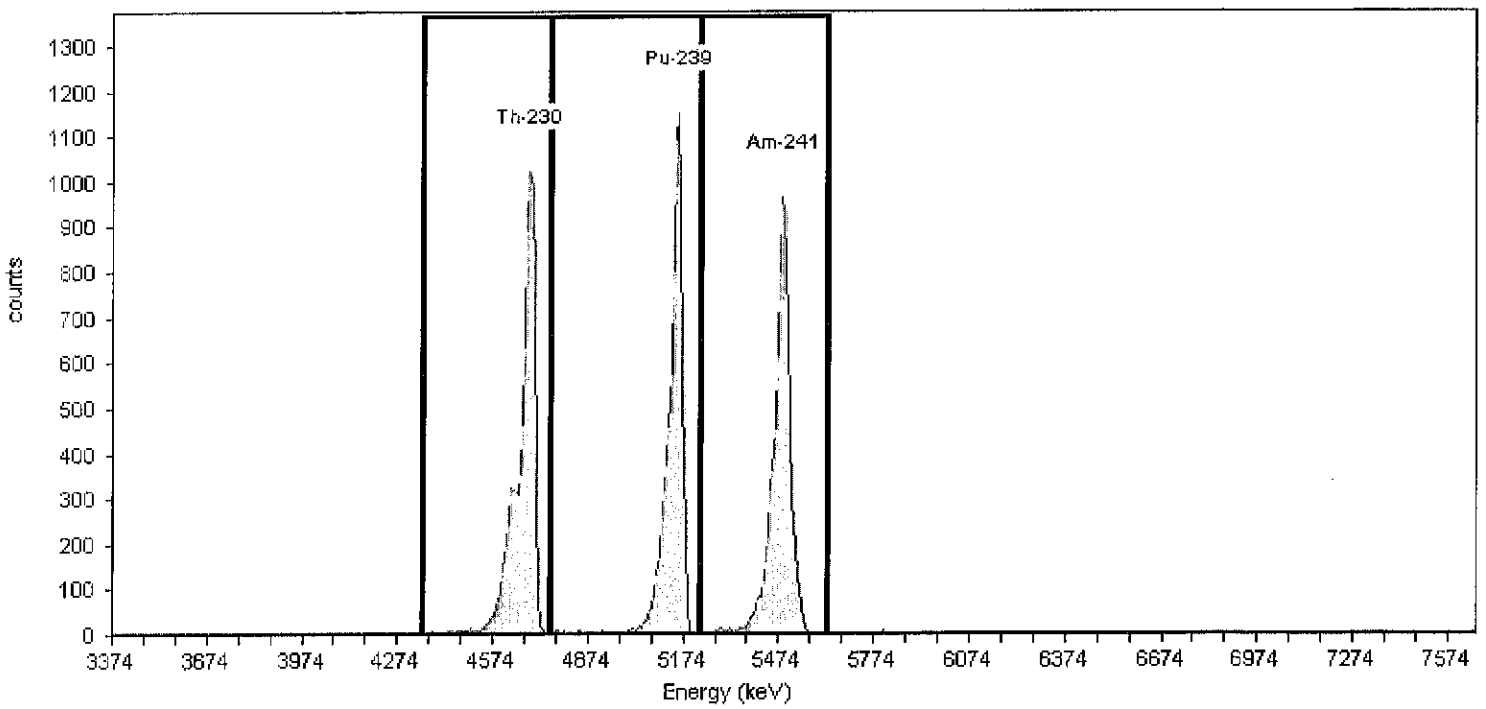
Certificate ID: 82232-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV66 , SN: 48-158EE2
Acquisition Start Date: 12/12/2011 10:41:46PM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 28.53% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	7,759.00	129.32
Pu-239	240	5.16	186	249	7,443.00	124.05
Am-241	284	5.49	249	303	7,440.00	124.00

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:57:31AM 7/25/2011

Calibration

Name: May2011_AV67
Description:
Detector: AV67

Calibration Date: 6/2/2011 11:17:07AM
Analyst: 60040

Source Info

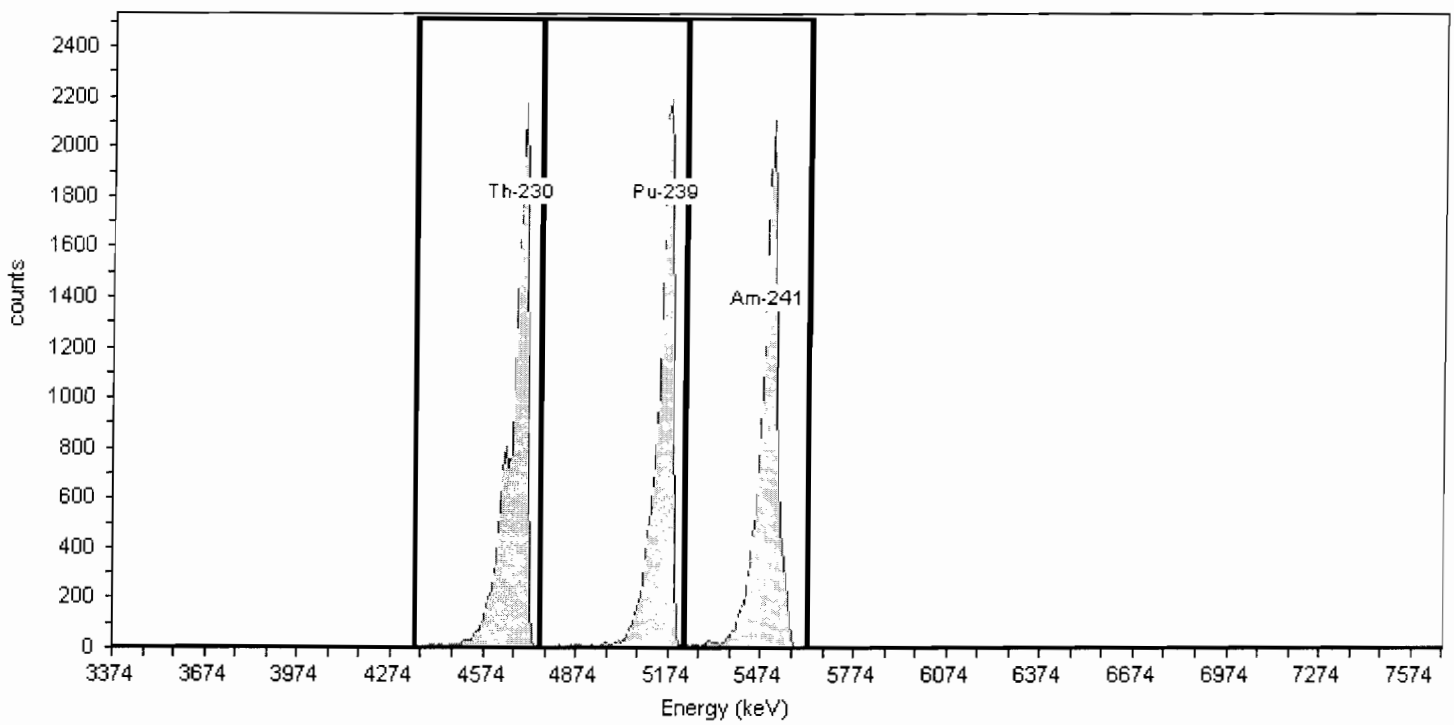
Certificate ID: 82236-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV67 , SN: 48-046II7
Acquisition Start Date: 6/2/2011 8:29:55AM
Live Time: 140.00 min.
Real Time: 140.09 min.
Efficiency: 29.30% +/- 0.34% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	17,499.00	124.99
Pu-239	240	5.16	186	249	16,429.00	117.35
Am-241	284	5.49	249	303	16,918.00	120.84

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:57:36AM 7/25/2011

Calibration

Name: June2011_AV67_ICV
Description:
Detector: AV67

Calibration Date: 6/2/2011 5:28:01PM
Analyst: 60040

Source Info

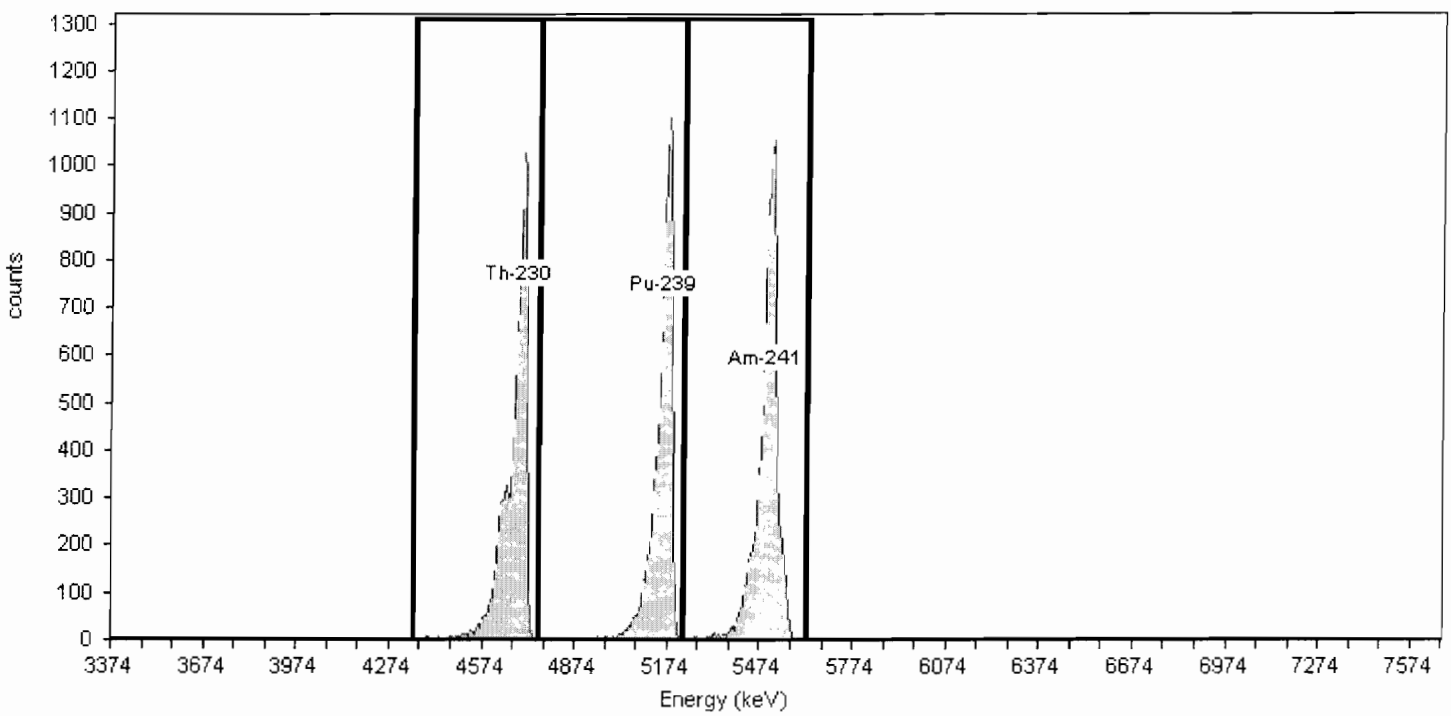
Certificate ID: 82235-334
Prepared by: Analytics

Certification Date: 6/4/2010 12:00:00PM
Description:

Acquisition

Detector: AV67 , SN: 48-046II7
Acquisition Start Date: 6/2/2011 12:17:53PM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 29.55% +/- 0.45% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	7,526.00	125.43
Pu-239	240	5.16	186	249	7,308.00	121.80
Am-241	284	5.49	249	303	8,068.00	134.47

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
2:59:33PM 2/21/2012

Calibration

Name: May2011_AV68
Description:
Detector: AV68

Calibration Date: 2/21/2012 2:59:22PM
Analyst: 60040

Source Info

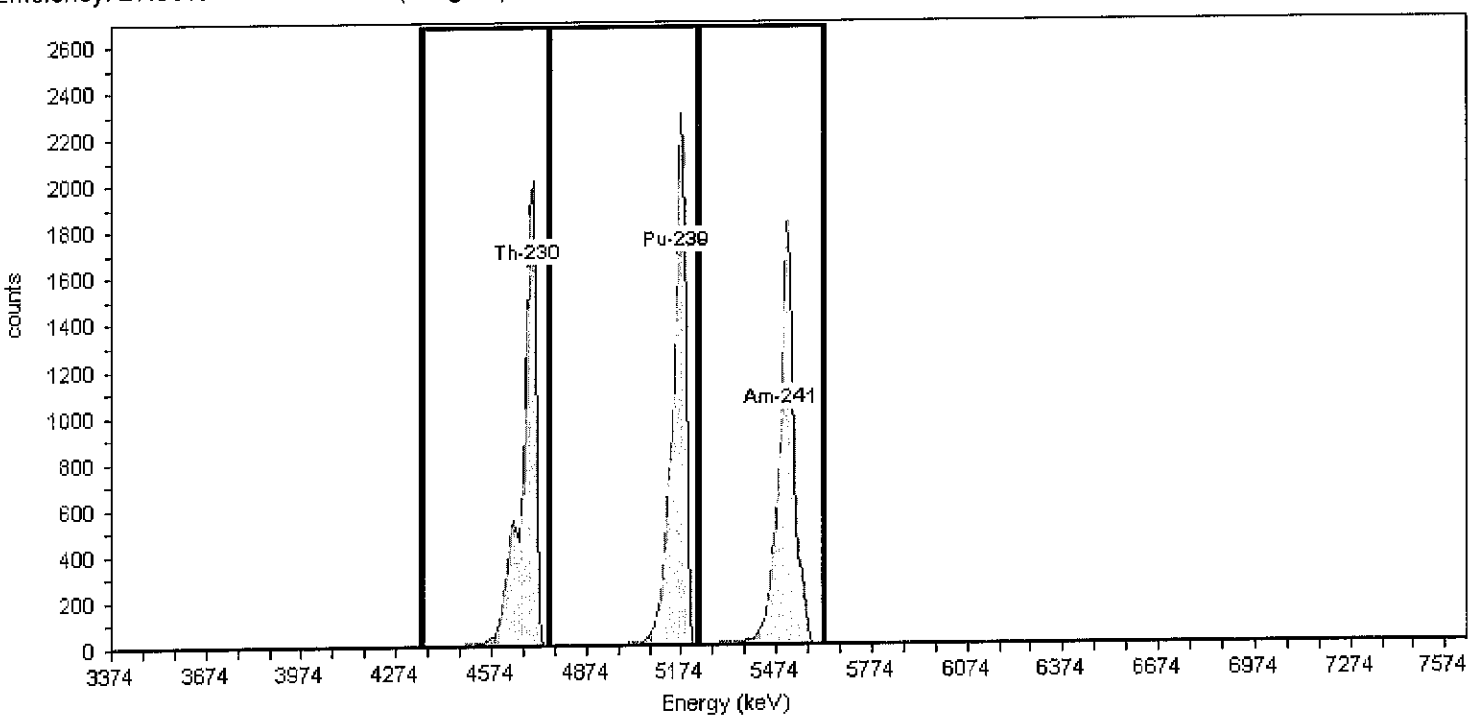
Certificate ID: 82237-334
Prepared by: Analytics

Certification Date: 6/1/2010 12:00:00PM
Description:

Acquisition

Detector: AV68 , SN: 48-45884
Acquisition Start Date: 6/2/2011 8:30:14AM
Live Time: 140.00 min.
Real Time: 140.09 min.
Efficiency: 27.33% +/- 0.37% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	13,526.00	96.61
Pu-239	240	5.16	186	249	14,535.00	103.82
Am-241	284	5.49	249	303	13,035.00	93.11

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:57:49AM 7/25/2011

Calibration

Name: June2011_AV68_ICV
Description:
Detector: AV68

Calibration Date: 6/2/2011 5:28:05PM
Analyst: 60040

Source Info

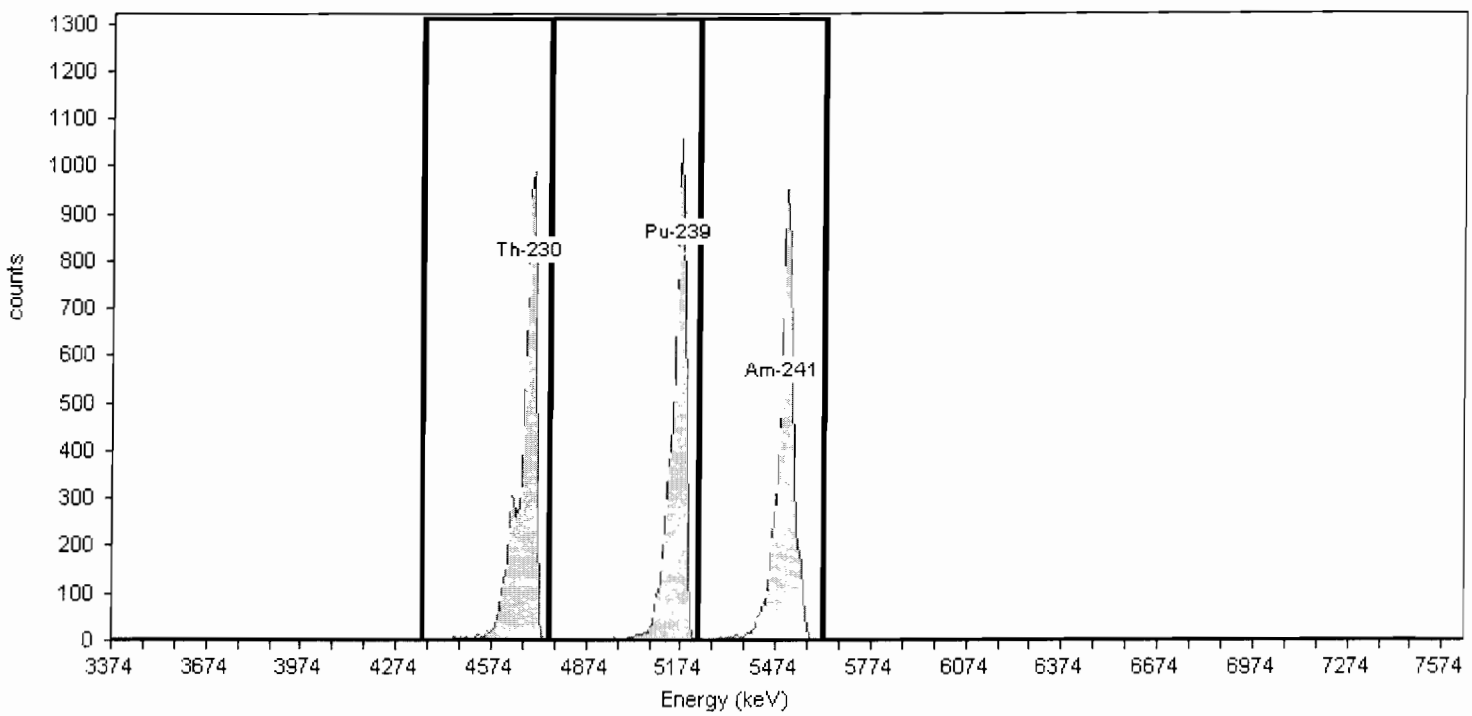
Certificate ID: 82236-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV68 , SN: 48-45884
Acquisition Start Date: 6/2/2011 12:18:37PM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 27.67% +/- 0.44% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	7,039.00	117.32
Pu-239	240	5.16	186	249	6,793.00	113.22
Am-241	284	5.49	249	303	6,759.00	112.65

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Yearly Calibrations
Alpha Vision
February 2012
AV1-146

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV1						
Dec2011_AV1	12/15/2011 9:30:49 AM	82232-334	0.2769	Pass		
AV2						
Dec2011_AV2	12/15/2011 9:31:52 AM	82233-334	0.2696	Pass		
AV3						
June2011_AV3	6/1/2011 2:07:22 PM	63508A-334	0.2671	Pass		
AV4						
June2011_AV4	6/1/2011 2:07:26 PM	63509A-334	0.2679	Pass		
AV6						
June2011_AV6	6/1/2011 2:08:00 PM	82233-334	0.2795	Pass		
AV7						
June2011_AV7	6/1/2011 2:08:04 PM	82234-334	0.2763	Pass		
AV8						
June2011_AV8	6/1/2011 2:08:08 PM	82235-334	0.2799	Pass		
AV9						
Feb2012_AV9a	2/22/2012 5:00:30 PM	82240-334	0.2776	Pass		
Feb2012_AV9a_ICV	2/22/2012 8:32:32 PM	82236-334	0.2761	Pass	99.4615	Pass
AV10						
Feb2012_AV10a	2/22/2012 8:32:27 PM	82241-334	0.2709	Pass		
Feb2012_AV10a_ICV	2/23/2012 11:15:43 AM	82237-334	0.2717	Pass	100.292	Pass
AV11						
Dec2011_AV11	12/15/2011 1:33:27 PM	82242-334	0.2748	Pass		
AV12						
Feb2012_AV12a	2/22/2012 5:00:57 PM	82243-334	0.2682	Pass		
Feb2012_AV12a_ICV	2/22/2012 8:32:35 PM	82238-334	0.2707	Pass	100.940	Pass
AV13						
June2011_AV13a	6/1/2011 2:12:53 PM	82240-334	0.2795	Pass		
AV14						
Dec2011_AV14	12/15/2011 9:32:53 AM	82245-334	0.2606	Pass		
AV15						
June2011_AV15	6/1/2011 2:13:10 PM	82242-334	0.2731	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV16						
Feb2012_AV16a	2/22/2012 5:01:24 PM	82247-334	0.2769	Pass		
Feb2012_AV16a_ICV	2/22/2012 6:32:38 PM	82243-334	0.2707	Pass	97.7705	Pass
AV17						
June2011A_AV17	6/10/2011 2:02:28 PM	82244-334	0.2619	Pass		
AV18						
Feb2012_AV18a	2/22/2012 5:01:33 PM	82233-334	0.2699	Pass		
Feb2012_AV18a_ICV	2/22/2012 6:32:42 PM	82247-334	0.2566	Pass	95.0864	Pass
AV19						
Dec2011_AV19	12/6/2011 9:35:31 AM	82234-334	0.2724	Pass		
AV20						
June2011_AV20	6/1/2011 2:13:04 PM	82247-334	0.2701	Pass		
AV21						
June2011_AV21b	6/29/2011 3:56:43 PM	63508A-334	0.2596	Pass		
AV22						
Dec2011_AV22	2/21/2012 2:57:59 PM	82237-334	0.2680	Pass		
AV23						
June2011_AV23	6/2/2011 6:09:19 AM	63508A-334	0.2563	Pass		
AV24						
Dec2011_AV24	12/15/2011 9:33:47 AM	82240-334	0.2717	Pass		
AV43						
June2011A_AV43	6/20/2011 1:52:02 AM	82232-334	0.2786	Pass		
AV44						
June2011A_AV44	6/20/2011 8:43:44 AM	82233-334	0.2708	Pass		
AV45						
June2011_AV45	6/2/2011 6:09:33 AM	82234-334	0.2811	Pass		
AV46						
February2012_AV46	2/24/2012 9:01:09 AM	82244-334	0.2721	Pass		
Feb2012_AV46_ICV	2/24/2012 12:25:10 PM	82236-334	0.2768	Pass	101.742	Pass
AV47						
June2011A_AV47	6/20/2011 8:43:55 AM	82236-334	0.2691	Pass		
AV48						
June2011A_AV48	2/21/2012 2:58:50 PM	82237-334	0.2748	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV49						
June2011_AV49	6/2/2011 6:09:47 AM	82238-334	0.2849	Pass		
AV50						
February2012_AV50	2/24/2012 9:01:31 AM	82232-334	0.2822	Pass		
Feb2012_AV50_ICV	2/24/2012 12:25:26 PM	82240-334	0.2783	Pass	98.6252	Pass
AV51						
June2011_AV51	6/2/2011 6:09:53 AM	82240-334	0.2771	Pass		
AV52						
June2011_AV52	6/2/2011 6:09:56 AM	82241-334	0.2870	Pass		
AV53						
Dec2011_AV53	12/15/2011 9:35:01 AM	82235-334	0.2846	Pass		
AV54						
June2011_AV54	6/2/2011 6:10:00 AM	82243-334	0.2719	Pass		
AV55						
June2011A_AV55	6/20/2011 8:44:19 AM	82244-334	0.2685	Pass		
AV56						
Dec2011_AV56	12/15/2011 9:36:08 AM	82238-334	0.2691	Pass		
AV57						
Dec2011_AV57	12/13/2011 9:33:31 AM	82240-334	0.2792	Pass		
AV58						
February2012_AV58	2/24/2012 9:01:54 AM	82241-334	0.2829	Pass		
Feb2012_AV58_ICV	2/24/2012 12:25:49 PM	63507-334	0.2651	Pass	93.6999	Fail
Feb2012_AV58a_ICV	2/24/2012 3:16:31 PM	82232-334	0.2863	Pass	101.213	Pass
Feb2012_AV58b_ICV	2/24/2012 4:28:08 PM	82232-334	0.2853	Pass	100.844	Pass
AV59						
February2012_AV59	2/24/2012 9:02:17 AM	82242-334	0.2794	Pass		
Feb2012_AV59_ICV	2/24/2012 12:26:03 PM	63508A-334	0.2697	Pass	96.5361	Pass
AV60						
May2011_AV60	6/2/2011 11:03:44 AM	63507-334	0.2647	Pass		
AV61						
June2011_AV61	6/20/2011 2:14:49 PM	63508A-334	0.2663	Pass		
AV62						
May2011_AV62	6/2/2011 11:15:48 AM	63509A-334	0.2723	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV63						
Feb2012_AV63	2/23/2012 4:05:57 PM	82246-334	0.2686	Pass		
Feb2012_AV63_ICV	2/23/2012 5:15:45 PM	82234-334	0.2798	Pass	104.191	Pass
AV64						
May2011_AV64	6/2/2011 11:16:28 AM	82233-334	0.2832	Pass		
AV65						
Feb2012_AV65	2/23/2012 4:06:15 PM	82232-334	0.2841	Pass		
Feb2012_AV65_ICV	2/23/2012 5:15:50 PM	82236-334	0.2714	Pass	95.5197	Pass
AV66						
Dec2011_AV66	12/13/2011 9:35:41 AM	82233-334	0.2772	Pass		
AV67						
May2011_AV67	6/2/2011 11:17:07 AM	82236-334	0.2930	Pass		
AV68						
May2011_AV68	2/21/2012 2:59:22 PM	82237-334	0.2733	Pass		
AV69						
June2011_AV69	6/21/2011 2:25:40 PM	82238-334	0.2749	Pass		
AV70						
June2011_AV70	6/21/2011 2:26:58 PM	82239-334	0.2763	Pass		
AV71						
May2011_AV71	6/2/2011 11:17:45 AM	82240-334	0.2741	Pass		
AV72						
May2011_AV72	6/2/2011 11:17:59 AM	82241-334	0.2892	Pass		
AV73						
Dec2011_AV73	12/16/2011 2:11:57 PM	82241-334	0.2786	Pass		
AV74						
Dec2011_AV74b	12/13/2011 12:09:06 PM	82242-334	0.2738	Pass		
AV75						
May2011_AV75	6/2/2011 11:18:19 AM	82244-334	0.2642	Pass		
AV77						
May2011_AV77	6/2/2011 11:18:32 AM	82246-334	0.2664	Pass		
AV78						
May2011_AV78	6/2/2011 11:18:45 AM	82247-334	0.2787	Pass		
AV79						
June2011_AV79c	6/29/2011 3:57:04 PM	82232-334	0.2634	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov	(+/-5%)
AV80 May2011_AV80	6/10/2011 5:01:32 PM	63507-334	0.2579	Pass	
AV81 Dec2011_AV81	12/15/2011 12:13:48 PM	82233-334	0.2814	Pass	
AV82 May2011_AV82	6/28/2011 9:27:42 PM	63509A-334	0.2676	Pass	
AV83 May2011_AV83	6/28/2011 9:28:42 PM	82232-334	0.2783	Pass	
AV84 May2011_AV84	6/28/2011 9:29:52 PM	82233-334	0.2740	Pass	
AV85 May2011_AV85	6/28/2011 9:30:57 PM	82234-334	0.2852	Pass	
AV86 May2011_AV86	6/28/2011 9:31:44 PM	82235-334	0.2811	Pass	
AV87 June2011_AV87	6/21/2011 2:25:24 PM	82236-334	0.2944	Pass	
AV88 May2011_AV88	2/21/2012 2:59:57 PM	82237-334	0.2736	Pass	
AV89 May2011_AV89	6/2/2011 11:21:41 AM	82238-334	0.2698	Pass	
AV90 May2011_AV90	6/28/2011 9:34:16 PM	82239-334	0.2753	Pass	
AV92 May2011_AV92	6/28/2011 9:35:11 PM	82241-334	0.2775	Pass	
AV93 May2011_AV93	6/10/2011 5:05:03 PM	82242-334	0.2772	Pass	
AV94 June2011_AV94a	6/29/2011 3:57:09 PM	82247-334	0.2751	Pass	
AV95 June2011_AV95b	6/30/2011 8:32:04 PM	82244-334	0.2663	Pass	
AV96 June2011_AV96	6/21/2011 2:25:55 PM	82245-334	0.2743	Pass	
AV97 May2011_AV97	6/28/2011 9:40:29 PM	82246-334	0.2715	Pass	

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency (20-32%)	Recov (+/-5%)
AV98 May2011_AV98	6/28/2011 9:41:09 PM	82247-334	0.2807	Pass
AV99 Dec2011_AV99a	12/15/2011 1:34:42 PM	82236-334	0.2681	Pass
AV100 June2011_AV100	6/10/2011 2:41:33 PM	63507-334	0.2630	Pass
AV101 June2011_AV101	6/10/2011 2:42:11 PM	63508A-334	0.2594	Pass
AV102 June2011_AV102	6/10/2011 2:42:28 PM	63509A-334	0.2668	Pass
AV103 June2011_AV103a	2/21/2012 3:00:31 PM	82237-334	0.2722	Pass
AV104 June2011_AV104	6/10/2011 2:45:37 PM	82233-334	0.2711	Pass
AV105 June2011_AV105	6/10/2011 2:48:33 PM	82234-334	0.2601	Pass
AV106 June2011_AV106	6/10/2011 2:49:36 PM	82235-334	0.2828	Pass
AV107 June2011_AV107	6/10/2011 2:49:58 PM	82236-334	0.2809	Pass
AV108 Dec2011_AV108a	12/15/2011 4:14:23 PM	82246-334	0.2763	Pass
AV109 June2011_AV109	6/10/2011 2:50:52 PM	82238-334	0.2642	Pass
AV110 June2011_AV110	6/10/2011 2:51:15 PM	82239-334	0.2761	Pass
AV111 June2011_AV111	6/10/2011 2:51:42 PM	82240-334	0.2742	Pass
AV112 June2011_AV112	6/10/2011 2:52:10 PM	82241-334	0.2669	Pass
AV113 June2011_AV113a	6/29/2011 8:19:17 PM	82247-334	0.2797	Pass
AV114 June2011_AV114	6/10/2011 2:53:57 PM	82243-334	0.2672	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV115 June2011_AV115	6/10/2011 2:57:31 PM	82244-334	0.2713	Pass		
AV116 May2011_AV116	6/2/2011 11:22:31 AM	82245-334	0.2802	Pass		
AV117 June2011_AV117	6/10/2011 2:54:57 PM	82246-334	0.2598	Pass		
AV118 June2011_AV118	6/10/2011 2:55:22 PM	82247-334	0.2708	Pass		
AV119 June2011_AV119a	6/29/2011 3:57:22 PM	82234-334	0.2780	Pass		
AV120 June2011_AV120	6/10/2011 2:56:12 PM	63507-334	0.2673	Pass		
AV121 June2011_AV121	6/10/2011 2:58:09 PM	63508A-334	0.2680	Pass		
AV122 June2011_AV122	6/10/2011 2:58:33 PM	63509A-334	0.2633	Pass		
AV123 June2011_AV123a	6/21/2011 2:27:18 PM	82232-334	0.2737	Pass		
AV124 June2011_AV124a	6/21/2011 2:28:12 PM	82233-334	0.2650	Pass		
AV125 June2011_AV125a	6/21/2011 2:26:25 PM	82234-334	0.2746	Pass		
AV126 June2011_AV126	6/3/2011 3:29:01 PM	82235-334	0.2754	Pass		
AV127 June2011A_AV127	6/28/2011 9:47:50 PM	82236-334	0.2756	Pass		
AV128 June2011_AV128	2/21/2012 3:01:06 PM	82237-334	0.2692	Pass		
AV130 June2011_AV130	6/3/2011 3:29:19 PM	82239-334	0.2686	Pass		
AV131 February2012_AV131	2/24/2012 9:02:44 AM	82238-334	0.2733	Pass		
Feb2012_AV131_ICV	2/24/2012 12:26:24 PM	82245-334	0.2767	Pass	101.234	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV132						
June2011_AV132a	6/30/2011 11:37:39 AM	82247-334	0.2712	Pass		
AV133						
Feb2012_AV133	2/24/2012 1:40:22 PM	82241-334	0.2654	Pass		
Feb2012_AV133_ICV	2/24/2012 3:16:36 PM	82247-334	0.2639	Pass	99.4605	Pass
AV134						
June2011_AV134	6/3/2011 3:29:39 PM	82243-334	0.2826	Pass		
AV135						
June2011_AV135	6/3/2011 3:29:47 PM	82244-334	0.2626	Pass		
AV136						
June2011_AV136	6/3/2011 3:29:51 PM	82245-334	0.2706	Pass		
AV137						
June2011_AV137	6/3/2011 3:29:43 PM	82246-334	0.2746	Pass		
AV138						
June2011_AV138	6/3/2011 3:29:55 PM	82247-334	0.2648	Pass		
AV139						
June2011_AV139a	6/29/2011 3:57:26 PM	82235-334	0.2713	Pass		
AV140						
June2011_AV140	6/3/2011 3:30:04 PM	63507-334	0.2557	Pass		
AV141						
June2011_AV141	6/3/2011 3:30:09 PM	63508A-334	0.2581	Pass		
AV142						
June2011_AV142	6/3/2011 3:30:14 PM	63509A-334	0.2631	Pass		
AV143						
Dec2011_AV143	12/15/2011 1:36:38 PM	82235-334	0.2708	Pass		
AV144						
June2011_AV144	6/10/2011 3:04:53 PM	82233-334	0.2723	Pass		
AV145						
June2011_AV145	6/10/2011 3:05:03 PM	82234-334	0.2749	Pass		
AV146						
June2011_AV146	6/10/2011 3:05:14 PM	82235-334	0.2748	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

June Alpha Spec Calibrations

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV147						
	6/14/2011 9:47:31 AM	82236-334	0.2858	Pass		
	6/14/2011 9:48:52 AM	82247-334	0.2876	Pass	100.65	Pass
AV148						
	6/21/2011 2:32:02 PM	82237-334	0.2655	Pass		
	6/21/2011 2:32:43 PM	82236-334	0.2752	Pass	103.63	Pass
AV149						
	6/21/2011 2:34:00 PM	82238-334	0.2822	Pass		
	6/21/2011 2:34:33 PM	82237-334	0.2743	Pass	97.212	Pass
AV151						
	6/21/2011 2:36:24 PM	82240-334	0.2779	Pass		
	6/21/2011 2:36:47 PM	82239-334	0.2757	Pass	99.212	Pass
AV152						
	6/21/2011 2:37:11 PM	82241-334	0.2700	Pass		
	6/21/2011 2:37:32 PM	82240-334	0.2698	Pass	99.948	Pass
AV153						
	6/30/2011 9:05:44 AM	63508A-334	0.2610	Pass		
	6/30/2011 10:17:32 AM	63507-334	0.2585	Pass	99.026	Pass
AV154						
	6/21/2011 2:39:31 PM	82243-334	0.2680	Pass		
	6/21/2011 2:40:03 PM	82242-334	0.2722	Pass	101.56	Pass
AV155						
	6/27/2011 9:21:16 PM	82244-334	0.2651	Pass		
	6/27/2011 9:22:09 PM	82243-334	0.2628	Pass	99.134	Pass
AV156						
	6/27/2011 9:22:55 PM	82245-334	0.2721	Pass		
	6/27/2011 9:23:40 PM	82244-334	0.2640	Pass	97.019	Pass
AV157						
	6/27/2011 9:24:40 PM	82246-334	0.2630	Pass		
	6/27/2011 9:25:17 PM	82245-334	0.2703	Pass	102.74	Pass
AV158						
	6/30/2011 11:40:49 AM	82235-334	0.2758	Pass		
	6/30/2011 12:51:15 PM	82234-334	0.2756	Pass	99.948	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV159						
	6/30/2011 9:06:12 AM	82236-334	0.2701	Pass		
	6/30/2011 9:06:45 AM	82235-334	0.2750	Pass	101.83	Pass
AV160						
	6/30/2011 9:07:03 AM	82237-334	0.2630	Pass		
	6/30/2011 9:07:22 AM	82236-334	0.2656	Pass	100.98	Pass
AV161						
	6/27/2011 9:29:26 PM	63508A-334	0.2652	Pass		
	6/27/2011 9:29:59 PM	63507-334	0.2604	Pass	98.212	Pass
AV162						
	6/23/2011 11:26:56 AM	63509A-334	0.2637	Pass		
	6/23/2011 1:44:04 PM	63508A-334	0.2643	Pass	100.20	Pass
AV163						
	6/15/2011 1:14:12 AM	82232-334	0.2782	Pass		
	6/27/2011 9:30:57 PM	63509A-334	0.2748	Pass	98.774	Pass
AV164						
	6/30/2011 9:07:48 AM	82241-334	0.2661	Pass		
	6/30/2011 9:08:11 AM	82240-334	0.2702	Pass	101.52	Pass
AV165						
	6/15/2011 1:14:21 AM	82234-334	0.2869	Pass		
	6/27/2011 9:32:32 PM	82233-334	0.2796	Pass	97.467	Pass
AV166						
	6/15/2011 1:14:26 AM	82235-334	0.2773	Pass		
	6/27/2011 9:33:19 PM	82234-334	0.2771	Pass	99.922	Pass
AV167						
	6/15/2011 1:14:30 AM	82236-334	0.2723	Pass		
	6/27/2011 9:34:00 PM	82235-334	0.2755	Pass	101.17	Pass
AV168						
	6/15/2011 1:14:34 AM	82237-334	0.2627	Pass		
	6/27/2011 9:34:45 PM	82236-334	0.2702	Pass	102.85	Pass
AV169						
	6/15/2011 1:14:37 AM	82238-334	0.2711	Pass		
	6/27/2011 9:35:26 PM	82237-334	0.2674	Pass	98.648	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV170						
	6/15/2011 1:14:41 AM	82239-334	0.2783	Pass		
	6/27/2011 9:36:10 PM	82238-334	0.2688	Pass	96.606	Pass
AV171						
	6/15/2011 1:14:45 AM	82240-334	0.2709	Pass		
	6/27/2011 9:37:06 PM	82239-334	0.2813	Pass	103.84	Pass
AV172						
	6/15/2011 1:14:49 AM	82241-334	0.2699	Pass		
	6/27/2011 9:37:46 PM	82240-334	0.2705	Pass	100.22	Pass
AV173						
	6/15/2011 1:14:52 AM	82242-334	0.2830	Pass		
	6/27/2011 9:38:28 PM	82241-334	0.2716	Pass	95.991	Pass
AV174						
	6/15/2011 1:14:56 AM	82243-334	0.2679	Pass		
	6/27/2011 9:39:06 PM	82242-334	0.2743	Pass	102.42	Pass
AV175						
	6/15/2011 1:15:00 AM	82244-334	0.2675	Pass		
	6/27/2011 9:39:52 PM	82243-334	0.2720	Pass	101.67	Pass
AV176						
	6/15/2011 2:15:31 AM	82245-334	0.2726	Pass		
	6/27/2011 9:40:38 PM	82244-334	0.2661	Pass	97.631	Pass
AV177						
	6/15/2011 1:15:04 AM	82246-334	0.2651	Pass		
	6/15/2011 4:19:56 AM	82245-334	0.2751	Pass	103.75	Pass
AV178						
	6/15/2011 1:15:07 AM	82247-334	0.2746	Pass		
	6/27/2011 9:41:21 PM	82246-334	0.2711	Pass	98.745	Pass
AV179						
	6/30/2011 9:08:46 AM	82237-334	0.2742	Pass		
	6/30/2011 10:17:36 AM	82236-334	0.2866	Pass	104.51	Pass
AV180						
	6/15/2011 1:15:15 AM	63507-334	0.2625	Pass		
	6/27/2011 9:43:59 PM	63506-334	0.2532	Pass	96.455	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV181						
	6/15/2011 1:15:18 AM	63508A-334	0.2611	Pass		
	6/27/2011 9:44:46 PM	63507-334	0.2587	Pass	99.069	Pass
AV182						
	6/27/2011 9:45:31 PM	63509A-334	0.2629	Pass		
	6/27/2011 9:46:14 PM	63508A-334	0.2625	Pass	99.822	Pass
AV183						
	6/20/2011 10:52:50 PM	82232-334	0.2795	Pass		
	6/27/2011 9:46:57 PM	63509A-334	0.2671	Pass	95.537	Pass
AV184						
	6/20/2011 10:52:55 PM	82233-334	0.2772	Pass		
	6/27/2011 9:47:46 PM	82232-334	0.2799	Pass	100.95	Pass
AV185						
	6/20/2011 10:52:58 PM	82234-334	0.2823	Pass		
	6/27/2011 9:48:33 PM	82233-334	0.2741	Pass	97.113	Pass
AV186						
	6/20/2011 10:53:06 PM	82235-334	0.2741	Pass		
	6/27/2011 9:49:22 PM	82234-334	0.2744	Pass	100.12	Pass
AV187						
	6/20/2011 10:53:09 PM	82236-334	0.2672	Pass		
	6/27/2011 9:50:09 PM	82235-334	0.2741	Pass	102.59	Pass
AV188						
	6/20/2011 10:53:13 PM	82237-334	0.2820	Pass		
	6/27/2011 9:50:56 PM	82236-334	0.2799	Pass	99.240	Pass
AV189						
	6/20/2011 10:53:16 PM	82238-334	0.2769	Pass		
	6/27/2011 9:51:48 PM	82237-334	0.2684	Pass	96.927	Pass
AV190						
	6/21/2011 1:27:18 AM	82239-334	0.2710	Pass		
	6/27/2011 9:52:36 PM	82238-334	0.2739	Pass	101.05	Pass
AV191						
	6/20/2011 10:53:19 PM	82240-334	0.2794	Pass		
	6/21/2011 4:20:11 AM	82239-334	0.2769	Pass	99.115	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV192						
	6/20/2011 10:53:23 PM	82241-334	0.2797	Pass		
	6/27/2011 9:53:23 PM	82240-334	0.2797	Pass	100.02	Pass
AV193						
	6/20/2011 10:53:26 PM	82242-334	0.2736	Pass		
	6/27/2011 9:54:02 PM	82241-334	0.2750	Pass	100.50	Pass
AV194						
	6/20/2011 10:53:29 PM	82243-334	0.2734	Pass		
	6/27/2011 9:54:56 PM	82242-334	0.2776	Pass	101.56	Pass
AV195						
	6/20/2011 10:53:33 PM	82244-334	0.2644	Pass		
	6/27/2011 9:55:43 PM	82243-334	0.2668	Pass	100.90	Pass
AV196						
	6/20/2011 10:53:37 PM	82245-334	0.2839	Pass		
	6/27/2011 9:56:30 PM	82244-334	0.2753	Pass	96.985	Pass
AV197						
	6/24/2011 2:40:07 AM	82246-334	0.2672	Pass		
	6/27/2011 9:57:47 PM	82245-334	0.2763	Pass	103.37	Pass
AV198						
	6/24/2011 2:22:48 PM	82247-334	0.2725	Pass		
	6/24/2011 3:24:45 PM	82246-334	0.2672	Pass	98.027	Pass
AV199						
	6/30/2011 9:09:28 AM	82238-334	0.2684	Pass		
	6/30/2011 10:17:40 AM	82237-334	0.2638	Pass	98.291	Pass
AV200						
	6/20/2011 10:53:47 PM	63507-334	0.2618	Pass		
	6/27/2011 10:00:20 PM	63506-334	0.2543	Pass	97.155	Pass
AV201						
	6/20/2011 10:53:53 PM	63508A-334	0.2654	Pass		
	6/27/2011 10:01:08 PM	63507-334	0.2735	Pass	103.06	Pass
AV202						
	6/27/2011 10:01:51 PM	63509A-334	0.2648	Pass		
	6/27/2011 10:02:25 PM	63508A-334	0.2613	Pass	98.648	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV203						
	6/21/2011 3:19:59 PM	82232-334	0.2768	Pass		
	6/21/2011 3:21:44 PM	63509A-334	0.2646	Pass	95.582	Pass
AV204						
	6/27/2011 10:03:31 PM	82233-334	0.2705	Pass		
	6/27/2011 10:04:08 PM	82232-334	0.2736	Pass	101.16	Pass
AV205						
	6/21/2011 3:29:26 PM	82234-334	0.2783	Pass		
	6/27/2011 10:04:59 PM	82233-334	0.2722	Pass	97.818	Pass
AV206						
	6/27/2011 10:05:51 PM	82235-334	0.2796	Pass		
	6/27/2011 10:06:38 PM	82234-334	0.2837	Pass	101.48	Pass
AV207						
	6/27/2011 10:07:21 PM	82236-334	0.2735	Pass		
	6/27/2011 10:08:05 PM	82235-334	0.2759	Pass	100.87	Pass
AV208						
	6/27/2011 10:08:56 PM	82237-334	0.2765	Pass		
	6/27/2011 10:09:30 PM	82236-334	0.2800	Pass	101.26	Pass
AV209						
	6/27/2011 10:10:06 PM	82238-334	0.2812	Pass		
	6/27/2011 10:10:39 PM	82237-334	0.2680	Pass	95.309	Pass
AV210						
	6/21/2011 9:13:09 AM	82239-334	0.2718	Pass		
	6/27/2011 10:11:34 PM	82238-334	0.2722	Pass	100.16	Pass
AV211						
	6/27/2011 10:12:37 PM	82240-334	0.2684	Pass		
	6/21/2011 10:55:13 AM	82239-334	0.2688	Pass	100.13	Pass
AV212						
	6/27/2011 10:13:23 PM	82241-334	0.2851	Pass		
	6/27/2011 10:13:58 PM	82240-334	0.2891	Pass	101.41	Pass
AV213						
	6/23/2011 11:27:18 AM	82242-334	0.2707	Pass		
	6/23/2011 1:44:14 PM	82241-334	0.2712	Pass	100.17	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV214						
	6/27/2011 10:15:18 PM	82243-334	0.2701	Pass		
	6/27/2011 10:15:54 PM	82242-334	0.2728	Pass	100.98	Pass
AV215						
	6/27/2011 10:16:46 PM	82244-334	0.2907	Pass		
	6/27/2011 10:17:26 PM	82243-334	0.2768	Pass	95.222	Pass
AV216						
	6/27/2011 10:18:14 PM	82245-334	0.2815	Pass		
	6/27/2011 10:18:50 PM	82244-334	0.2736	Pass	97.176	Pass
AV217						
	7/1/2011 10:10:06 AM	82246-334	0.2656	Pass		
	7/1/2011 10:10:22 AM	82245-334	0.2746	Pass	103.39	Pass
AV218						
	6/24/2011 1:51:29 PM	82247-334	0.2743	Pass		
	6/24/2011 5:16:09 PM	82246-334	0.2696	Pass	98.287	Pass
AV219						
	6/30/2011 9:09:52 AM	82240-334	0.2749	Pass		
	6/30/2011 9:10:10 AM	82238-334	0.2711	Pass	98.608	Pass
AV220						
	6/27/2011 10:21:49 PM	63507-334	0.2632	Pass		
	6/27/2011 10:22:24 PM	63506-334	0.2579	Pass	97.981	Pass
AV221						
	6/27/2011 10:23:08 PM	63508A-334	0.2621	Pass		
	6/27/2011 10:23:43 PM	63507-334	0.2617	Pass	99.836	Pass
AV222						
	6/27/2011 10:24:23 PM	63509A-334	0.2675	Pass		
	6/27/2011 10:25:09 PM	63508A-334	0.2634	Pass	98.476	Pass
AV223						
	6/23/2011 11:28:00 AM	82232-334	0.2800	Pass		
	6/23/2011 1:44:18 PM	63509A-334	0.2682	Pass	95.794	Pass
AV224						
	6/23/2011 11:28:25 AM	82233-334	0.2755	Pass		
	6/23/2011 1:44:22 PM	82232-334	0.2798	Pass	101.55	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV225						
	6/24/2011 2:40:10 AM	82234-334	0.2791	Pass		
	6/27/2011 10:26:27 PM	82233-334	0.2753	Pass	98.623	Pass
AV226						
	6/24/2011 2:40:15 AM	82235-334	0.2729	Pass		
	6/27/2011 10:27:06 PM	82234-334	0.2800	Pass	102.61	Pass
AV227						
	6/25/2011 10:39:33 AM	82236-334	0.2783	Pass		
	6/25/2011 1:18:30 PM	82235-334	0.2773	Pass	99.651	Pass
AV228						
	6/28/2011 9:07:26 AM	82237-334	0.2755	Pass		
	6/28/2011 9:07:46 AM	82236-334	0.2863	Pass	103.94	Pass
AV229						
	6/25/2011 10:39:43 AM	82238-334	0.2781	Pass		
	6/25/2011 1:18:41 PM	82237-334	0.2735	Pass	98.336	Pass
AV230						
	6/25/2011 10:39:47 AM	82239-334	0.2844	Pass		
	6/25/2011 1:19:16 PM	82238-334	0.2812	Pass	98.851	Pass
AV231						
	6/25/2011 10:50:22 AM	82240-334	0.2784	Pass		
	6/25/2011 1:19:42 PM	82239-334	0.2758	Pass	99.090	Pass
AV232						
	6/25/2011 10:58:31 AM	82241-334	0.2758	Pass		
	6/25/2011 1:19:51 PM	82240-334	0.2812	Pass	101.96	Pass
AV233						
	6/25/2011 10:58:37 AM	82242-334	0.2668	Pass		
	6/25/2011 1:20:13 PM	82241-334	0.2705	Pass	101.37	Pass
AV234						
	6/28/2011 9:08:33 AM	82243-334	0.2710	Pass		
	6/28/2011 9:08:49 AM	82242-334	0.2714	Pass	100.13	Pass
AV235						
	6/25/2011 11:19:40 AM	82244-334	0.2686	Pass		
	6/25/2011 1:21:34 PM	82243-334	0.2694	Pass	100.30	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV236						
	6/25/2011 11:19:44 AM	82245-334	0.2759	Pass		
	6/25/2011 1:22:02 PM	82244-334	0.2647	Pass	95.960	Pass
AV237						
	6/25/2011 11:19:48 AM	82246-334	0.2679	Pass		
	6/25/2011 1:22:14 PM	82245-334	0.2783	Pass	103.89	Pass
AV238						
	6/25/2011 11:19:52 AM	82247-334	0.2740	Pass		
	6/25/2011 1:22:47 PM	82246-334	0.2642	Pass	96.404	Pass
AV239						
	6/29/2011 4:17:46 PM	82241-334	0.2816	Pass		
	6/29/2011 5:24:20 PM	82239-334	0.2770	Pass	98.355	Pass
AV240						
	6/28/2011 9:06:33 AM	63507-334	0.2675	Pass		
	6/25/2011 1:23:31 PM	63506-334	0.2636	Pass	98.508	Pass
AV241						
	6/25/2011 11:47:42 AM	63508A-334	0.2600	Pass		
	6/25/2011 1:23:51 PM	63507-334	0.2602	Pass	100.06	Pass
AV242						
	6/25/2011 11:47:57 AM	63509A-334	0.2680	Pass		
	6/25/2011 1:24:10 PM	63508A-334	0.2667	Pass	99.534	Pass
AV243						
	6/25/2011 9:28:07 AM	82232-334	0.2795	Pass		
	6/25/2011 1:24:52 PM	63509A-334	0.2676	Pass	95.760	Pass
AV244						
	6/25/2011 12:07:09 PM	82233-334	0.2858	Pass		
	6/25/2011 1:25:04 PM	82232-334	0.2904	Pass	101.61	Pass
AV245						
	6/25/2011 12:07:13 PM	82234-334	0.2856	Pass		
	6/25/2011 1:25:24 PM	82233-334	0.2793	Pass	97.792	Pass
AV246						
	6/25/2011 12:07:17 PM	82235-334	0.2981	Pass		
	6/25/2011 1:25:53 PM	82234-334	0.2968	Pass	99.576	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV247						
	6/28/2011 9:04:33 AM	82236-334	0.2721	Pass		
	6/28/2011 9:04:52 AM	82235-334	0.2774	Pass	101.94	Pass
AV248						
	6/28/2011 9:09:30 AM	82237-334	0.2651	Pass		
	6/28/2011 9:09:48 AM	82236-334	0.2698	Pass	101.77	Pass
AV249						
	6/28/2011 9:10:11 AM	82238-334	0.2852	Pass		
	6/28/2011 9:10:27 AM	82237-334	0.2781	Pass	97.510	Pass
AV250						
	6/28/2011 9:10:53 AM	82239-334	0.2800	Pass		
	6/28/2011 9:11:12 AM	82238-334	0.2820	Pass	100.71	Pass

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Alpha Vision
Yearly Calibrations
Updated 2/22/12

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV22						
Dec2011_AV22	2/21/2012 2:57:59 PM	82237-334	0.2680	Pass		
Dec2011a_AV22_ICV	12/8/2011 2:38:54 PM	82236-334	0.2670	Pass	99.6280	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Wednesday, February 22, 2012 ***Page 1 of 1***

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV48						
June2011A_AV48	2/21/2012 2:58:50 PM	82237-334	0.2748	Pass		
June2011_AV48_ICV	6/28/2011 9:18:29 PM	82236-334	0.2720	Pass	98.9875	Pass
AV88						
May2011_AV88	2/21/2012 2:59:57 PM	82237-334	0.2736	Pass		
June2011_AV88_ICV	6/28/2011 9:33:31 PM	82236-334	0.2783	Pass	101.747	Pass
AV103						
June2011_AV103a	2/21/2012 3:00:31 PM	82237-334	0.2722	Pass		
June2011_AV103a_ICVb	6/29/2011 8:19:11 PM	82236-334	0.2718	Pass	99.8524	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV68						
May2011_AV68	2/21/2012 2:59:22 PM	82237-334	0.2733	Pass		
June2011_AV68_ICV	6/2/2011 5:28:05 PM	82236-334	0.2767	Pass	101.258	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV128						
June2011_AV128	2/21/2012 3:01:06 PM	82237-334	0.2692	Pass		
June2011_AV128_ICV	6/10/2011 3:00:38 PM	82236-334	0.2737	Pass	101.685	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV160						
June2011A_AV160	2/21/2012 3:02:57 PM	82237-334	0.2708	Pass		
June2011A_AV160_ICV	6/30/2011 9:07:22 AM	82236-334	0.2656	Pass	98.0720	Pass
AV168						
June2011_AV168	2/21/2012 3:03:27 PM	82237-334	0.2704	Pass		
June2011_AV168_ICV	6/27/2011 9:34:45 PM	82236-334	0.2702	Pass	99.9393	Pass
AV179						
June2011B_AV179	2/21/2012 3:03:50 PM	82237-334	0.2821	Pass		
June2011_AV179b_ICV	6/30/2011 10:17:36 AM	82236-334	0.2866	Pass	101.588	Pass
AV228						
June2011A_AV228	2/21/2012 3:04:50 PM	82237-334	0.2834	Pass		
June2011A_AV228_ICV	6/28/2011 9:07:46 AM	82236-334	0.2863	Pass	101.035	Pass
AV248						
June2011_AV248	2/21/2012 3:05:18 PM	82237-334	0.2726	Pass		
June2011_AV248_ICV	6/28/2011 9:09:48 AM	82236-334	0.2698	Pass	98.9835	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV205						
Dec2011_AV205	2/21/2012 3:04:20 PM	82237-334	0.2688	Pass		
Dec2011_AV205_ICV	12/16/2011 3:08:08 AM	82236-334	0.2684	Pass	99.8398	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:58:09AM 7/25/2011

Calibration

Name: June2011_AV70
Description:
Detector: AV70

Calibration Date: 6/21/2011 2:26:58PM
Analyst: 60040

Source Info

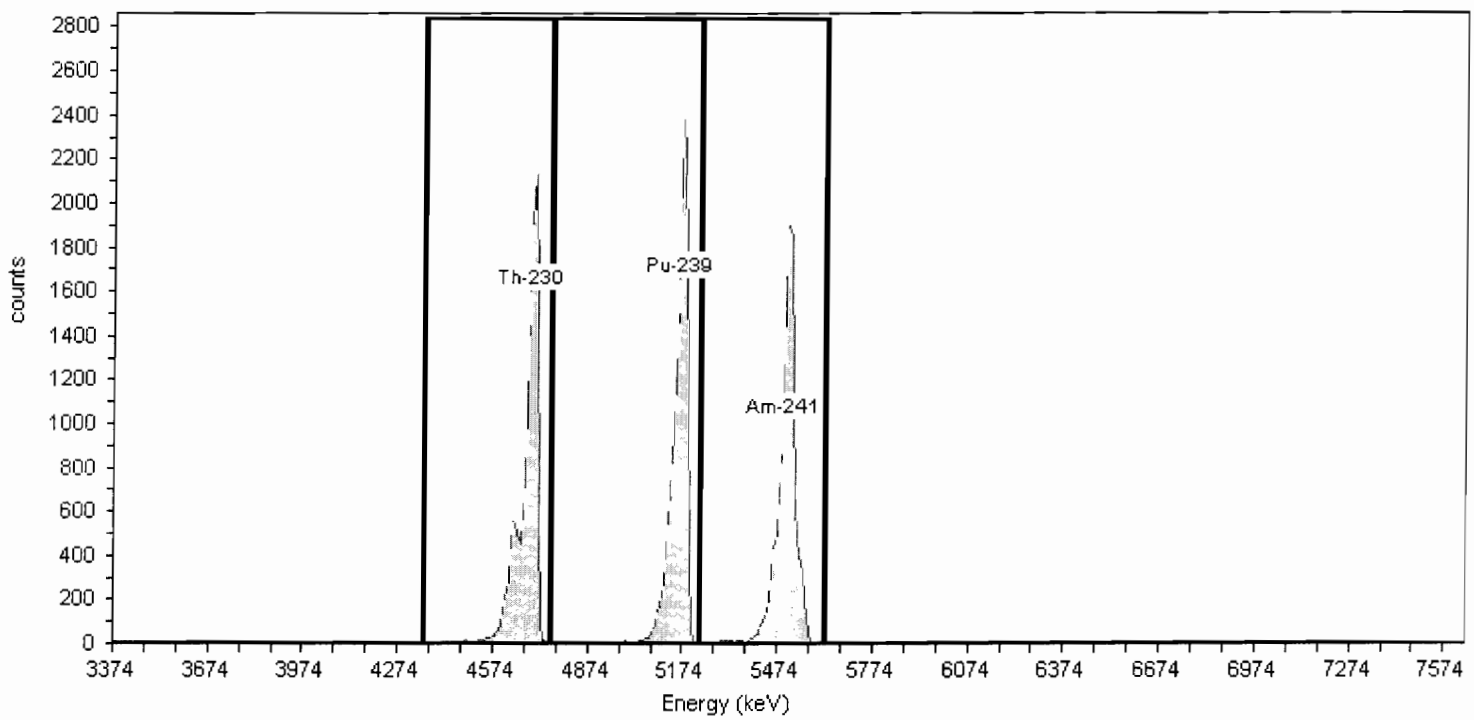
Certificate ID: 82239-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV70 , SN: 48-158FF1
Acquisition Start Date: 6/21/2011 11:56:05AM
Live Time: 140.00 min.
Real Time: 140.45 min.
Efficiency: 27.63% +/- 0.39% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	13,271.00	94.79
Pu-239	240	5.16	186	249	14,176.00	101.26
Am-241	284	5.49	249	303	13,029.00	93.06

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:58:14AM 7/25/2011

Calibration

Name: June2011A_AV70_ICV
Description:
Detector: AV70

Calibration Date: 6/22/2011 2:20:23AM
Analyst: 60040

Source Info

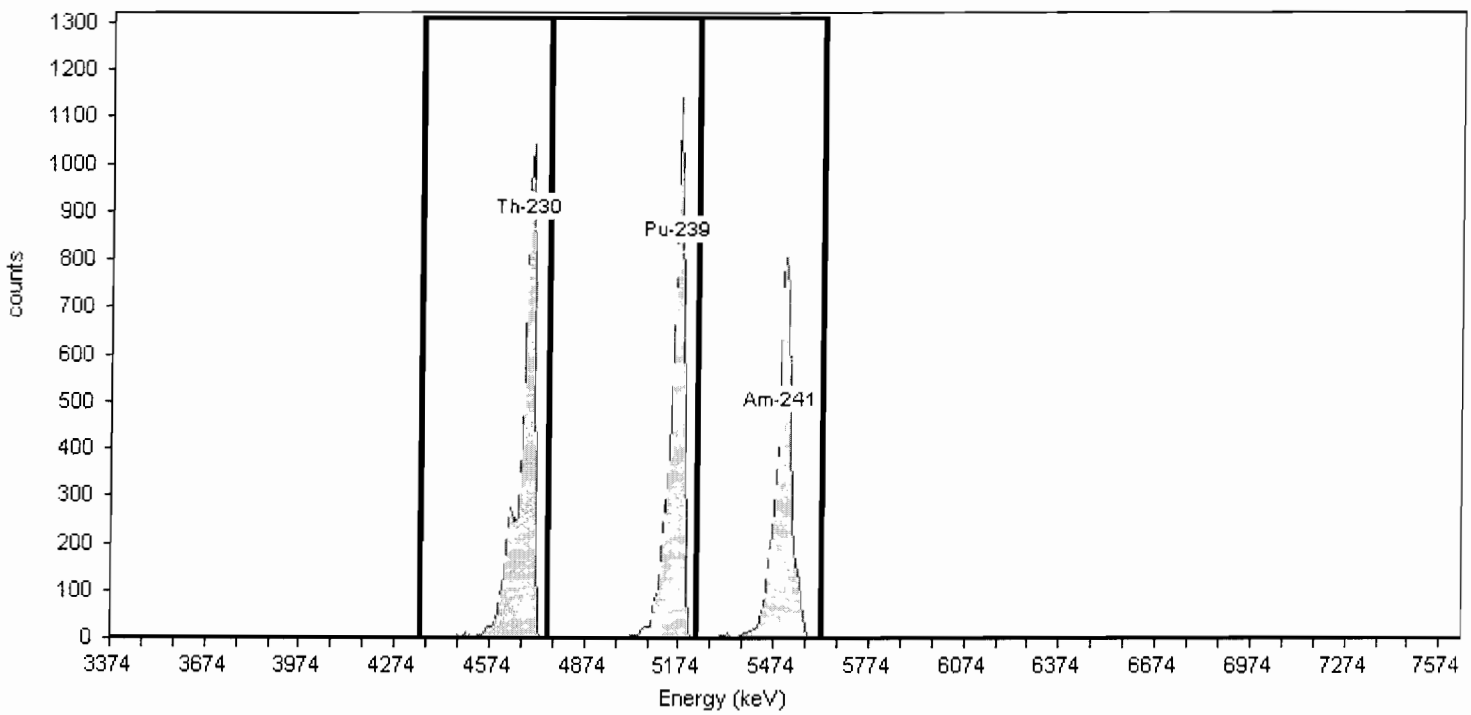
Certificate ID: 82238-334
Prepared by: Analytics

Certification Date: 6/1/2010 12:00:00PM
Description:

Acquisition

Detector: AV70 , SN: 48-158FF1
Acquisition Start Date: 6/22/2011 1:19:08AM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 27.00% +/- 0.46% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,822.00	113.70
Pu-239	240	5.16	186	249	6,643.00	110.72
Am-241	284	5.49	249	303	5,767.00	96.12

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:58:27AM 7/25/2011

Calibration

Name: May2011_AV71
Description:
Detector: AV71

Calibration Date: 6/2/2011 11:17:45AM
Analyst: 60040

Source Info

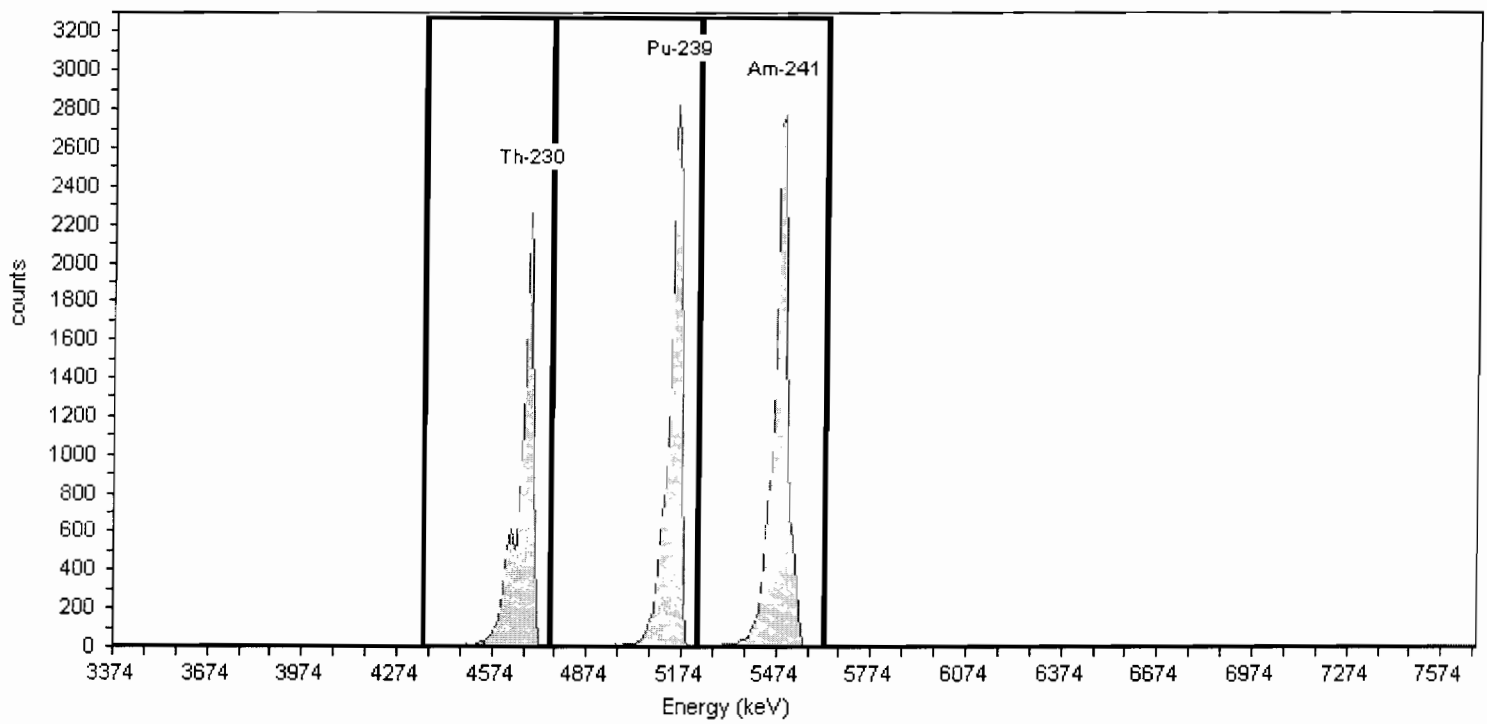
Certificate ID: 82240-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV71 , SN: 48-158EE6
Acquisition Start Date: 6/2/2011 8:30:47AM
Live Time: 140.00 min.
Real Time: 140.09 min.
Efficiency: 27.41% +/- 0.31% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	14,313.00	102.24
Pu-239	240	5.16	186	249	16,812.00	120.09
Am-241	284	5.49	249	303	18,982.00	135.59

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:58:32AM 7/25/2011

Calibration

Name: June2011_AV71_ICV
Description:
Detector: AV71

Calibration Date: 6/2/2011 6:59:06PM
Analyst: 60040

Source Info

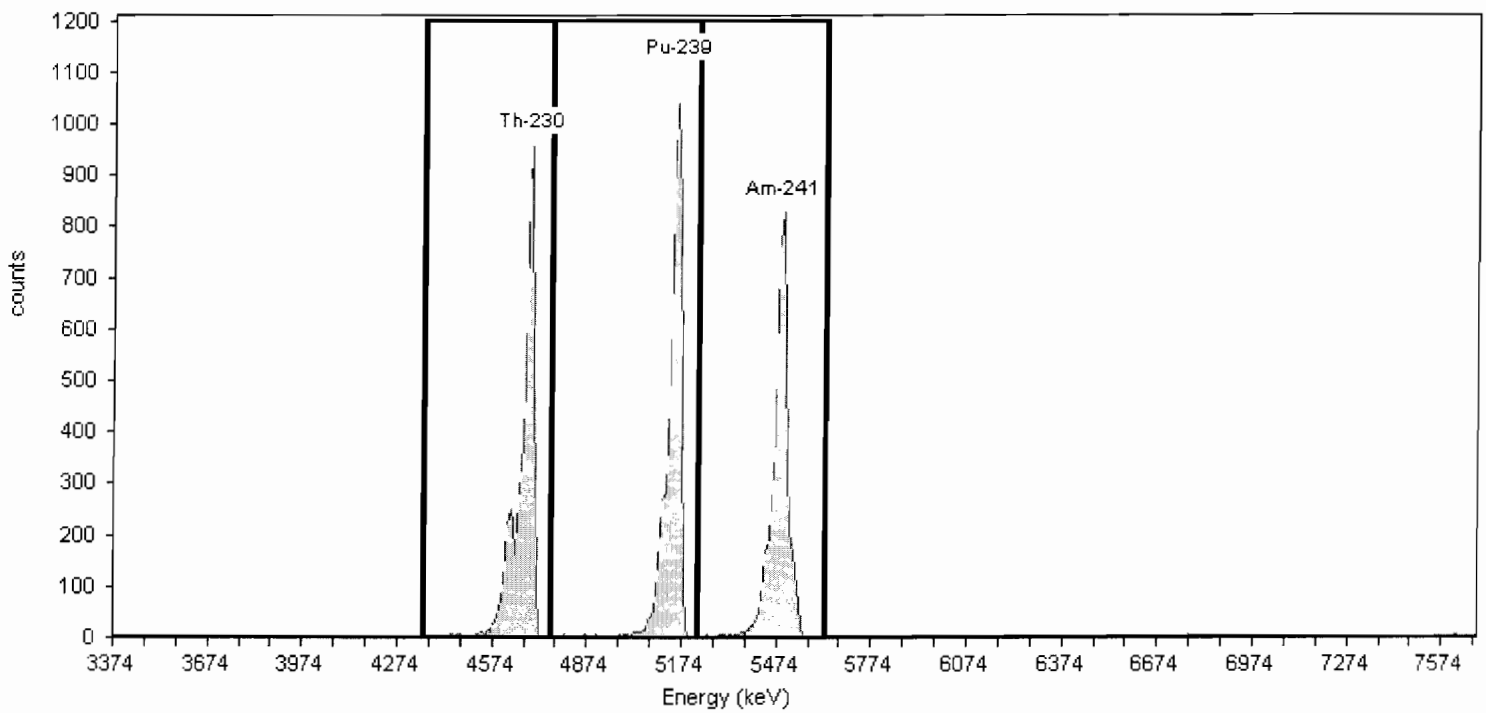
Certificate ID: 82239-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV71 , SN: 48-158EE6
Acquisition Start Date: 6/2/2011 5:53:09PM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 27.35% +/- 0.50% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,746.00	95.77
Pu-239	240	5.16	186	249	5,997.00	99.95
Am-241	284	5.49	249	303	5,428.00	90.47

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:13:06PM 7/25/2011

Calibration

Name: May2011_AV72
Description:
Detector: AV72

Calibration Date: 6/2/2011 11:17:59AM
Analyst: 60040

Source Info

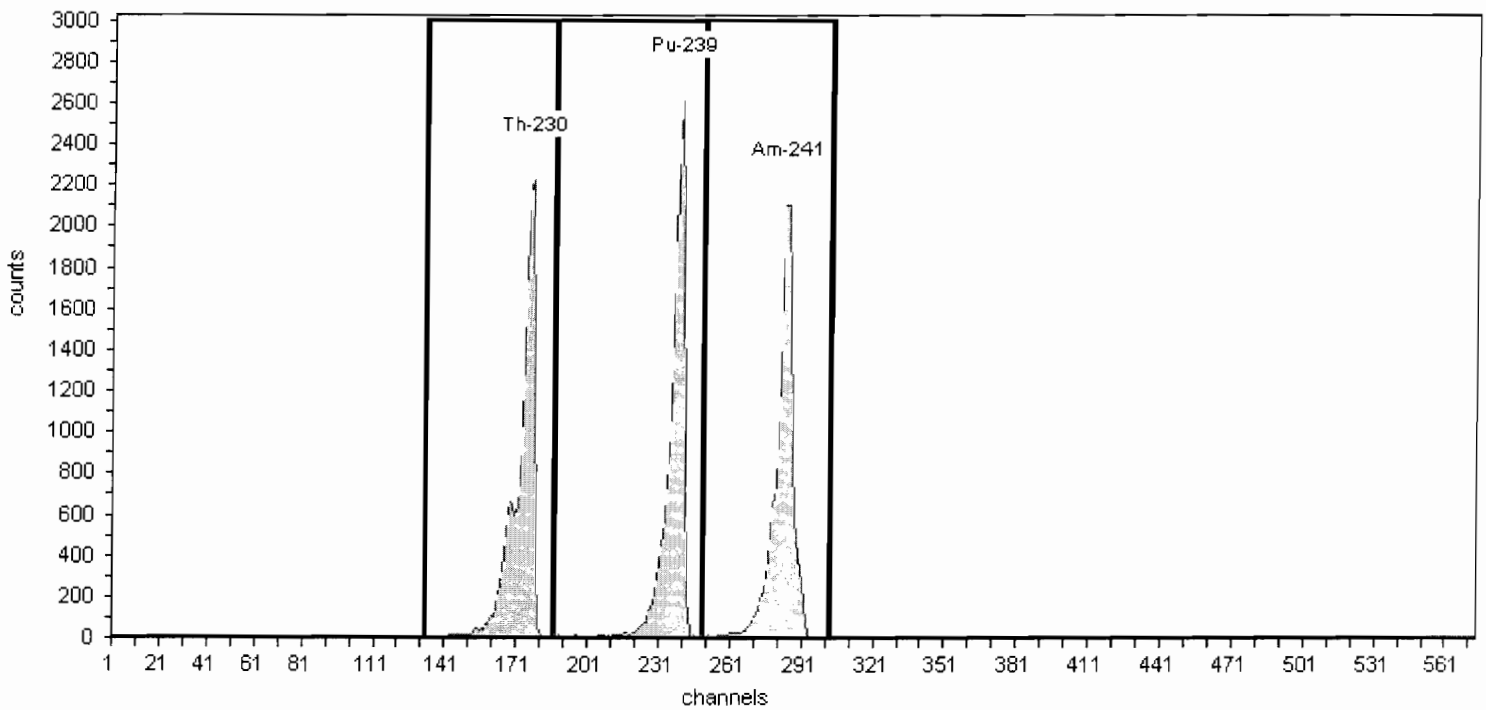
Certificate ID: 82241-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV72 , SN:
Acquisition Start Date: 6/2/2011 8:31:21AM
Live Time: 140.00 min.
Real Time: 140.09 min.
Efficiency: 28.92% +/- 0.35% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	16,043.00	114.59
Pu-239	240	5.16	186	249	16,690.00	119.21
Am-241	284	5.49	249	303	16,009.00	114.35

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
11:58:46AM 7/25/2011

Calibration

Name: June2011_AV72_ICV
Description:
Detector: AV72

Calibration Date: 6/2/2011 6:59:09PM
Analyst: 60040

Source Info

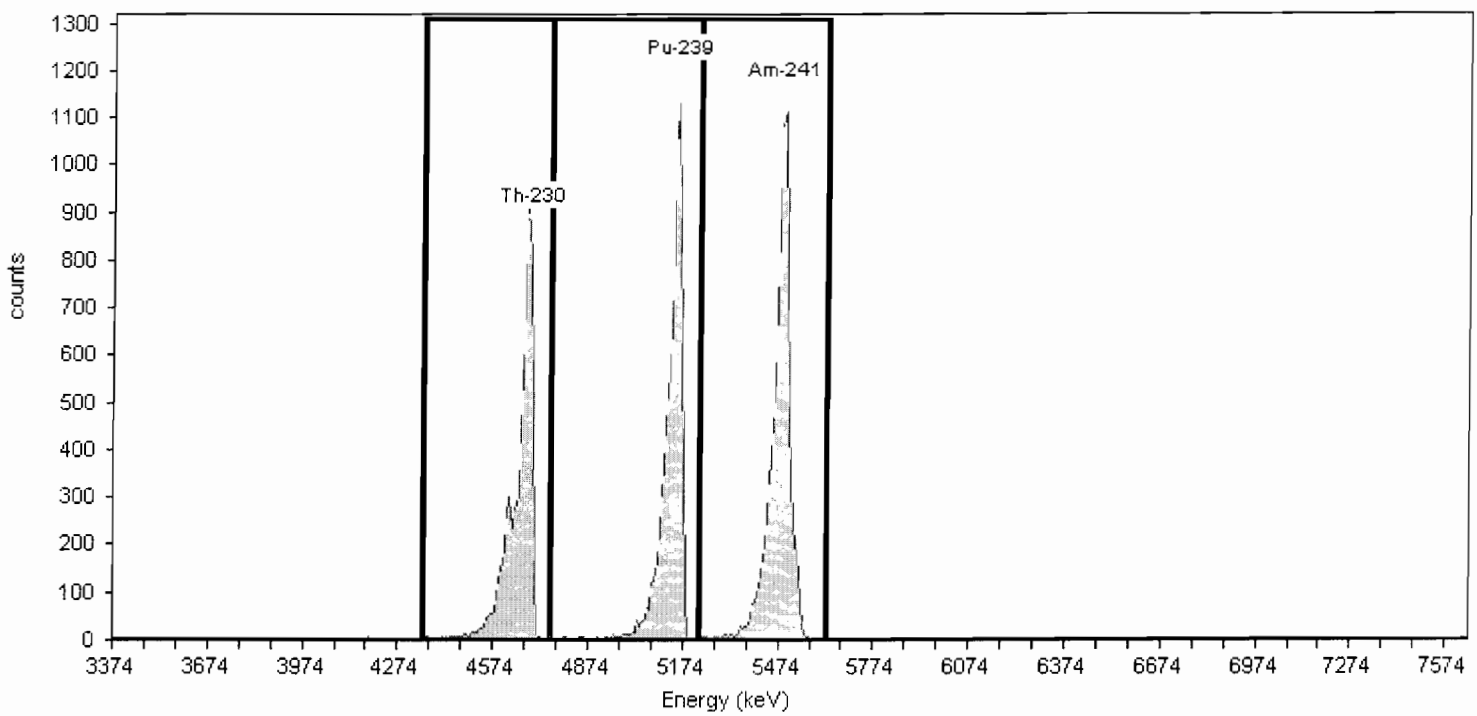
Certificate ID: 82240-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV72 , SN:
Acquisition Start Date: 6/2/2011 5:53:23PM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 28.76% +/- 0.44% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,532.00	108.87
Pu-239	240	5.16	186	249	7,534.00	125.57
Am-241	284	5.49	249	303	8,472.00	141.20

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
3:01:55PM 12/16/2011

Calibration

Name: Dec2011_AV73
Description:
Detector: AV73

Calibration Date: 12/16/2011 2:11:57PM
Analyst: 60040

Source Info

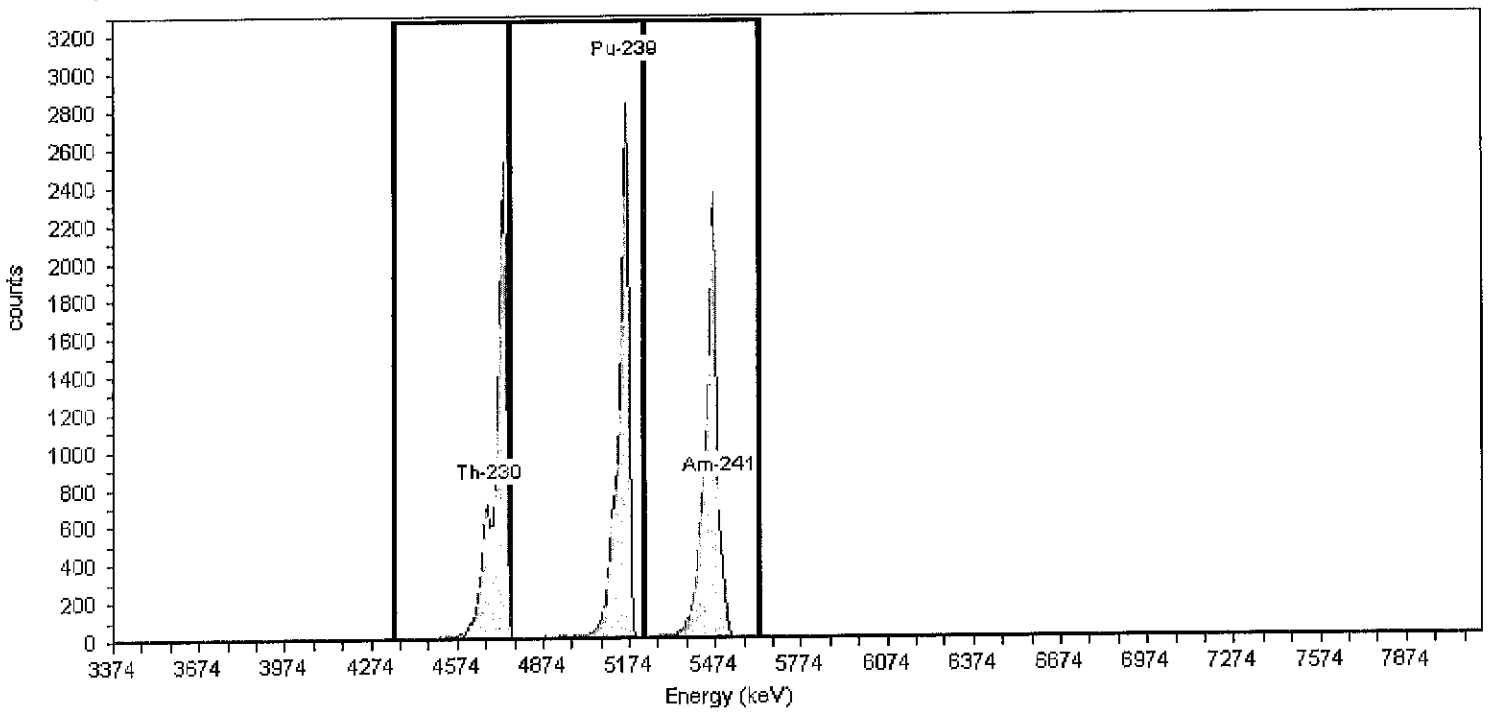
Certificate ID: 82241-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV73 , SN: 49-155N4
Acquisition Start Date: 12/12/2011 8:12:18PM
Live Time: 140.00 min.
Real Time: 140.02 min.
Efficiency: 27.86% +/- 0.34% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	15,295.00	109.25
Pu-239	240	5.16	186	249	16,257.00	116.12
Am-241	284	5.49	249	303	15,399.00	109.99

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
3:02:00PM 12/16/2011

Calibration

Name: Dec2011_AV73_ICVa
Description:
Detector: AV73

Calibration Date: 12/16/2011 2:12:35PM
Analyst: 60040

Source Info

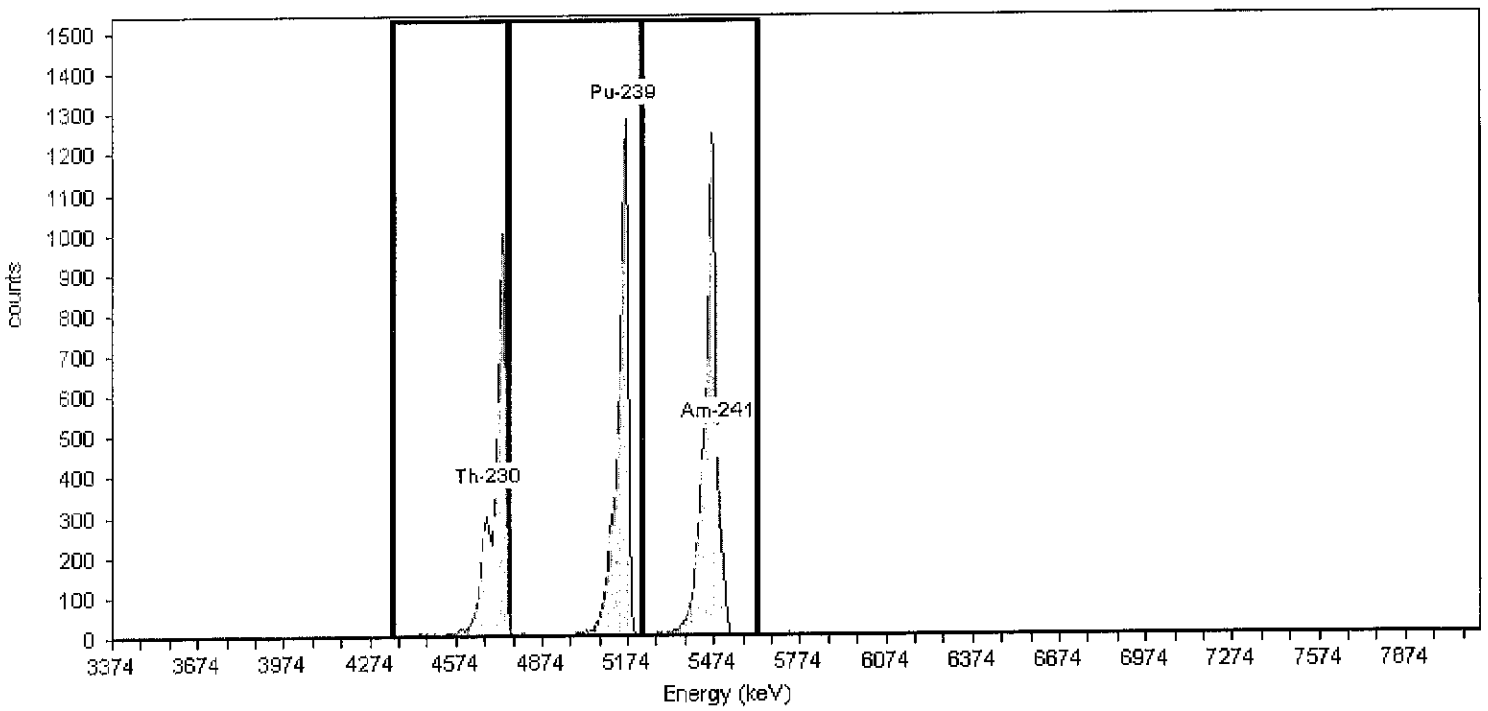
Certificate ID: 82240-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV73 , SN: 49-155N4
Acquisition Start Date: 12/12/2011 10:42:20PM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 28.27% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,286.00	104.77
Pu-239	240	5.16	186	249	7,533.00	125.55
Am-241	284	5.49	249	303	8,328.00	138.80

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
3:02:16PM 12/16/2011

Calibration

Name: Dec2011_AV74b
Description:
Detector: AV74

Calibration Date: 12/13/2011 12:09:06PM
Analyst: 60040

Source Info

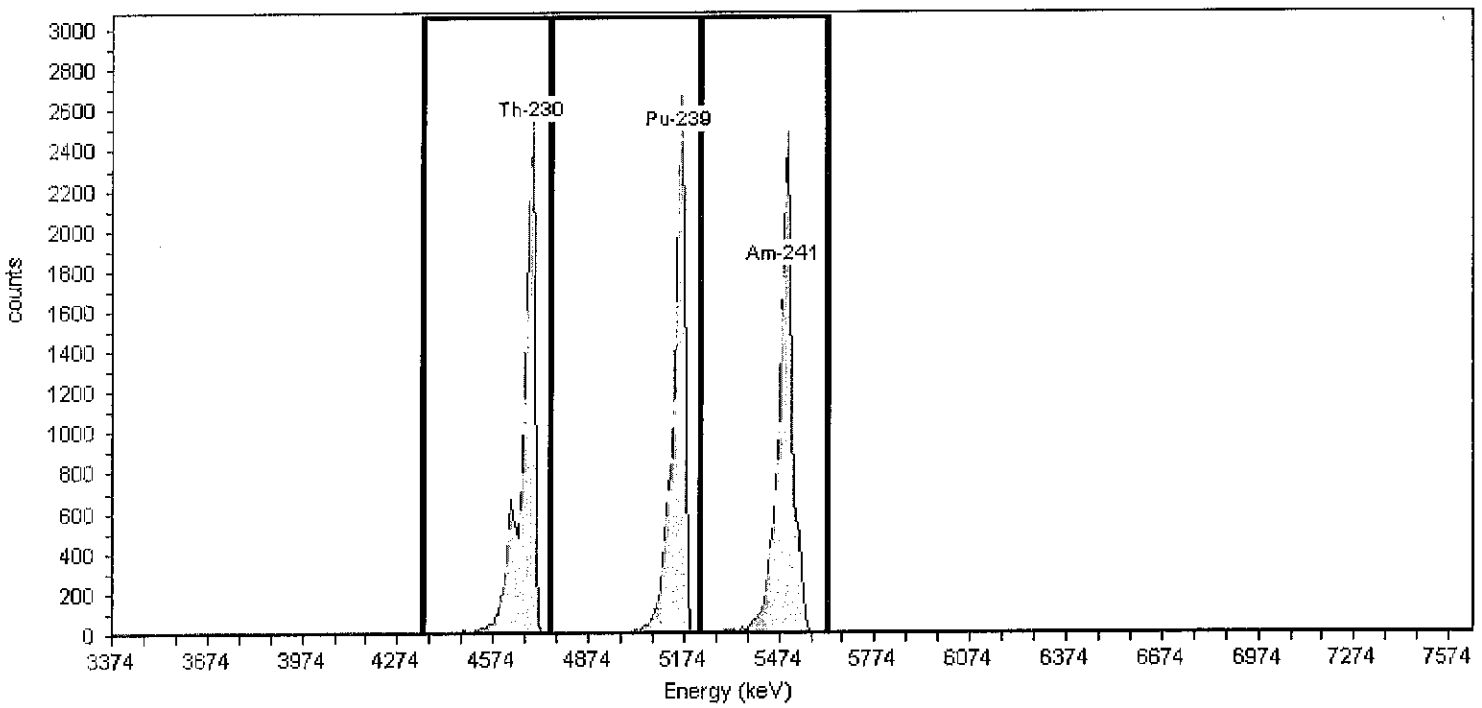
Certificate ID: 82242-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV74 , SN: 50-051C6
Acquisition Start Date: 12/13/2011 9:47:59AM
Live Time: 140.00 min.
Real Time: 140.02 min.
Efficiency: 27.38% +/- 0.34% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	15,164.00	108.31
Pu-239	240	5.16	186	249	14,754.00	105.39
Am-241	284	5.49	249	303	16,382.00	117.01

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:56:09PM 7/25/2011

Calibration

Name: May2011_AV75
Description:
Detector: AV75

Calibration Date: 6/2/2011 11:18:19AM
Analyst: 60040

Source Info

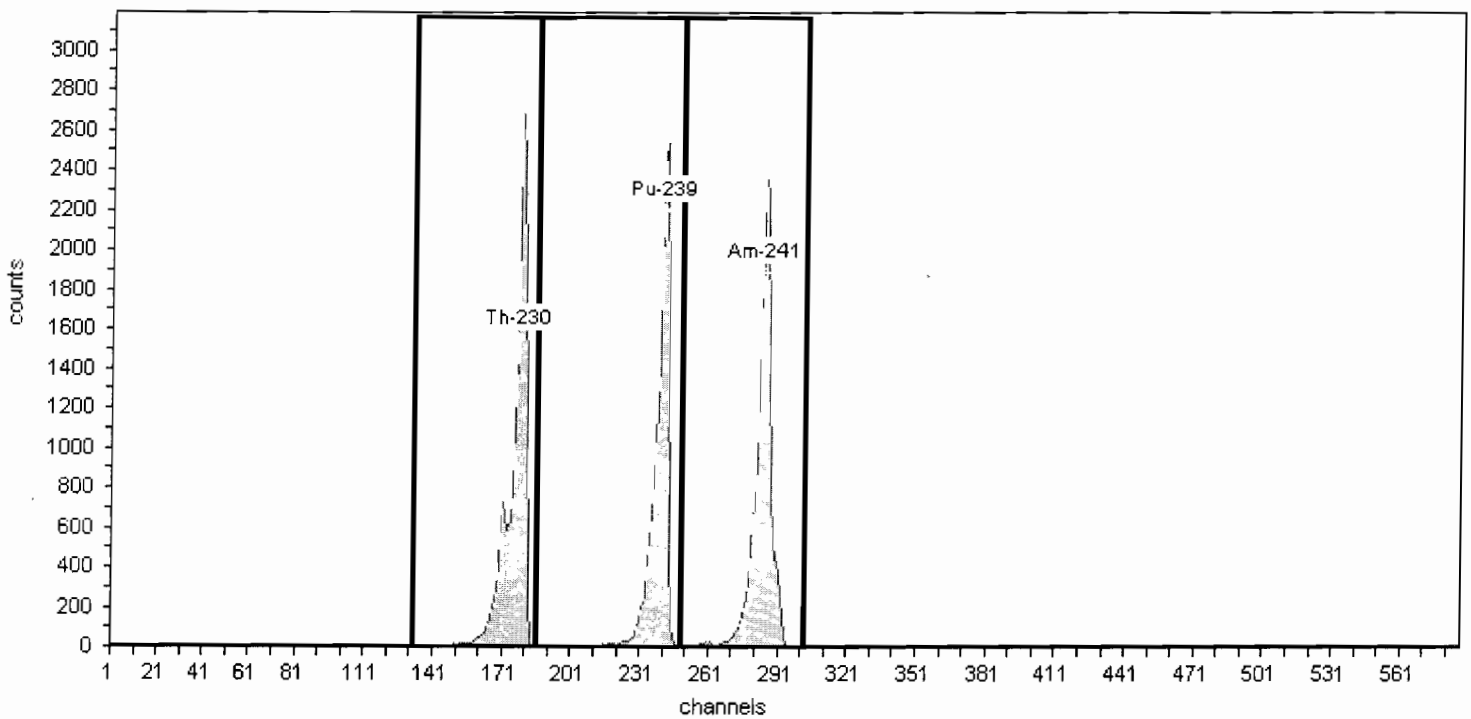
Certificate ID: 82244-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV75 , SN: 46-033P6
Acquisition Start Date: 6/2/2011 8:31:55AM
Live Time: 140.00 min.
Real Time: 140.05 min.
Efficiency: 26.42% +/- 0.32% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	16,306.00	116.47
Pu-239	240	5.16	186	249	14,842.00	106.01
Am-241	284	5.49	249	303	15,377.00	109.84

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:56:14PM 7/25/2011

Calibration

Name: June2011_AV75_ICV
Description:
Detector: AV75

Calibration Date: 6/2/2011 5:28:13PM
Analyst: 60040

Source Info

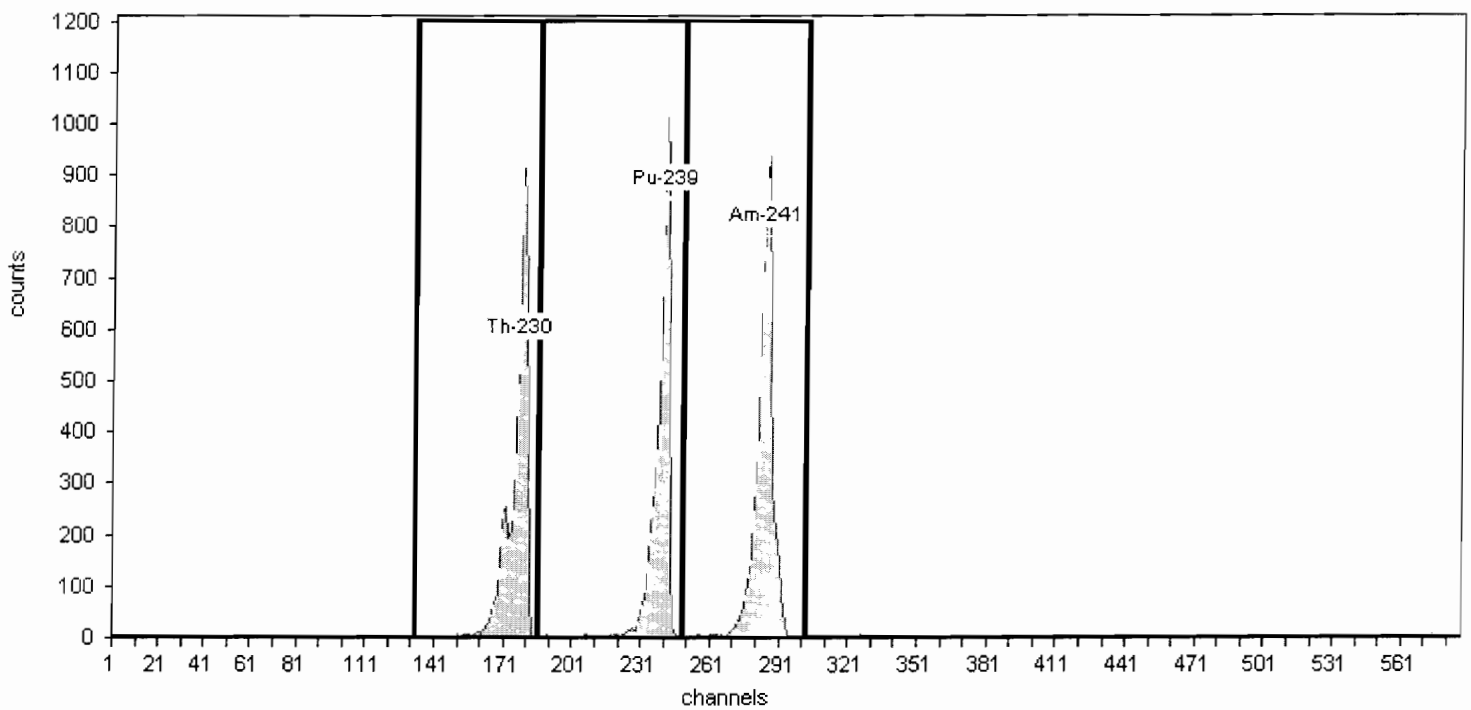
Certificate ID: 82243-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV75 , SN: 46-033P6
Acquisition Start Date: 6/2/2011 12:24:38PM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 26.46% +/- 0.46% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,550.00	92.50
Pu-239	240	5.16	186	249	5,576.00	92.93
Am-241	284	5.49	249	303	6,239.00	103.98

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
3:02:22PM 12/16/2011

Calibration

Name: Dec2011_AV76_ICV
Description:
Detector: AV76

Calibration Date: 12/15/2011 4:07:23AM
Analyst: 60040

Source Info

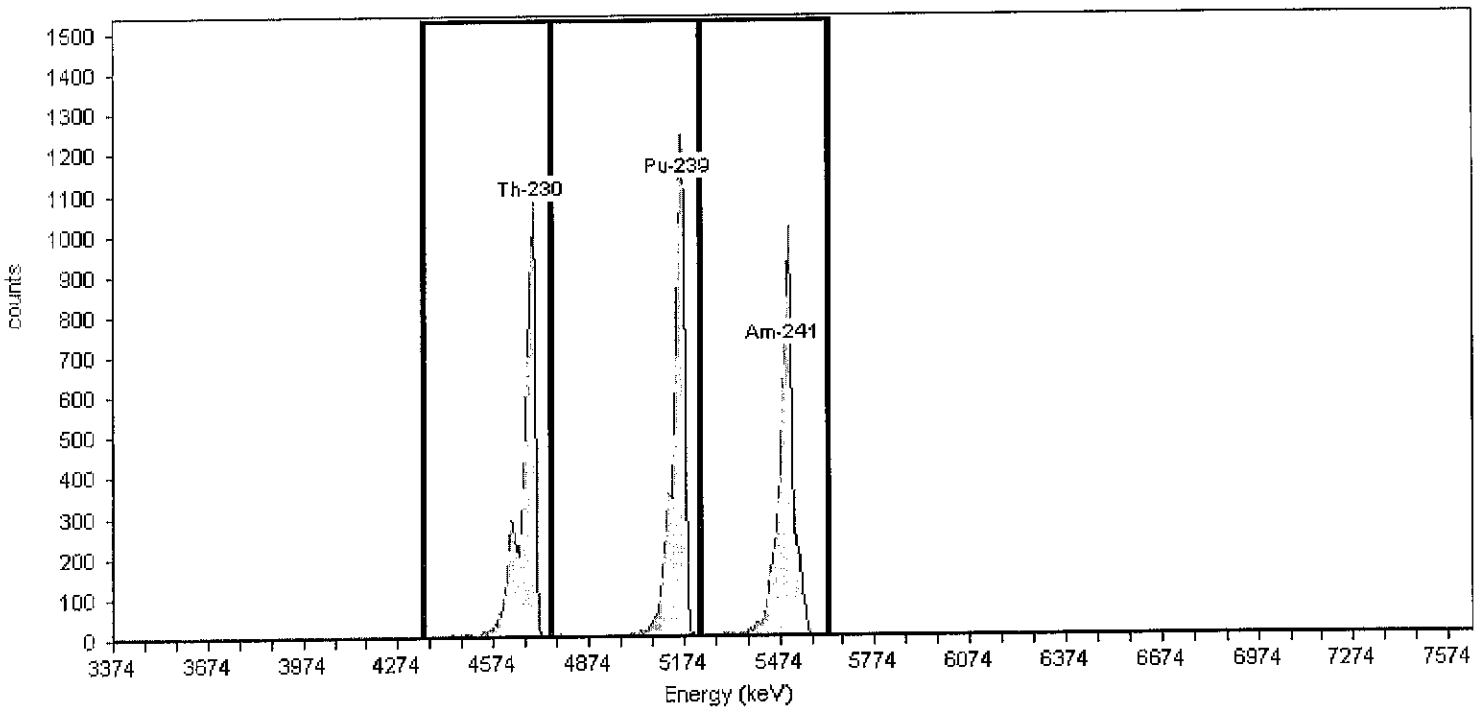
Certificate ID: 82241-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV76 , SN: 49-155N6
Acquisition Start Date: 12/15/2011 3:07:21AM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 13.20% +/- 0.30% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,610.00	110.17
Pu-239	240	5.16	186	249	6,773.00	112.88
Am-241	284	5.49	249	303	6,419.00	106.98

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:56:23PM 7/25/2011

Calibration

Name: May2011_AV77
Description:
Detector: AV77

Calibration Date: 6/2/2011 11:18:32AM
Analyst: 60040

Source Info

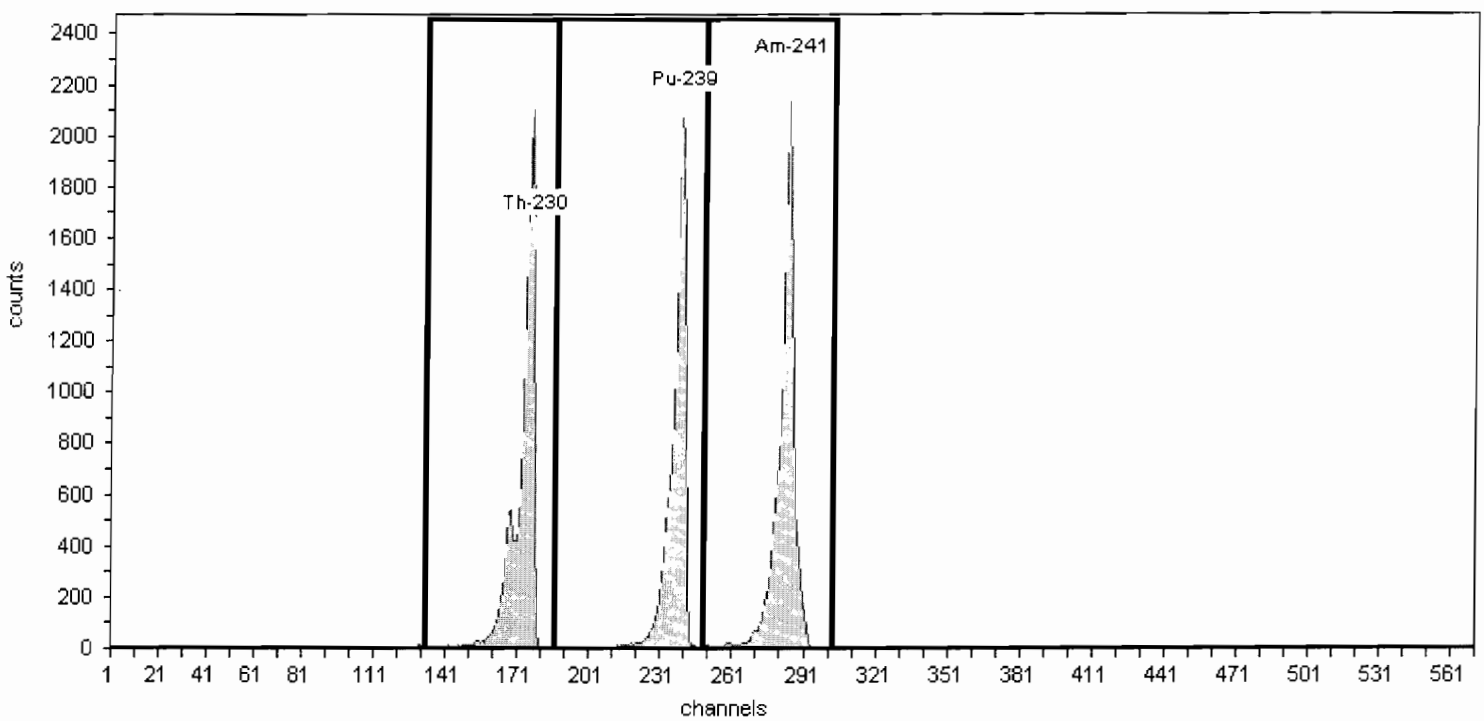
Certificate ID: 82246-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV77 , SN: 49-155N7
Acquisition Start Date: 6/2/2011 8:31:57AM
Live Time: 140.00 min.
Real Time: 140.05 min.
Efficiency: 26.64% +/- 0.39% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	12,445.00	88.89
Pu-239	240	5.16	186	249	11,893.00	84.95
Am-241	284	5.49	249	303	13,527.00	96.62

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:56:28PM 7/25/2011

Calibration

Name: June2011_AV77_ICV
Description:
Detector: AV77

Calibration Date: 6/2/2011 6:58:56PM
Analyst: 60040

Source Info

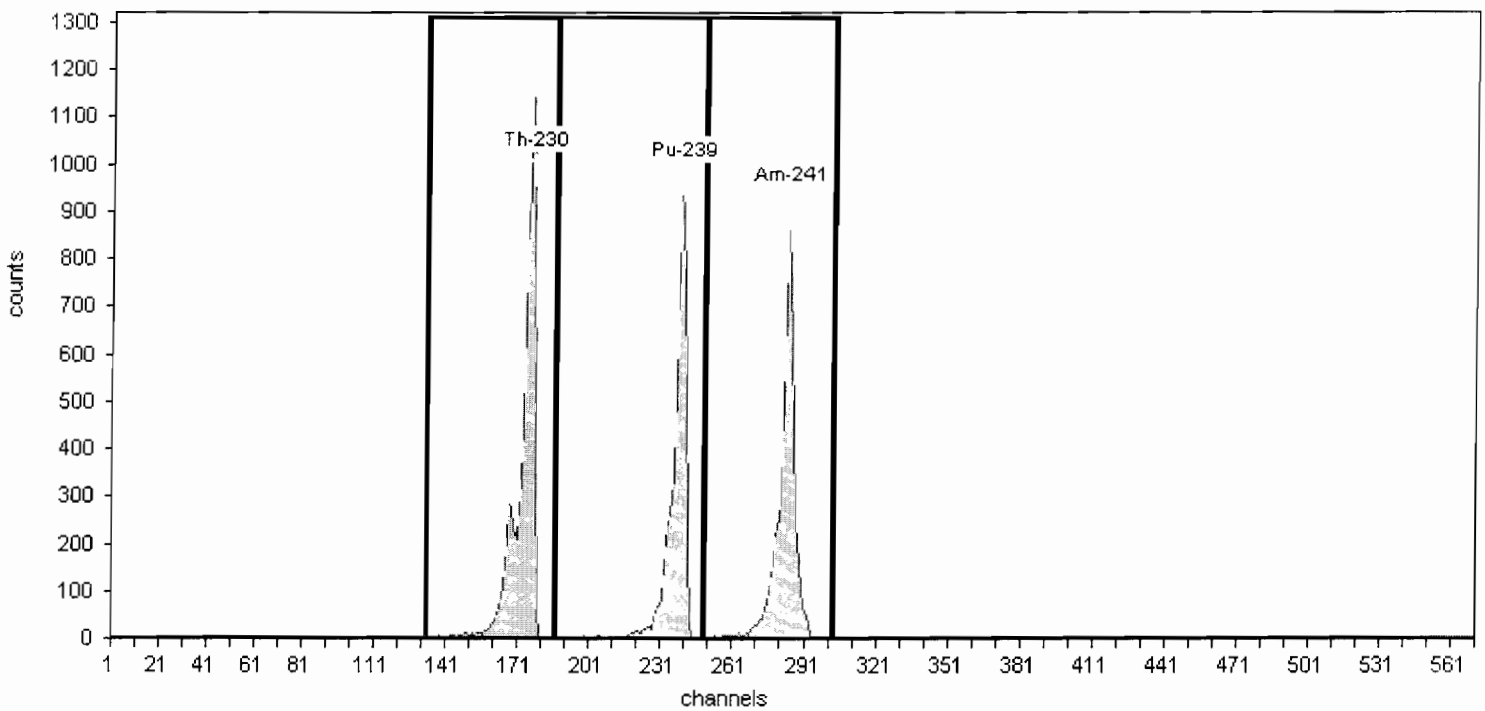
Certificate ID: 82245-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV77 , SN: 49-155N7
Acquisition Start Date: 6/2/2011 5:48:21PM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 27.42% +/- 0.50% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,678.00	111.30
Pu-239	240	5.16	186	249	5,361.00	89.35
Am-241	284	5.49	249	303	5,425.00	90.42

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:56:36PM 7/25/2011

Calibration

Name: May2011_AV78
Description:
Detector: AV78

Calibration Date: 6/2/2011 11:18:45AM
Analyst: 60040

Source Info

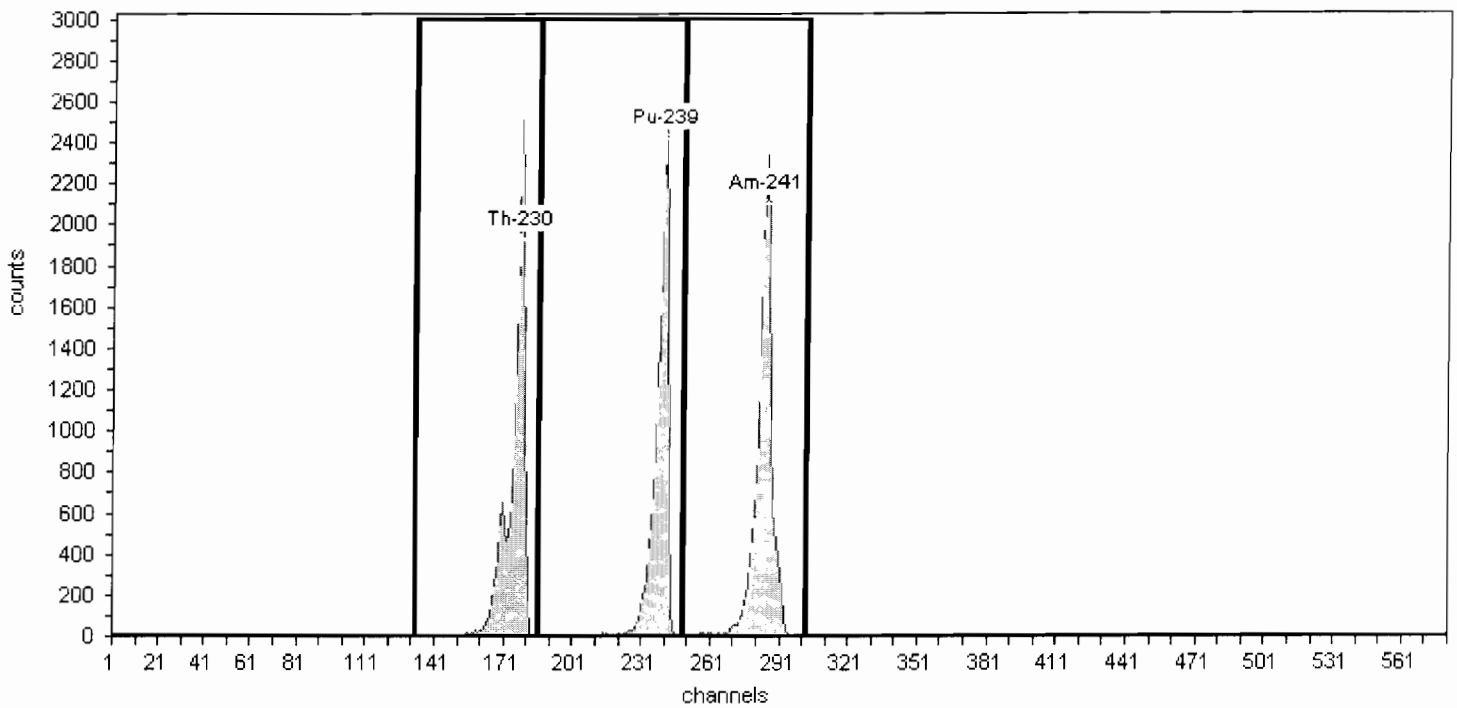
Certificate ID: 82247-334
Prepared by: Analytics

Certification Date: 6/10/2010 12:00:00PM
Description:

Acquisition

Detector: AV78 , SN: 46-033FF4
Acquisition Start Date: 6/2/2011 8:32:37AM
Live Time: 140.00 min.
Real Time: 140.06 min.
Efficiency: 27.67% +/- 0.36% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	14,300.00	102.14
Pu-239	240	5.16	186	249	13,607.00	97.19
Am-241	284	5.49	249	303	14,616.00	104.40

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:56:42PM 7/25/2011

Calibration

Name: June2011_AV78_ICV
Description:
Detector: AV78

Calibration Date: 6/2/2011 6:59:12PM
Analyst: 60040

Source Info

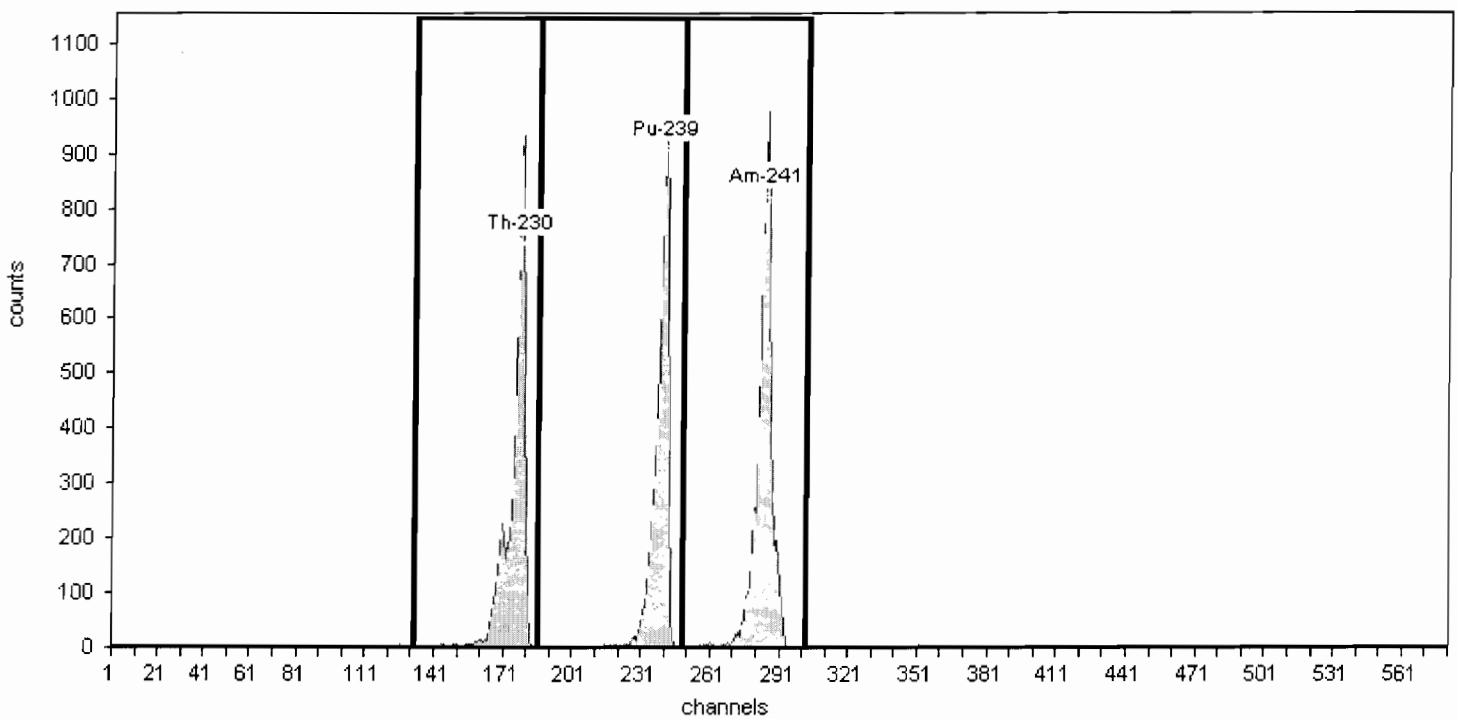
Certificate ID: 82246-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV78 , SN: 46-033FF4
Acquisition Start Date: 6/2/2011 5:54:07PM
Live Time: 60.00 min.
Real Time: 60.02 min.
Efficiency: 26.90% +/- 0.50% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,352.00	89.20
Pu-239	240	5.16	186	249	5,231.00	87.18
Am-241	284	5.49	249	303	5,807.00	96.78

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:56:50PM 7/25/2011

Calibration

Name: June2011_AV79c
Description:
Detector: AV79

Calibration Date: 6/29/2011 3:57:04PM
Analyst: 60040

Source Info

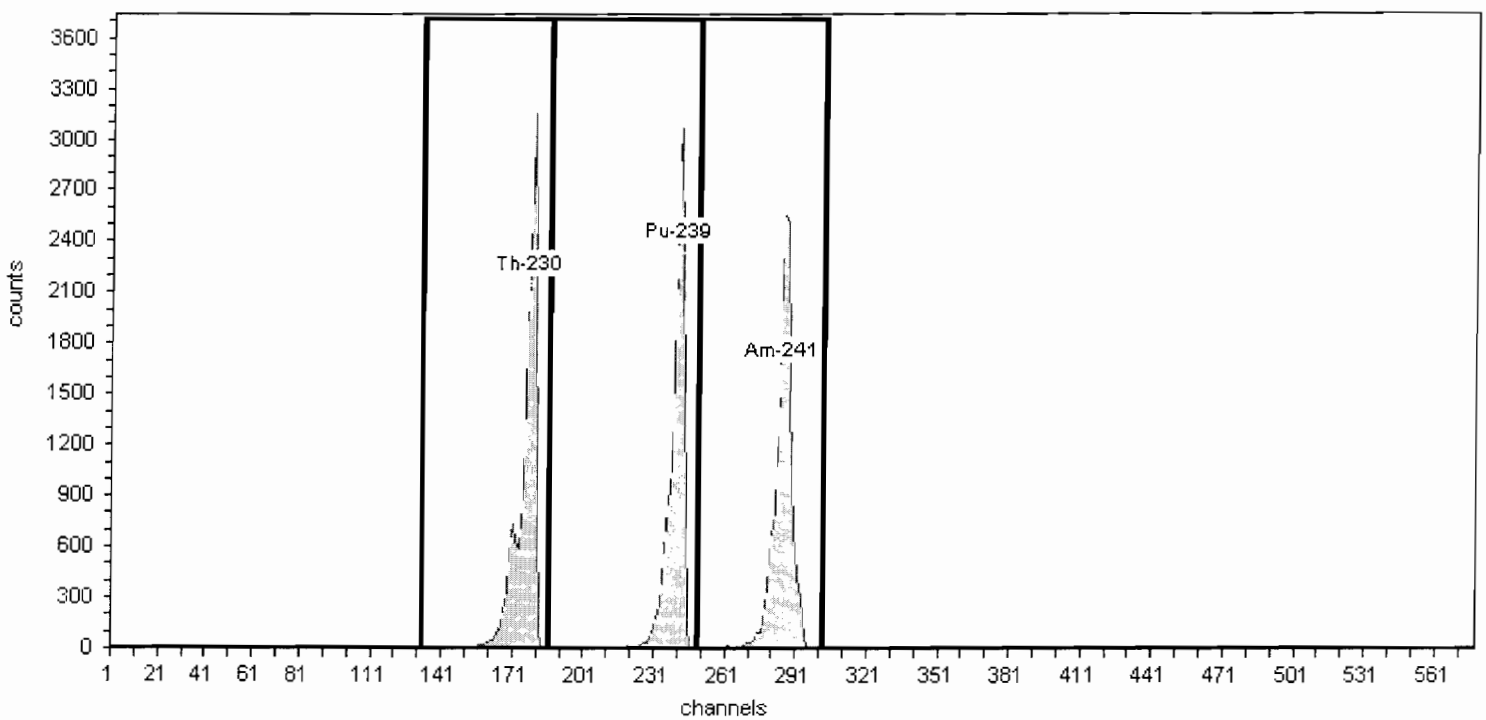
Certificate ID: 82232-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV79 , SN: 46-033Q5
Acquisition Start Date: 6/29/2011 1:27:48PM
Live Time: 140.00 min.
Real Time: 140.03 min.
Efficiency: 28.34% +/- 0.31% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	17,973.00	128.38
Pu-239	240	5.16	186	249	17,095.00	122.11
Am-241	284	5.49	249	303	17,421.00	124.44

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
12:56:55PM 7/25/2011

Calibration

Name: June2011_AV79c_ICV
Description:
Detector: AV79

Calibration Date: 6/29/2011 5:16:27PM
Analyst: 60040

Source Info

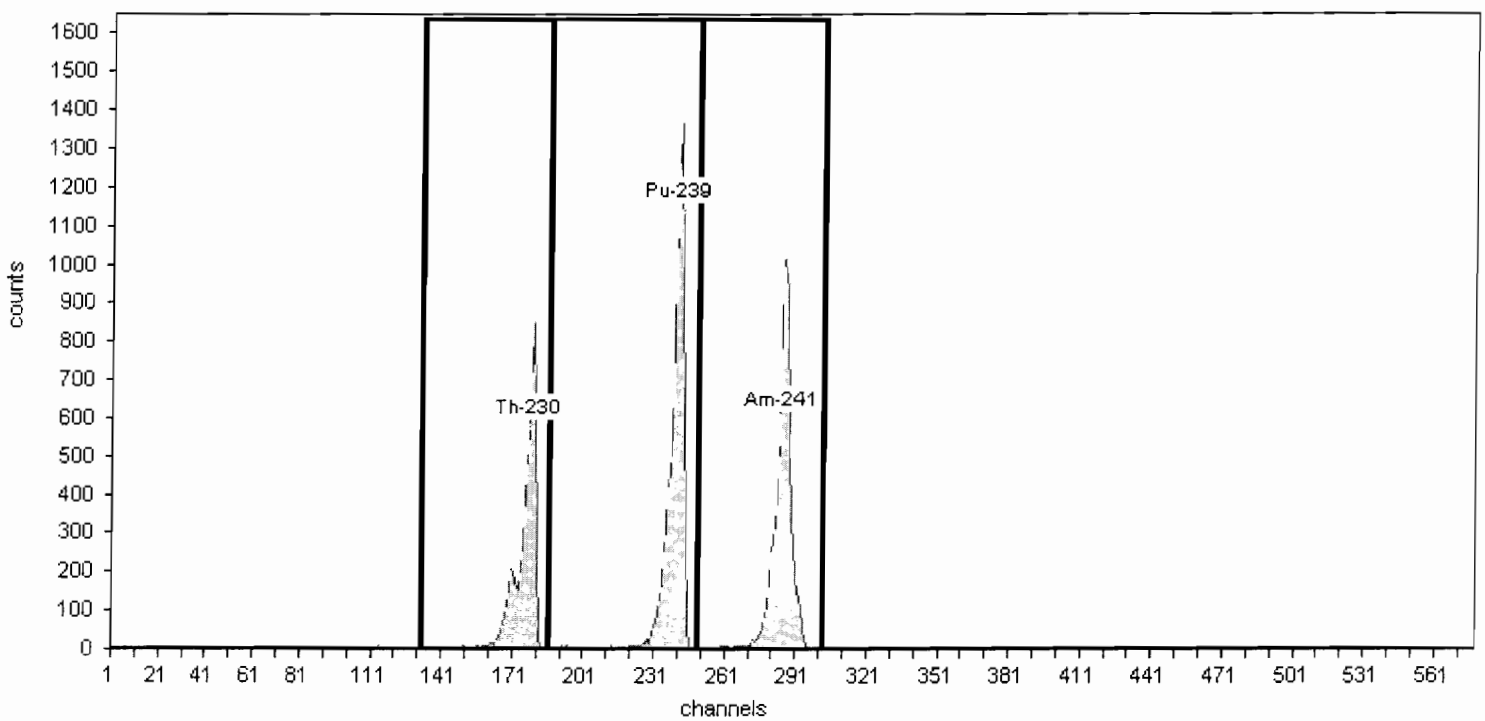
Certificate ID: 63509A-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:00PM
Description:

Acquisition

Detector: AV79 , SN: 46-033Q5
Acquisition Start Date: 6/29/2011 4:12:00PM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 27.03% +/- 0.40% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	4,934.00	82.23
Pu-239	240	5.16	186	249	7,738.00	128.97
Am-241	284	5.49	249	303	6,347.00	105.78

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Yearly Calibrations
Alpha Vision
February 2012
AV1-146

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV1						
Dec2011_AV1	12/15/2011 9:30:49 AM	82232-334	0.2769	Pass		
AV2						
Dec2011_AV2	12/15/2011 9:31:52 AM	82233-334	0.2696	Pass		
AV3						
June2011_AV3	6/1/2011 2:07:22 PM	63508A-334	0.2671	Pass		
AV4						
June2011_AV4	6/1/2011 2:07:26 PM	63509A-334	0.2679	Pass		
AV6						
June2011_AV6	6/1/2011 2:08:00 PM	82233-334	0.2795	Pass		
AV7						
June2011_AV7	6/1/2011 2:08:04 PM	82234-334	0.2763	Pass		
AV8						
June2011_AV8	6/1/2011 2:08:08 PM	82235-334	0.2799	Pass		
AV9						
Feb2012_AV9a	2/22/2012 5:00:30 PM	82240-334	0.2776	Pass		
Feb2012_AV9a_ICV	2/22/2012 8:32:32 PM	82236-334	0.2761	Pass	99.4615	Pass
AV10						
Feb2012_AV10a	2/22/2012 8:32:27 PM	82241-334	0.2709	Pass		
Feb2012_AV10a_ICV	2/23/2012 11:15:43 AM	82237-334	0.2717	Pass	100.292	Pass
AV11						
Dec2011_AV11	12/15/2011 1:33:27 PM	82242-334	0.2749	Pass		
AV12						
Feb2012_AV12a	2/22/2012 5:00:57 PM	82243-334	0.2682	Pass		
Feb2012_AV12a_ICV	2/22/2012 8:32:35 PM	82238-334	0.2707	Pass	100.940	Pass
AV13						
June2011_AV13a	6/1/2011 2:12:53 PM	82240-334	0.2795	Pass		
AV14						
Dec2011_AV14	12/15/2011 9:32:53 AM	82245-334	0.2606	Pass		
AV15						
June2011_AV15	6/1/2011 2:13:10 PM	82242-334	0.2731	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV16						
Feb2012_AV16a	2/22/2012 5:01:24 PM	82247-334	0.2769	Pass		
Feb2012_AV16a_ICV	2/22/2012 6:32:38 PM	82243-334	0.2707	Pass	97.7705	Pass
AV17						
June2011A_AV17	6/10/2011 2:02:28 PM	82244-334	0.2619	Pass		
AV18						
Feb2012_AV18a	2/22/2012 5:01:33 PM	82233-334	0.2699	Pass		
Feb2012_AV18a_ICV	2/22/2012 6:32:42 PM	82247-334	0.2566	Pass	95.0864	Pass
AV19						
Dec2011_AV19	12/6/2011 9:35:31 AM	82234-334	0.2724	Pass		
AV20						
June2011_AV20	6/1/2011 2:13:04 PM	82247-334	0.2701	Pass		
AV21						
June2011_AV21b	6/29/2011 3:56:43 PM	63508A-334	0.2596	Pass		
AV22						
Dec2011_AV22	2/21/2012 2:57:59 PM	82237-334	0.2680	Pass		
AV23						
June2011_AV23	6/2/2011 6:09:19 AM	63508A-334	0.2563	Pass		
AV24						
Dec2011_AV24	12/15/2011 9:33:47 AM	82240-334	0.2717	Pass		
AV43						
June2011A_AV43	6/20/2011 1:52:02 AM	82232-334	0.2786	Pass		
AV44						
June2011A_AV44	6/20/2011 8:43:44 AM	82233-334	0.2708	Pass		
AV45						
June2011_AV45	6/2/2011 6:09:33 AM	82234-334	0.2811	Pass		
AV46						
February2012_AV46	2/24/2012 9:01:09 AM	82244-334	0.2721	Pass		
Feb2012_AV46_ICV	2/24/2012 12:25:10 PM	82236-334	0.2768	Pass	101.742	Pass
AV47						
June2011A_AV47	6/20/2011 8:43:55 AM	82236-334	0.2691	Pass		
AV48						
June2011A_AV48	2/21/2012 2:58:50 PM	82237-334	0.2748	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV49						
June2011_AV49	6/2/2011 6:09:47 AM	82238-334	0.2849	Pass		
AV50						
February2012_AV50	2/24/2012 9:01:31 AM	82232-334	0.2822	Pass		
Feb2012_AV50_ICV	2/24/2012 12:25:26 PM	82240-334	0.2783	Pass	98.6252	Pass
AV51						
June2011_AV51	6/2/2011 6:09:53 AM	82240-334	0.2771	Pass		
AV52						
June2011_AV52	6/2/2011 6:09:56 AM	82241-334	0.2870	Pass		
AV53						
Dec2011_AV53	12/15/2011 9:35:01 AM	82235-334	0.2846	Pass		
AV54						
June2011_AV54	6/2/2011 6:10:00 AM	82243-334	0.2719	Pass		
AV55						
June2011A_AV55	6/20/2011 8:44:19 AM	82244-334	0.2685	Pass		
AV56						
Dec2011_AV56	12/15/2011 9:36:08 AM	82238-334	0.2691	Pass		
AV57						
Dec2011_AV57	12/13/2011 9:33:31 AM	82240-334	0.2792	Pass		
AV58						
February2012_AV58	2/24/2012 9:01:54 AM	82241-334	0.2829	Pass		
Feb2012_AV58_ICV	2/24/2012 12:25:49 PM	63507-334	0.2651	Pass	93.6999	Fail
Feb2012_AV58a_ICV	2/24/2012 3:16:31 PM	82232-334	0.2863	Pass	101.213	Pass
Feb2012_AV58b_ICV	2/24/2012 4:28:08 PM	82232-334	0.2853	Pass	100.844	Pass
AV59						
February2012_AV59	2/24/2012 9:02:17 AM	82242-334	0.2794	Pass		
Feb2012_AV59_ICV	2/24/2012 12:26:03 PM	63508A-334	0.2697	Pass	96.5361	Pass
AV60						
May2011_AV60	6/2/2011 11:03:44 AM	63507-334	0.2647	Pass		
AV61						
June2011_AV61	6/20/2011 2:14:49 PM	63508A-334	0.2663	Pass		
AV62						
May2011_AV62	6/2/2011 11:15:48 AM	63509A-334	0.2723	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV63						
Feb2012_AV63	2/23/2012 4:05:57 PM	82246-334	0.2686	Pass		
Feb2012_AV63_ICV	2/23/2012 5:15:45 PM	82234-334	0.2798	Pass	104.191	Pass
AV64						
May2011_AV64	6/2/2011 11:16:28 AM	82233-334	0.2832	Pass		
AV65						
Feb2012_AV65	2/23/2012 4:06:15 PM	82232-334	0.2841	Pass		
Feb2012_AV65_ICV	2/23/2012 5:15:50 PM	82236-334	0.2714	Pass	95.5197	Pass
AV66						
Dec2011_AV66	12/13/2011 9:35:41 AM	82233-334	0.2772	Pass		
AV67						
May2011_AV67	6/2/2011 11:17:07 AM	82236-334	0.2930	Pass		
AV68						
May2011_AV68	2/21/2012 2:59:22 PM	82237-334	0.2733	Pass		
AV69						
June2011_AV69	6/21/2011 2:25:40 PM	82238-334	0.2749	Pass		
AV70						
June2011_AV70	6/21/2011 2:26:58 PM	82239-334	0.2763	Pass		
AV71						
May2011_AV71	6/2/2011 11:17:45 AM	82240-334	0.2741	Pass		
AV72						
May2011_AV72	6/2/2011 11:17:59 AM	82241-334	0.2892	Pass		
AV73						
Dec2011_AV73	12/16/2011 2:11:57 PM	82241-334	0.2786	Pass		
AV74						
Dec2011_AV74b	12/13/2011 12:09:06 PM	82242-334	0.2738	Pass		
AV75						
May2011_AV75	6/2/2011 11:18:19 AM	82244-334	0.2642	Pass		
AV77						
May2011_AV77	6/2/2011 11:18:32 AM	82246-334	0.2664	Pass		
AV78						
May2011_AV78	6/2/2011 11:18:45 AM	82247-334	0.2787	Pass		
AV79						
June2011_AV79c	6/29/2011 3:57:04 PM	82232-334	0.2634	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency (20-32%)	Recov (+/-5%)
AV80 May2011_AV80	6/10/2011 5:01:32 PM	63507-334	0.2579	Pass
AV81 Dec2011_AV81	12/15/2011 12:13:48 PM	82233-334	0.2814	Pass
AV82 May2011_AV82	6/28/2011 9:27:42 PM	63509A-334	0.2676	Pass
AV83 May2011_AV83	6/28/2011 9:28:42 PM	82232-334	0.2783	Pass
AV84 May2011_AV84	6/28/2011 9:29:52 PM	82233-334	0.2740	Pass
AV85 May2011_AV85	6/28/2011 9:30:57 PM	82234-334	0.2852	Pass
AV86 May2011_AV86	6/28/2011 9:31:44 PM	82235-334	0.2811	Pass
AV87 June2011_AV87	6/21/2011 2:25:24 PM	82236-334	0.2944	Pass
AV88 May2011_AV88	2/21/2012 2:59:57 PM	82237-334	0.2736	Pass
AV89 May2011_AV89	6/2/2011 11:21:41 AM	82238-334	0.2698	Pass
AV90 May2011_AV90	6/28/2011 9:34:16 PM	82239-334	0.2753	Pass
AV92 May2011_AV92	6/28/2011 9:35:11 PM	82241-334	0.2775	Pass
AV93 May2011_AV93	6/10/2011 5:05:03 PM	82242-334	0.2772	Pass
AV94 June2011_AV94a	6/29/2011 3:57:09 PM	82247-334	0.2751	Pass
AV95 June2011_AV95b	6/30/2011 8:32:04 PM	82244-334	0.2663	Pass
AV96 June2011_AV96	6/21/2011 2:25:55 PM	82245-334	0.2743	Pass
AV97 May2011_AV97	6/28/2011 9:40:29 PM	82246-334	0.2715	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov	(+/-5%)
AV98 May2011_AV98	6/28/2011 9:41:09 PM	82247-334	0.2807	Pass	
AV99 Dec2011_AV99a	12/15/2011 1:34:42 PM	82236-334	0.2681	Pass	
AV100 June2011_AV100	6/10/2011 2:41:33 PM	63507-334	0.2630	Pass	
AV101 June2011_AV101	6/10/2011 2:42:11 PM	63508A-334	0.2594	Pass	
AV102 June2011_AV102	6/10/2011 2:42:28 PM	63509A-334	0.2668	Pass	
AV103 June2011_AV103a	2/21/2012 3:00:31 PM	82237-334	0.2722	Pass	
AV104 June2011_AV104	6/10/2011 2:45:37 PM	82233-334	0.2711	Pass	
AV105 June2011_AV105	6/10/2011 2:48:33 PM	82234-334	0.2601	Pass	
AV106 June2011_AV106	6/10/2011 2:49:36 PM	82235-334	0.2828	Pass	
AV107 June2011_AV107	6/10/2011 2:49:58 PM	82236-334	0.2809	Pass	
AV108 Dec2011_AV108a	12/15/2011 4:14:23 PM	82246-334	0.2763	Pass	
AV109 June2011_AV109	6/10/2011 2:50:52 PM	82238-334	0.2642	Pass	
AV110 June2011_AV110	6/10/2011 2:51:15 PM	82239-334	0.2761	Pass	
AV111 June2011_AV111	6/10/2011 2:51:42 PM	82240-334	0.2742	Pass	
AV112 June2011_AV112	6/10/2011 2:52:10 PM	82241-334	0.2669	Pass	
AV113 June2011_AV113a	6/29/2011 8:19:17 PM	82247-334	0.2797	Pass	
AV114 June2011_AV114	6/10/2011 2:53:57 PM	82243-334	0.2672	Pass	

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV115 June2011_AV115	6/10/2011 2:57:31 PM	82244-334	0.2713	Pass		
AV116 May2011_AV116	6/2/2011 11:22:31 AM	82245-334	0.2802	Pass		
AV117 June2011_AV117	6/10/2011 2:54:57 PM	82246-334	0.2598	Pass		
AV118 June2011_AV118	6/10/2011 2:55:22 PM	82247-334	0.2708	Pass		
AV119 June2011_AV119a	6/29/2011 3:57:22 PM	82234-334	0.2780	Pass		
AV120 June2011_AV120	6/10/2011 2:56:12 PM	63507-334	0.2673	Pass		
AV121 June2011_AV121	6/10/2011 2:58:09 PM	63508A-334	0.2680	Pass		
AV122 June2011_AV122	6/10/2011 2:58:33 PM	63509A-334	0.2633	Pass		
AV123 June2011_AV123a	6/21/2011 2:27:18 PM	82232-334	0.2737	Pass		
AV124 June2011_AV124a	6/21/2011 2:28:12 PM	82233-334	0.2650	Pass		
AV125 June2011_AV125a	6/21/2011 2:26:25 PM	82234-334	0.2746	Pass		
AV126 June2011_AV126	6/3/2011 3:29:01 PM	82235-334	0.2754	Pass		
AV127 June2011A_AV127	6/28/2011 9:47:50 PM	82236-334	0.2756	Pass		
AV128 June2011_AV128	2/21/2012 3:01:06 PM	82237-334	0.2692	Pass		
AV130 June2011_AV130	6/3/2011 3:29:19 PM	82239-334	0.2686	Pass		
AV131 February2012_AV131	2/24/2012 9:02:44 AM	82238-334	0.2733	Pass		
Feb2012_AV131_ICV	2/24/2012 12:26:24 PM	82245-334	0.2767	Pass	101.234	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV132						
June2011_AV132a	6/30/2011 11:37:39 AM	82247-334	0.2712	Pass		
AV133						
Feb2012_AV133	2/24/2012 1:40:22 PM	82241-334	0.2654	Pass		
Feb2012_AV133_ICV	2/24/2012 3:16:36 PM	82247-334	0.2639	Pass	99.4605	Pass
AV134						
June2011_AV134	6/3/2011 3:29:39 PM	82243-334	0.2826	Pass		
AV135						
June2011_AV135	6/3/2011 3:29:47 PM	82244-334	0.2626	Pass		
AV136						
June2011_AV136	6/3/2011 3:29:51 PM	82245-334	0.2706	Pass		
AV137						
June2011_AV137	6/3/2011 3:29:43 PM	82246-334	0.2746	Pass		
AV138						
June2011_AV138	6/3/2011 3:29:55 PM	82247-334	0.2648	Pass		
AV139						
June2011_AV139a	6/29/2011 3:57:26 PM	82235-334	0.2713	Pass		
AV140						
June2011_AV140	6/3/2011 3:30:04 PM	63507-334	0.2557	Pass		
AV141						
June2011_AV141	6/3/2011 3:30:09 PM	63508A-334	0.2581	Pass		
AV142						
June2011_AV142	6/3/2011 3:30:14 PM	63509A-334	0.2631	Pass		
AV143						
Dec2011_AV143	12/15/2011 1:36:38 PM	82235-334	0.2708	Pass		
AV144						
June2011_AV144	6/10/2011 3:04:53 PM	82233-334	0.2723	Pass		
AV145						
June2011_AV145	6/10/2011 3:05:03 PM	82234-334	0.2749	Pass		
AV146						
June2011_AV146	6/10/2011 3:05:14 PM	82235-334	0.2748	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

June Alpha Spec Calibrations

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV1						
	6/1/2011 2:07:17 PM	63506-334	0.2689	Pass		
	6/1/2011 4:06:00 PM	63509A-334	0.2635	Pass	98.017	Pass
AV3						
	6/1/2011 2:07:22 PM	63508A-334	0.2671	Pass		
	6/1/2011 4:06:14 PM	63507-334	0.2659	Pass	99.539	Pass
AV4						
	6/1/2011 2:07:26 PM	63509A-334	0.2679	Pass		
	6/1/2011 4:06:27 PM	63508A-334	0.2631	Pass	98.209	Pass
AV6						
	6/1/2011 2:08:00 PM	82233-334	0.2795	Pass		
	6/1/2011 4:06:40 PM	82232-334	0.2848	Pass	101.88	Pass
AV7						
	6/1/2011 2:08:04 PM	82234-334	0.2783	Pass		
	6/1/2011 4:06:58 PM	82233-334	0.2732	Pass	98.157	Pass
AV8						
	6/1/2011 2:08:08 PM	82235-334	0.2799	Pass		
	6/1/2011 4:07:14 PM	82234-334	0.2798	Pass	99.955	Pass
AV9						
	6/1/2011 2:10:02 PM	82236-334	0.2743	Pass		
	6/1/2011 4:07:30 PM	82235-334	0.2766	Pass	100.82	Pass
AV10						
	6/1/2011 2:10:22 PM	82237-334	0.2625	Pass		
	6/1/2011 4:07:43 PM	82236-334	0.2723	Pass	103.70	Pass
AV11						
	6/10/2011 2:02:03 PM	82238-334	0.2759	Pass		
	6/10/2011 3:55:36 PM	82237-334	0.2712	Pass	98.291	Pass
AV12						
	6/1/2011 2:12:35 PM	82239-334	0.2713	Pass		
	6/1/2011 4:08:49 PM	82238-334	0.2741	Pass	101.04	Pass
AV13						
	6/1/2011 2:12:53 PM	82240-334	0.2795	Pass		
	6/1/2011 4:09:02 PM	82239-334	0.2747	Pass	98.276	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV14						
	6/10/2011 2:02:15 PM	82241-334	0.2799	Pass		
	6/10/2011 3:55:45 PM	82240-334	0.2727	Pass	97.425	Pass
AV15						
	6/1/2011 2:13:10 PM	82242-334	0.2731	Pass		
	6/1/2011 4:09:33 PM	82241-334	0.2708	Pass	99.161	Pass
AV16						
	6/1/2011 2:13:39 PM	82243-334	0.2692	Pass		
	6/1/2011 4:09:45 PM	82242-334	0.2732	Pass	101.48	Pass
AV17						
	6/10/2011 2:02:28 PM	82244-334	0.2619	Pass		
	6/10/2011 3:55:50 PM	82243-334	0.2607	Pass	99.547	Pass
AV18						
	6/1/2011 2:12:48 PM	82245-334	0.2640	Pass		
	6/1/2011 4:10:09 PM	82244-334	0.2576	Pass	97.578	Pass
AV19						
	6/10/2011 2:48:01 PM	82246-334	0.2592	Pass		
	6/20/2011 11:48:18 AM	82245-334	0.2695	Pass	103.95	Pass
AV20						
	6/1/2011 2:13:04 PM	82247-334	0.2701	Pass		
	6/1/2011 4:10:40 PM	82246-334	0.2675	Pass	99.056	Pass
AV21						
	6/29/2011 3:56:43 PM	63508A-334	0.2596	Pass		
	6/29/2011 5:11:24 PM	63507-334	0.2611	Pass	100.59	Pass
AV22						
	6/10/2011 4:38:28 PM	63507-334	0.2595	Pass		
	6/20/2011 3:03:26 PM	63506-334	0.2514	Pass	96.881	Pass
AV23						
	6/2/2011 6:09:19 AM	63508A-334	0.2563	Pass		
	6/2/2011 5:26:58 PM	63507-334	0.2560	Pass	99.882	Pass
AV24						
	6/2/2011 6:09:22 AM	63509A-334	0.2639	Pass		
	6/2/2011 5:27:05 PM	63508A-334	0.2616	Pass	99.111	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV43						
	6/20/2011 1:52:02 AM	82232-334	0.2786	Pass		
	6/20/2011 4:09:28 AM	63509A-334	0.2684	Pass	96.334	Pass
AV44						
	6/20/2011 8:43:44 AM	82233-334	0.2708	Pass		
	6/20/2011 12:55:44 PM	82232-334	0.2760	Pass	101.91	Pass
AV45						
	6/2/2011 6:09:33 AM	82234-334	0.2811	Pass		
	6/2/2011 5:27:08 PM	82233-334	0.2743	Pass	97.568	Pass
AV46						
	6/2/2011 6:09:37 AM	82235-334	0.2842	Pass		
	6/2/2011 5:27:12 PM	82234-334	0.2875	Pass	101.13	Pass
AV47						
	6/20/2011 8:43:55 AM	82236-334	0.2691	Pass		
	6/20/2011 12:55:48 PM	82235-334	0.2785	Pass	103.49	Pass
AV48						
	6/20/2011 8:44:03 AM	82237-334	0.2671	Pass		
	6/28/2011 9:18:29 PM	82236-334	0.2720	Pass	101.82	Pass
AV49						
	6/2/2011 6:09:47 AM	82238-334	0.2849	Pass		
	6/2/2011 5:27:16 PM	82237-334	0.2745	Pass	96.349	Pass
AV50						
	6/20/2011 8:44:13 AM	82239-334	0.2730	Pass		
	6/20/2011 12:55:56 PM	82238-334	0.2754	Pass	100.88	Pass
AV51						
	6/2/2011 6:09:53 AM	82240-334	0.2771	Pass		
	6/2/2011 5:27:20 PM	82239-334	0.2704	Pass	97.595	Pass
AV52						
	6/2/2011 6:09:56 AM	82241-334	0.2870	Pass		
	6/2/2011 5:27:24 PM	82240-334	0.2893	Pass	100.78	Pass
AV54						
	6/2/2011 6:10:00 AM	82243-334	0.2719	Pass		
	6/2/2011 5:27:29 PM	82242-334	0.2763	Pass	101.63	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV55						
	6/20/2011 8:44:19 AM	82244-334	0.2685	Pass		
	6/20/2011 12:56:00 PM	82243-334	0.2693	Pass	100.32	Pass
AV57						
	6/2/2011 6:10:07 AM	82246-334	0.2733	Pass		
	6/2/2011 5:27:35 PM	82245-334	0.2745	Pass	100.46	Pass
AV58						
	6/2/2011 6:10:11 AM	82247-334	0.2842	Pass		
	6/2/2011 5:27:39 PM	82246-334	0.2740	Pass	96.420	Pass
AV59						
	6/29/2011 3:56:50 PM	63509A-334	0.2722	Pass		
	6/29/2011 5:11:40 PM	63508A-334	0.2694	Pass	98.981	Pass
AV60						
	6/2/2011 11:03:44 AM	63507-334	0.2647	Pass		
	6/2/2011 5:27:47 PM	63506-334	0.2570	Pass	97.082	Pass
AV61						
	6/20/2011 2:14:49 PM	63508A-334	0.2663	Pass		
	6/20/2011 3:32:40 PM	63507-334	0.2635	Pass	98.951	Pass
AV62						
	6/2/2011 11:15:48 AM	63509A-334	0.2723	Pass		
	6/2/2011 6:59:03 PM	63508A-334	0.2697	Pass	99.053	Pass
AV63						
	6/2/2011 11:16:12 AM	82232-334	0.2767	Pass		
	6/2/2011 5:27:53 PM	63509A-334	0.2637	Pass	95.302	Pass
AV64						
	6/2/2011 11:16:26 AM	82233-334	0.2832	Pass		
	6/2/2011 5:27:57 PM	82232-334	0.2867	Pass	101.23	Pass
AV65						
	6/2/2011 11:16:39 AM	82234-334	0.2798	Pass		
	6/2/2011 6:58:45 PM	82233-334	0.2773	Pass	99.094	Pass
AV66						
	6/2/2011 11:16:51 AM	82235-334	0.2808	Pass		
	6/2/2011 6:58:50 PM	82234-334	0.2803	Pass	99.816	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV67						
	6/2/2011 11:17:07 AM	82236-334	0.2930	Pass		
	6/2/2011 5:28:01 PM	82235-334	0.2955	Pass	100.85	Pass
AV68						
	6/2/2011 11:17:18 AM	82237-334	0.2658	Pass		
	6/2/2011 5:28:05 PM	82236-334	0.2767	Pass	104.12	Pass
AV69						
	6/21/2011 2:25:40 PM	82238-334	0.2749	Pass		
	6/23/2011 1:18:22 PM	82237-334	0.2651	Pass	96.439	Pass
AV70						
	6/21/2011 2:26:58 PM	82239-334	0.2763	Pass		
	6/22/2011 2:20:23 AM	82238-334	0.2700	Pass	97.724	Pass
AV71						
	6/2/2011 11:17:45 AM	82240-334	0.2741	Pass		
	6/2/2011 6:59:06 PM	82239-334	0.2735	Pass	99.757	Pass
AV72						
	6/2/2011 11:17:59 AM	82241-334	0.2892	Pass		
	6/2/2011 6:59:09 PM	82240-334	0.2876	Pass	99.447	Pass
AV73						
	6/20/2011 2:14:44 PM	82242-334	0.2887	Pass		
	6/20/2011 3:32:43 PM	82241-334	0.2772	Pass	96.029	Pass
AV74						
	6/21/2011 2:25:05 PM	82243-334	0.2715	Pass		
	6/22/2011 2:21:05 AM	82242-334	0.2759	Pass	101.65	Pass
AV75						
	6/2/2011 11:18:19 AM	82244-334	0.2642	Pass		
	6/2/2011 5:28:13 PM	82243-334	0.2646	Pass	100.16	Pass
AV77						
	6/2/2011 11:18:32 AM	82246-334	0.2664	Pass		
	6/2/2011 6:58:56 PM	82245-334	0.2742	Pass	102.93	Pass
AV78						
	6/2/2011 11:18:45 AM	82247-334	0.2767	Pass		
	6/2/2011 6:59:12 PM	82246-334	0.2690	Pass	97.223	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV79						
	6/29/2011 3:57:04 PM	82232-334	0.2834	Pass		
	6/29/2011 5:16:27 PM	63509A-334	0.2703	Pass	95.357	Pass
AV80						
	6/10/2011 5:01:32 PM	63507-334	0.2579	Pass		
	6/10/2011 5:01:49 PM	63506-334	0.2530	Pass	98.103	Pass
AV82						
	6/28/2011 9:27:42 PM	63509A-334	0.2676	Pass		
	6/28/2011 9:28:02 PM	63508A-334	0.2631	Pass	98.329	Pass
AV83						
	6/28/2011 9:28:42 PM	82232-334	0.2783	Pass		
	6/28/2011 9:29:04 PM	63509A-334	0.2700	Pass	97.024	Pass
AV84						
	6/28/2011 9:29:52 PM	82233-334	0.2740	Pass		
	6/28/2011 9:30:12 PM	82232-334	0.2822	Pass	103.00	Pass
AV85						
	6/28/2011 9:30:57 PM	82234-334	0.2852	Pass		
	6/28/2011 9:31:17 PM	82233-334	0.2784	Pass	97.612	Pass
AV86						
	6/28/2011 9:31:44 PM	82235-334	0.2811	Pass		
	6/28/2011 9:32:01 PM	82234-334	0.2800	Pass	99.596	Pass
AV87						
	6/21/2011 2:25:24 PM	82236-334	0.2944	Pass		
	6/22/2011 2:21:15 AM	82235-334	0.2987	Pass	101.42	Pass
AV88						
	6/28/2011 9:33:11 PM	82237-334	0.2657	Pass		
	6/28/2011 9:33:31 PM	82236-334	0.2783	Pass	104.76	Pass
AV89						
	6/2/2011 11:21:41 AM	82238-334	0.2698	Pass		
	6/2/2011 6:58:53 PM	82237-334	0.2724	Pass	100.97	Pass
AV90						
	6/28/2011 9:34:16 PM	82239-334	0.2753	Pass		
	6/28/2011 9:34:38 PM	82238-334	0.2804	Pass	101.83	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV92						
	6/28/2011 9:35:11 PM	82241-334	0.2775	Pass		
	6/28/2011 9:35:31 PM	82240-334	0.2758	Pass	99.357	Pass
AV93						
	6/10/2011 5:05:03 PM	82242-334	0.2772	Pass		
	6/10/2011 5:05:28 PM	82241-334	0.2694	Pass	97.178	Pass
AV94						
	6/29/2011 3:57:09 PM	82247-334	0.2751	Pass		
	6/29/2011 5:16:31 PM	82246-334	0.2690	Pass	97.805	Pass
AV95						
	6/30/2011 8:32:04 PM	82244-334	0.2663	Pass		
	7/1/2011 9:11:14 AM	82243-334	0.2666	Pass	100.11	Pass
AV96						
	6/21/2011 2:25:55 PM	82245-334	0.2743	Pass		
	6/22/2011 2:21:15 AM	82244-334	0.2710	Pass	98.792	Pass
AV97						
	6/28/2011 9:40:29 PM	82246-334	0.2715	Pass		
	6/28/2011 9:40:49 PM	82245-334	0.2753	Pass	101.41	Pass
AV98						
	6/28/2011 9:41:09 PM	82247-334	0.2807	Pass		
	6/28/2011 9:41:29 PM	82246-334	0.2744	Pass	97.774	Pass
AV99						
	6/29/2011 3:57:13 PM	82233-334	0.2698	Pass		
	6/29/2011 5:16:35 PM	82232-334	0.2786	Pass	103.27	Pass
AV100						
	6/10/2011 2:41:33 PM	63507-334	0.2630	Pass		
	6/10/2011 2:57:02 PM	63506-334	0.2576	Pass	97.938	Pass
AV101						
	6/10/2011 2:42:11 PM	63508A-334	0.2594	Pass		
	6/10/2011 2:42:00 PM	63507-334	0.2644	Pass	101.90	Pass
AV102						
	6/10/2011 2:42:28 PM	63509A-334	0.2668	Pass		
	6/10/2011 2:42:43 PM	63508A-334	0.2635	Pass	98.782	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV103						
	6/29/2011 3:57:18 PM	82237-334	0.2644	Pass		
	6/29/2011 8:19:11 PM	82236-334	0.2718	Pass	102.81	Pass
AV104						
	6/10/2011 2:45:37 PM	82233-334	0.2711	Pass		
	6/10/2011 2:46:11 PM	82232-334	0.2737	Pass	100.94	Pass
AV105						
	6/10/2011 2:48:33 PM	82234-334	0.2601	Pass		
	6/10/2011 2:48:49 PM	82233-334	0.2562	Pass	98.471	Pass
AV106						
	6/10/2011 2:49:36 PM	82235-334	0.2828	Pass		
	6/10/2011 2:49:46 PM	82234-334	0.2796	Pass	98.873	Pass
AV107						
	6/10/2011 2:49:58 PM	82236-334	0.2809	Pass		
	6/10/2011 2:50:11 PM	82235-334	0.2786	Pass	99.167	Pass
AV108						
	6/10/2011 2:50:25 PM	82237-334	0.2880	Pass		
	6/10/2011 2:50:39 PM	82236-334	0.2848	Pass	98.912	Pass
AV109						
	6/10/2011 2:50:52 PM	82238-334	0.2642	Pass		
	6/10/2011 2:51:04 PM	82237-334	0.2699	Pass	102.16	Pass
AV110						
	6/10/2011 2:51:15 PM	82239-334	0.2761	Pass		
	6/10/2011 2:51:31 PM	82238-334	0.2723	Pass	98.639	Pass
AV111						
	6/10/2011 2:51:42 PM	82240-334	0.2742	Pass		
	6/10/2011 2:51:58 PM	82239-334	0.2698	Pass	98.397	Pass
AV112						
	6/10/2011 2:52:10 PM	82241-334	0.2689	Pass		
	6/10/2011 2:52:23 PM	82240-334	0.2662	Pass	98.990	Pass
AV113						
	6/29/2011 8:19:17 PM	82247-334	0.2797	Pass		
	6/30/2011 10:18:11 AM	82246-334	0.2733	Pass	97.694	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV114						
	6/10/2011 2:53:57 PM	82243-334	0.2672	Pass		
	6/10/2011 2:54:10 PM	82242-334	0.2759	Pass	103.28	Pass
AV115						
	6/10/2011 2:57:31 PM	82244-334	0.2713	Pass		
	6/10/2011 2:57:44 PM	82243-334	0.2721	Pass	100.29	Pass
AV116						
	6/2/2011 11:22:31 AM	82245-334	0.2802	Pass		
	6/27/2011 10:38:43 PM	82244-334	0.2729	Pass	97.394	Pass
AV117						
	6/10/2011 2:54:57 PM	82246-334	0.2598	Pass		
	6/10/2011 2:55:11 PM	82245-334	0.2656	Pass	102.23	Pass
AV118						
	6/10/2011 2:55:22 PM	82247-334	0.2708	Pass		
	6/10/2011 2:55:36 PM	82246-334	0.2681	Pass	98.996	Pass
AV119						
	6/29/2011 3:57:22 PM	82234-334	0.2780	Pass		
	6/29/2011 5:16:45 PM	82233-334	0.2724	Pass	98.002	Pass
AV120						
	6/10/2011 2:56:12 PM	63507-334	0.2673	Pass		
	6/10/2011 2:56:27 PM	63506-334	0.2588	Pass	96.816	Pass
AV121						
	6/10/2011 2:58:09 PM	63508A-334	0.2680	Pass		
	6/10/2011 2:58:22 PM	63507-334	0.2663	Pass	99.376	Pass
AV122						
	6/10/2011 2:58:33 PM	63509A-334	0.2633	Pass		
	6/10/2011 2:58:47 PM	63508A-334	0.2595	Pass	98.546	Pass
AV123						
	6/21/2011 2:27:18 PM	82232-334	0.2737	Pass		
	6/22/2011 3:45:08 AM	82241-334	0.2847	Pass	104.01	Pass
AV124						
	6/21/2011 2:26:12 PM	82233-334	0.2650	Pass		
	6/22/2011 2:21:19 AM	82232-334	0.2722	Pass	102.70	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV125						
	6/21/2011 2:26:25 PM	82234-334	0.2746	Pass		
	6/22/2011 2:21:37 AM	82233-334	0.2671	Pass	97.276	Pass
AV126						
	6/3/2011 3:29:01 PM	82235-334	0.2754	Pass		
	6/10/2011 3:00:12 PM	82234-334	0.2754	Pass	100.00	Pass
AV127						
	6/28/2011 9:47:50 PM	82236-334	0.2755	Pass		
	6/23/2011 8:58:08 AM	82235-334	0.2802	Pass	101.68	Pass
AV128						
	6/3/2011 3:29:09 PM	82237-334	0.2615	Pass		
	6/10/2011 3:00:38 PM	82236-334	0.2737	Pass	104.65	Pass
AV130						
	6/3/2011 3:29:19 PM	82239-334	0.2686	Pass		
	6/10/2011 3:01:20 PM	82238-334	0.2696	Pass	100.39	Pass
AV131						
	6/3/2011 3:29:24 PM	82240-334	0.2766	Pass		
	6/10/2011 3:01:46 PM	82239-334	0.2724	Pass	98.466	Pass
AV132						
	6/30/2011 11:37:39 AM	82247-334	0.2712	Pass		
	6/30/2011 12:41:22 PM	82246-334	0.2649	Pass	97.648	Pass
AV133						
	6/30/2011 8:32:09 PM	82234-334	0.2707	Pass		
	7/1/2011 9:11:19 AM	82233-334	0.2695	Pass	99.548	Pass
AV134						
	6/3/2011 3:29:39 PM	82243-334	0.2826	Pass		
	6/10/2011 3:02:44 PM	82242-334	0.2790	Pass	98.713	Pass
AV135						
	6/3/2011 3:29:47 PM	82244-334	0.2626	Pass		
	6/10/2011 3:02:54 PM	82243-334	0.2675	Pass	101.88	Pass
AV136						
	6/3/2011 3:29:51 PM	82245-334	0.2706	Pass		
	6/10/2011 3:03:17 PM	82244-334	0.2643	Pass	97.639	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV137						
	6/3/2011 3:29:43 PM	82246-334	0.2746	Pass		
	6/10/2011 3:03:29 PM	82245-334	0.2844	Pass	103.57	Pass
AV138						
	6/3/2011 3:29:55 PM	82247-334	0.2648	Pass		
	6/10/2011 3:03:43 PM	82246-334	0.2609	Pass	98.539	Pass
AV139						
	6/29/2011 3:57:26 PM	82235-334	0.2713	Pass		
	6/29/2011 5:16:50 PM	82234-334	0.2747	Pass	101.26	Pass
AV140						
	6/3/2011 3:30:04 PM	63507-334	0.2557	Pass		
	6/10/2011 3:04:11 PM	63506-334	0.2506	Pass	98.005	Pass
AV141						
	6/3/2011 3:30:09 PM	63508A-334	0.2581	Pass		
	6/10/2011 3:04:21 PM	63507-334	0.2577	Pass	99.845	Pass
AV142						
	6/3/2011 3:30:14 PM	63509A-334	0.2631	Pass		
	6/10/2011 3:04:32 PM	63508A-334	0.2620	Pass	99.586	Pass
AV143						
	6/10/2011 3:04:43 PM	82232-334	0.2740	Pass		
	6/10/2011 3:05:29 PM	63509A-334	0.2649	Pass	96.698	Pass
AV144						
	6/10/2011 3:04:53 PM	82233-334	0.2723	Pass		
	6/10/2011 3:05:38 PM	82232-334	0.2825	Pass	103.75	Pass
AV145						
	6/10/2011 3:05:03 PM	82234-334	0.2749	Pass		
	6/10/2011 3:05:47 PM	82233-334	0.2679	Pass	97.443	Pass
AV146						
	6/10/2011 3:05:14 PM	82235-334	0.2748	Pass		
	6/10/2011 3:05:57 PM	82234-334	0.2795	Pass	101.70	Pass

June Alpha Spec Calibrations

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV147						
	6/14/2011 9:47:31 AM	82236-334	0.2858	Pass		
	6/14/2011 9:48:52 AM	82247-334	0.2876	Pass	100.65	Pass
AV148						
	6/21/2011 2:32:02 PM	82237-334	0.2655	Pass		
	6/21/2011 2:32:43 PM	82236-334	0.2752	Pass	103.63	Pass
AV149						
	6/21/2011 2:34:00 PM	82238-334	0.2822	Pass		
	6/21/2011 2:34:33 PM	82237-334	0.2743	Pass	97.212	Pass
AV151						
	6/21/2011 2:36:24 PM	82240-334	0.2779	Pass		
	6/21/2011 2:36:47 PM	82239-334	0.2757	Pass	99.212	Pass
AV152						
	6/21/2011 2:37:11 PM	82241-334	0.2700	Pass		
	6/21/2011 2:37:32 PM	82240-334	0.2698	Pass	99.948	Pass
AV153						
	6/30/2011 9:05:44 AM	63508A-334	0.2610	Pass		
	6/30/2011 10:17:32 AM	63507-334	0.2585	Pass	99.026	Pass
AV154						
	6/21/2011 2:39:31 PM	82243-334	0.2680	Pass		
	6/21/2011 2:40:03 PM	82242-334	0.2722	Pass	101.56	Pass
AV155						
	6/27/2011 9:21:16 PM	82244-334	0.2651	Pass		
	6/27/2011 9:22:09 PM	82243-334	0.2628	Pass	99.134	Pass
AV156						
	6/27/2011 9:22:55 PM	82245-334	0.2721	Pass		
	6/27/2011 9:23:40 PM	82244-334	0.2640	Pass	97.019	Pass
AV157						
	6/27/2011 9:24:40 PM	82246-334	0.2630	Pass		
	6/27/2011 9:25:17 PM	82245-334	0.2703	Pass	102.74	Pass
AV158						
	6/30/2011 11:40:49 AM	82235-334	0.2758	Pass		
	6/30/2011 12:51:15 PM	82234-334	0.2756	Pass	99.948	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV159						
	6/30/2011 9:06:12 AM	82236-334	0.2701	Pass		
	6/30/2011 9:06:45 AM	82235-334	0.2750	Pass	101.83	Pass
AV160						
	6/30/2011 9:07:03 AM	82237-334	0.2630	Pass		
	6/30/2011 9:07:22 AM	82236-334	0.2656	Pass	100.98	Pass
AV161						
	6/27/2011 9:29:26 PM	63508A-334	0.2652	Pass		
	6/27/2011 9:29:59 PM	63507-334	0.2604	Pass	98.212	Pass
AV162						
	6/23/2011 11:26:56 AM	63509A-334	0.2637	Pass		
	6/23/2011 1:44:04 PM	63508A-334	0.2643	Pass	100.20	Pass
AV163						
	6/15/2011 1:14:12 AM	82232-334	0.2782	Pass		
	6/27/2011 9:30:57 PM	63509A-334	0.2748	Pass	98.774	Pass
AV164						
	6/30/2011 9:07:48 AM	82241-334	0.2661	Pass		
	6/30/2011 9:08:11 AM	82240-334	0.2702	Pass	101.52	Pass
AV165						
	6/15/2011 1:14:21 AM	82234-334	0.2869	Pass		
	6/27/2011 9:32:32 PM	82233-334	0.2796	Pass	97.467	Pass
AV166						
	6/15/2011 1:14:26 AM	82235-334	0.2773	Pass		
	6/27/2011 9:33:19 PM	82234-334	0.2771	Pass	99.922	Pass
AV167						
	6/15/2011 1:14:30 AM	82236-334	0.2723	Pass		
	6/27/2011 9:34:00 PM	82235-334	0.2755	Pass	101.17	Pass
AV168						
	6/15/2011 1:14:34 AM	82237-334	0.2627	Pass		
	6/27/2011 9:34:45 PM	82236-334	0.2702	Pass	102.85	Pass
AV169						
	6/15/2011 1:14:37 AM	82238-334	0.2711	Pass		
	6/27/2011 9:35:26 PM	82237-334	0.2674	Pass	98.648	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV170						
	6/15/2011 1:14:41 AM	82239-334	0.2783	Pass		
	6/27/2011 9:36:10 PM	82238-334	0.2688	Pass	96.606	Pass
AV171						
	6/15/2011 1:14:45 AM	82240-334	0.2709	Pass		
	6/27/2011 9:37:06 PM	82239-334	0.2813	Pass	103.84	Pass
AV172						
	6/15/2011 1:14:49 AM	82241-334	0.2699	Pass		
	6/27/2011 9:37:46 PM	82240-334	0.2705	Pass	100.22	Pass
AV173						
	6/15/2011 1:14:52 AM	82242-334	0.2830	Pass		
	6/27/2011 9:38:28 PM	82241-334	0.2716	Pass	95.991	Pass
AV174						
	6/15/2011 1:14:56 AM	82243-334	0.2679	Pass		
	6/27/2011 9:39:06 PM	82242-334	0.2743	Pass	102.42	Pass
AV175						
	6/15/2011 1:15:00 AM	82244-334	0.2675	Pass		
	6/27/2011 9:39:52 PM	82243-334	0.2720	Pass	101.67	Pass
AV176						
	6/15/2011 2:15:31 AM	82245-334	0.2726	Pass		
	6/27/2011 9:40:38 PM	82244-334	0.2661	Pass	97.631	Pass
AV177						
	6/15/2011 1:15:04 AM	82246-334	0.2651	Pass		
	6/15/2011 4:19:56 AM	82245-334	0.2751	Pass	103.75	Pass
AV178						
	6/15/2011 1:15:07 AM	82247-334	0.2746	Pass		
	6/27/2011 9:41:21 PM	82246-334	0.2711	Pass	98.745	Pass
AV179						
	6/30/2011 9:08:46 AM	82237-334	0.2742	Pass		
	6/30/2011 10:17:36 AM	82236-334	0.2866	Pass	104.51	Pass
AV180						
	6/15/2011 1:15:15 AM	63507-334	0.2625	Pass		
	6/27/2011 9:43:59 PM	63506-334	0.2532	Pass	96.455	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV181						
	6/15/2011 1:15:18 AM	63508A-334	0.2611	Pass		
	6/27/2011 9:44:46 PM	63507-334	0.2587	Pass	99.069	Pass
AV182						
	6/27/2011 9:45:31 PM	63509A-334	0.2629	Pass		
	6/27/2011 9:46:14 PM	63508A-334	0.2625	Pass	99.822	Pass
AV183						
	6/20/2011 10:52:50 PM	82232-334	0.2795	Pass		
	6/27/2011 9:46:57 PM	63509A-334	0.2671	Pass	95.537	Pass
AV184						
	6/20/2011 10:52:55 PM	82233-334	0.2772	Pass		
	6/27/2011 9:47:46 PM	82232-334	0.2799	Pass	100.95	Pass
AV185						
	6/20/2011 10:52:58 PM	82234-334	0.2823	Pass		
	6/27/2011 9:48:33 PM	82233-334	0.2741	Pass	97.113	Pass
AV186						
	6/20/2011 10:53:06 PM	82235-334	0.2741	Pass		
	6/27/2011 9:49:22 PM	82234-334	0.2744	Pass	100.12	Pass
AV187						
	6/20/2011 10:53:09 PM	82236-334	0.2672	Pass		
	6/27/2011 9:50:09 PM	82235-334	0.2741	Pass	102.59	Pass
AV188						
	6/20/2011 10:53:13 PM	82237-334	0.2820	Pass		
	6/27/2011 9:50:56 PM	82236-334	0.2799	Pass	99.240	Pass
AV189						
	6/20/2011 10:53:16 PM	82238-334	0.2769	Pass		
	6/27/2011 9:51:48 PM	82237-334	0.2684	Pass	96.927	Pass
AV190						
	6/21/2011 1:27:18 AM	82239-334	0.2710	Pass		
	6/27/2011 9:52:36 PM	82238-334	0.2739	Pass	101.05	Pass
AV191						
	6/20/2011 10:53:19 PM	82240-334	0.2794	Pass		
	6/21/2011 4:20:11 AM	82239-334	0.2769	Pass	99.115	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV192						
	6/20/2011 10:53:23 PM	82241-334	0.2797	Pass		
	6/27/2011 9:53:23 PM	82240-334	0.2797	Pass	100.02	Pass
AV193						
	6/20/2011 10:53:26 PM	82242-334	0.2736	Pass		
	6/27/2011 9:54:02 PM	82241-334	0.2750	Pass	100.50	Pass
AV194						
	6/20/2011 10:53:29 PM	82243-334	0.2734	Pass		
	6/27/2011 9:54:56 PM	82242-334	0.2776	Pass	101.56	Pass
AV195						
	6/20/2011 10:53:33 PM	82244-334	0.2644	Pass		
	6/27/2011 9:55:43 PM	82243-334	0.2668	Pass	100.90	Pass
AV196						
	6/20/2011 10:53:37 PM	82245-334	0.2839	Pass		
	6/27/2011 9:56:30 PM	82244-334	0.2753	Pass	96.985	Pass
AV197						
	6/24/2011 2:40:07 AM	82246-334	0.2672	Pass		
	6/27/2011 9:57:47 PM	82245-334	0.2763	Pass	103.37	Pass
AV198						
	6/24/2011 2:22:48 PM	82247-334	0.2725	Pass		
	6/24/2011 3:24:45 PM	82246-334	0.2672	Pass	98.027	Pass
AV199						
	6/30/2011 9:09:28 AM	82238-334	0.2684	Pass		
	6/30/2011 10:17:40 AM	82237-334	0.2638	Pass	98.291	Pass
AV200						
	6/20/2011 10:53:47 PM	63507-334	0.2618	Pass		
	6/27/2011 10:00:20 PM	63506-334	0.2543	Pass	97.155	Pass
AV201						
	6/20/2011 10:53:53 PM	63508A-334	0.2654	Pass		
	6/27/2011 10:01:08 PM	63507-334	0.2735	Pass	103.06	Pass
AV202						
	6/27/2011 10:01:51 PM	63509A-334	0.2648	Pass		
	6/27/2011 10:02:25 PM	63508A-334	0.2613	Pass	98.648	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV203						
	6/21/2011 3:19:59 PM	82232-334	0.2768	Pass		
	6/21/2011 3:21:44 PM	63509A-334	0.2646	Pass	95.582	Pass
AV204						
	6/27/2011 10:03:31 PM	82233-334	0.2705	Pass		
	6/27/2011 10:04:08 PM	82232-334	0.2736	Pass	101.16	Pass
AV205						
	6/21/2011 3:29:26 PM	82234-334	0.2783	Pass		
	6/27/2011 10:04:59 PM	82233-334	0.2722	Pass	97.818	Pass
AV206						
	6/27/2011 10:05:51 PM	82235-334	0.2796	Pass		
	6/27/2011 10:06:38 PM	82234-334	0.2837	Pass	101.48	Pass
AV207						
	6/27/2011 10:07:21 PM	82236-334	0.2735	Pass		
	6/27/2011 10:08:05 PM	82235-334	0.2759	Pass	100.87	Pass
AV208						
	6/27/2011 10:08:56 PM	82237-334	0.2765	Pass		
	6/27/2011 10:09:30 PM	82236-334	0.2800	Pass	101.26	Pass
AV209						
	6/27/2011 10:10:06 PM	82238-334	0.2812	Pass		
	6/27/2011 10:10:39 PM	82237-334	0.2680	Pass	95.309	Pass
AV210						
	6/21/2011 9:13:09 AM	82239-334	0.2718	Pass		
	6/27/2011 10:11:34 PM	82238-334	0.2722	Pass	100.16	Pass
AV211						
	6/27/2011 10:12:37 PM	82240-334	0.2684	Pass		
	6/21/2011 10:55:13 AM	82239-334	0.2688	Pass	100.13	Pass
AV212						
	6/27/2011 10:13:23 PM	82241-334	0.2851	Pass		
	6/27/2011 10:13:58 PM	82240-334	0.2891	Pass	101.41	Pass
AV213						
	6/23/2011 11:27:18 AM	82242-334	0.2707	Pass		
	6/23/2011 1:44:14 PM	82241-334	0.2712	Pass	100.17	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV214						
	6/27/2011 10:15:18 PM	82243-334	0.2701	Pass		
	6/27/2011 10:15:54 PM	82242-334	0.2728	Pass	100.98	Pass
AV215						
	6/27/2011 10:16:46 PM	82244-334	0.2907	Pass		
	6/27/2011 10:17:26 PM	82243-334	0.2768	Pass	95.222	Pass
AV216						
	6/27/2011 10:18:14 PM	82245-334	0.2815	Pass		
	6/27/2011 10:18:50 PM	82244-334	0.2736	Pass	97.176	Pass
AV217						
	7/1/2011 10:10:06 AM	82246-334	0.2656	Pass		
	7/1/2011 10:10:22 AM	82245-334	0.2746	Pass	103.39	Pass
AV218						
	6/24/2011 1:51:29 PM	82247-334	0.2743	Pass		
	6/24/2011 5:16:09 PM	82246-334	0.2696	Pass	98.287	Pass
AV219						
	6/30/2011 9:09:52 AM	82240-334	0.2749	Pass		
	6/30/2011 9:10:10 AM	82238-334	0.2711	Pass	98.608	Pass
AV220						
	6/27/2011 10:21:49 PM	63507-334	0.2632	Pass		
	6/27/2011 10:22:24 PM	63506-334	0.2579	Pass	97.981	Pass
AV221						
	6/27/2011 10:23:08 PM	63508A-334	0.2621	Pass		
	6/27/2011 10:23:43 PM	63507-334	0.2617	Pass	99.836	Pass
AV222						
	6/27/2011 10:24:23 PM	63509A-334	0.2675	Pass		
	6/27/2011 10:25:09 PM	63508A-334	0.2634	Pass	98.476	Pass
AV223						
	6/23/2011 11:28:00 AM	82232-334	0.2800	Pass		
	6/23/2011 1:44:18 PM	63509A-334	0.2682	Pass	95.794	Pass
AV224						
	6/23/2011 11:28:25 AM	82233-334	0.2755	Pass		
	6/23/2011 1:44:22 PM	82232-334	0.2798	Pass	101.55	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV225						
	6/24/2011 2:40:10 AM	82234-334	0.2791	Pass		
	6/27/2011 10:26:27 PM	82233-334	0.2753	Pass	98.623	Pass
AV226						
	6/24/2011 2:40:15 AM	82235-334	0.2729	Pass		
	6/27/2011 10:27:06 PM	82234-334	0.2800	Pass	102.61	Pass
AV227						
	6/25/2011 10:39:33 AM	82236-334	0.2783	Pass		
	6/25/2011 1:18:30 PM	82235-334	0.2773	Pass	99.651	Pass
AV228						
	6/28/2011 9:07:26 AM	82237-334	0.2755	Pass		
	6/28/2011 9:07:46 AM	82236-334	0.2863	Pass	103.94	Pass
AV229						
	6/25/2011 10:39:43 AM	82238-334	0.2781	Pass		
	6/25/2011 1:18:41 PM	82237-334	0.2735	Pass	98.336	Pass
AV230						
	6/25/2011 10:39:47 AM	82239-334	0.2844	Pass		
	6/25/2011 1:19:16 PM	82238-334	0.2812	Pass	98.851	Pass
AV231						
	6/25/2011 10:50:22 AM	82240-334	0.2784	Pass		
	6/25/2011 1:19:42 PM	82239-334	0.2758	Pass	99.090	Pass
AV232						
	6/25/2011 10:58:31 AM	82241-334	0.2758	Pass		
	6/25/2011 1:19:51 PM	82240-334	0.2812	Pass	101.96	Pass
AV233						
	6/25/2011 10:58:37 AM	82242-334	0.2668	Pass		
	6/25/2011 1:20:13 PM	82241-334	0.2705	Pass	101.37	Pass
AV234						
	6/28/2011 9:08:33 AM	82243-334	0.2710	Pass		
	6/28/2011 9:08:49 AM	82242-334	0.2714	Pass	100.13	Pass
AV235						
	6/25/2011 11:19:40 AM	82244-334	0.2686	Pass		
	6/25/2011 1:21:34 PM	82243-334	0.2694	Pass	100.30	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV236						
	6/25/2011 11:19:44 AM	82245-334	0.2759	Pass		
	6/25/2011 1:22:02 PM	82244-334	0.2647	Pass	95.960	Pass
AV237						
	6/25/2011 11:19:48 AM	82246-334	0.2679	Pass		
	6/25/2011 1:22:14 PM	82245-334	0.2783	Pass	103.89	Pass
AV238						
	6/25/2011 11:19:52 AM	82247-334	0.2740	Pass		
	6/25/2011 1:22:47 PM	82246-334	0.2642	Pass	96.404	Pass
AV239						
	6/29/2011 4:17:46 PM	82241-334	0.2816	Pass		
	6/29/2011 5:24:20 PM	82239-334	0.2770	Pass	98.355	Pass
AV240						
	6/28/2011 9:06:33 AM	63507-334	0.2675	Pass		
	6/25/2011 1:23:31 PM	63506-334	0.2636	Pass	98.508	Pass
AV241						
	6/25/2011 11:47:42 AM	63508A-334	0.2600	Pass		
	6/25/2011 1:23:51 PM	63507-334	0.2602	Pass	100.06	Pass
AV242						
	6/25/2011 11:47:57 AM	63509A-334	0.2680	Pass		
	6/25/2011 1:24:10 PM	63508A-334	0.2667	Pass	99.534	Pass
AV243						
	6/25/2011 9:28:07 AM	82232-334	0.2795	Pass		
	6/25/2011 1:24:52 PM	63509A-334	0.2676	Pass	95.760	Pass
AV244						
	6/25/2011 12:07:09 PM	82233-334	0.2858	Pass		
	6/25/2011 1:25:04 PM	82232-334	0.2904	Pass	101.61	Pass
AV245						
	6/25/2011 12:07:13 PM	82234-334	0.2856	Pass		
	6/25/2011 1:25:24 PM	82233-334	0.2793	Pass	97.792	Pass
AV246						
	6/25/2011 12:07:17 PM	82235-334	0.2981	Pass		
	6/25/2011 1:25:53 PM	82234-334	0.2968	Pass	99.576	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV247						
	6/28/2011 9:04:33 AM	82236-334	0.2721	Pass		
	6/28/2011 9:04:52 AM	82235-334	0.2774	Pass	101.94	Pass
AV248						
	6/28/2011 9:09:30 AM	82237-334	0.2651	Pass		
	6/28/2011 9:09:48 AM	82236-334	0.2698	Pass	101.77	Pass
AV249						
	6/28/2011 9:10:11 AM	82238-334	0.2852	Pass		
	6/28/2011 9:10:27 AM	82237-334	0.2781	Pass	97.510	Pass
AV250						
	6/28/2011 9:10:53 AM	82239-334	0.2800	Pass		
	6/28/2011 9:11:12 AM	82238-334	0.2820	Pass	100.71	Pass

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Alpha Vision
Yearly Calibrations
Updated 2/22/12

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV22						
Dec2011_AV22	2/21/2012 2:57:59 PM	82237-334	0.2680	Pass		
Dec2011a_AV22_ICV	12/8/2011 2:38:54 PM	82236-334	0.2670	Pass	99.6280	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Wednesday, February 22, 2012 **Page 1 of 1**

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV48						
June2011A_AV48	2/21/2012 2:58:50 PM	82237-334	0.2748	Pass		
June2011_AV48_ICV	6/28/2011 9:18:29 PM	82236-334	0.2720	Pass	98.9875	Pass
AV88						
May2011_AV88	2/21/2012 2:59:57 PM	82237-334	0.2736	Pass		
June2011_AV88_ICV	6/28/2011 9:33:31 PM	82236-334	0.2783	Pass	101.747	Pass
AV103						
June2011_AV103a	2/21/2012 3:00:31 PM	82237-334	0.2722	Pass		
June2011_AV103a_ICVb	6/29/2011 8:19:11 PM	82236-334	0.2718	Pass	99.8524	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV68						
May2011_AV68	2/21/2012 2:59:22 PM	82237-334	0.2733	Pass		
June2011_AV68_ICV	6/2/2011 5:28:05 PM	82236-334	0.2767	Pass	101.258	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV128						
June2011_AV128	2/21/2012 3:01:06 PM	82237-334	0.2692	Pass		
June2011_AV128_ICV	6/10/2011 3:00:38 PM	82236-334	0.2737	Pass	101.685	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV160						
June2011A_AV160	2/21/2012 3:02:57 PM	82237-334	0.2708	Pass		
June2011A_AV160_ICV	6/30/2011 9:07:22 AM	82236-334	0.2656	Pass	98.0720	Pass
AV168						
June2011_AV168	2/21/2012 3:03:27 PM	82237-334	0.2704	Pass		
June2011_AV168_ICV	6/27/2011 9:34:45 PM	82236-334	0.2702	Pass	99.9393	Pass
AV179						
June2011B_AV179	2/21/2012 3:03:50 PM	82237-334	0.2821	Pass		
June2011_AV179b_ICV	6/30/2011 10:17:36 AM	82236-334	0.2866	Pass	101.588	Pass
AV228						
June2011A_AV228	2/21/2012 3:04:50 PM	82237-334	0.2834	Pass		
June2011A_AV228_ICV	6/28/2011 9:07:46 AM	82236-334	0.2863	Pass	101.035	Pass
AV248						
June2011_AV248	2/21/2012 3:05:18 PM	82237-334	0.2726	Pass		
June2011_AV248_ICV	6/28/2011 9:09:48 AM	82236-334	0.2698	Pass	98.9835	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV205						
Dec2011_AV205	2/21/2012 3:04:20 PM	82237-334	0.2688	Pass		
Dec2011_AV205_ICV	12/16/2011 3:08:08 AM	82236-334	0.2684	Pass	99.8398	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:03:26PM 7/25/2011

Calibration

Name: June2011_AV110
Description:
Detector: AV110

Calibration Date: 6/10/2011 2:51:15PM
Analyst: 60040

Source Info

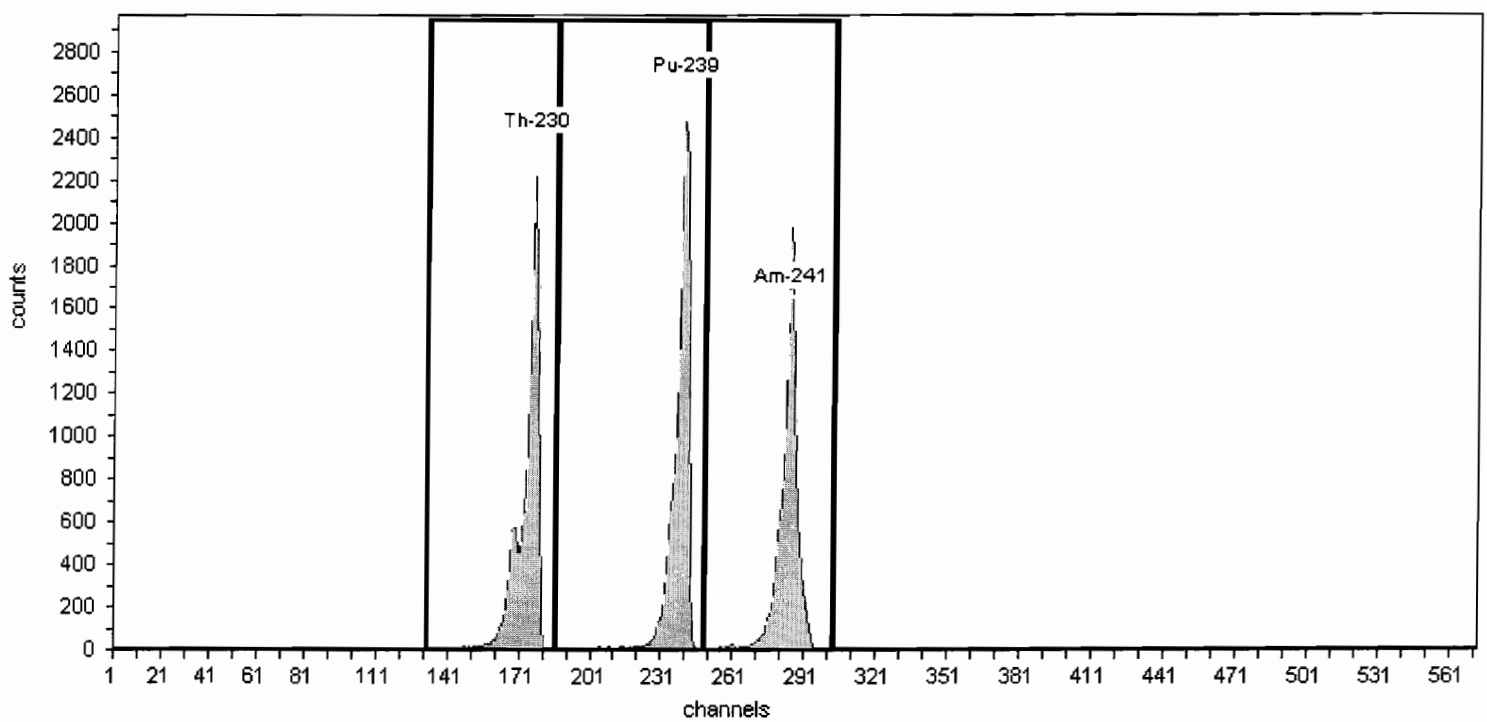
Certificate ID: 82239-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV110 , SN: 49-034G5
Acquisition Start Date: 6/6/2011 8:27:23AM
Live Time: 140.00 min.
Real Time: 140.12 min.
Efficiency: 27.61% +/- 0.39% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	13,327.00	95.19
Pu-239	240	5.16	186	249	14,197.00	101.41
Am-241	284	5.49	249	303	12,925.00	92.32

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:03:34PM 7/25/2011

Calibration

Name: June2011_AV110_ICV
Description:
Detector: AV110

Calibration Date: 6/10/2011 2:51:31PM
Analyst: 60040

Source Info

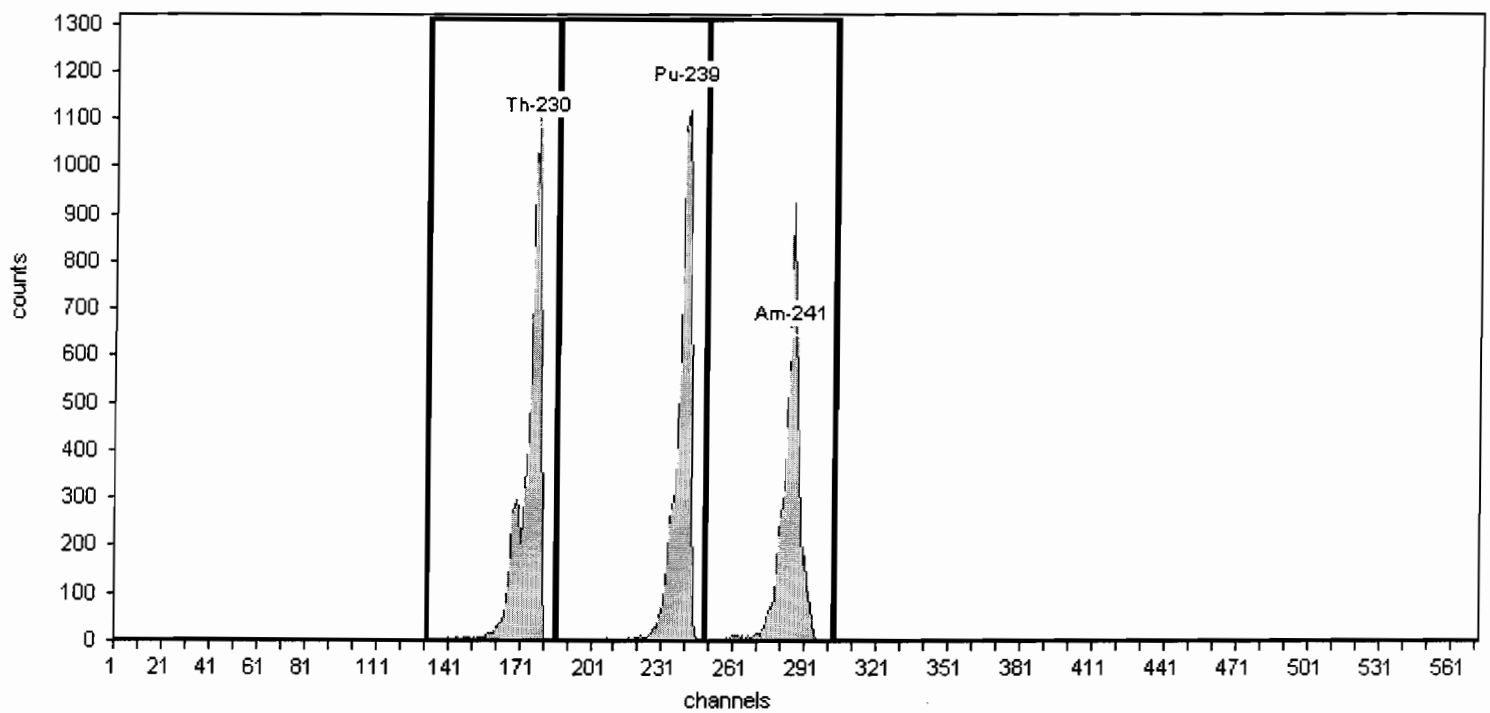
Certificate ID: 82238-334
Prepared by: Analytics

Certification Date: 6/1/2010 12:00:00PM
Description:

Acquisition

Detector: AV110 , SN: 49-034G5
Acquisition Start Date: 6/6/2011 1:16:05PM
Live Time: 60.00 min.
Real Time: 60.05 min.
Efficiency: 27.23% +/- 0.46% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,808.00	113.47
Pu-239	240	5.16	186	249	6,669.00	111.15
Am-241	284	5.49	249	303	5,937.00	98.95

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:03:44PM 7/25/2011

Calibration

Name: June2011_AV111
Description:
Detector: AV111

Calibration Date: 6/10/2011 2:51:42PM
Analyst: 60040

Source Info

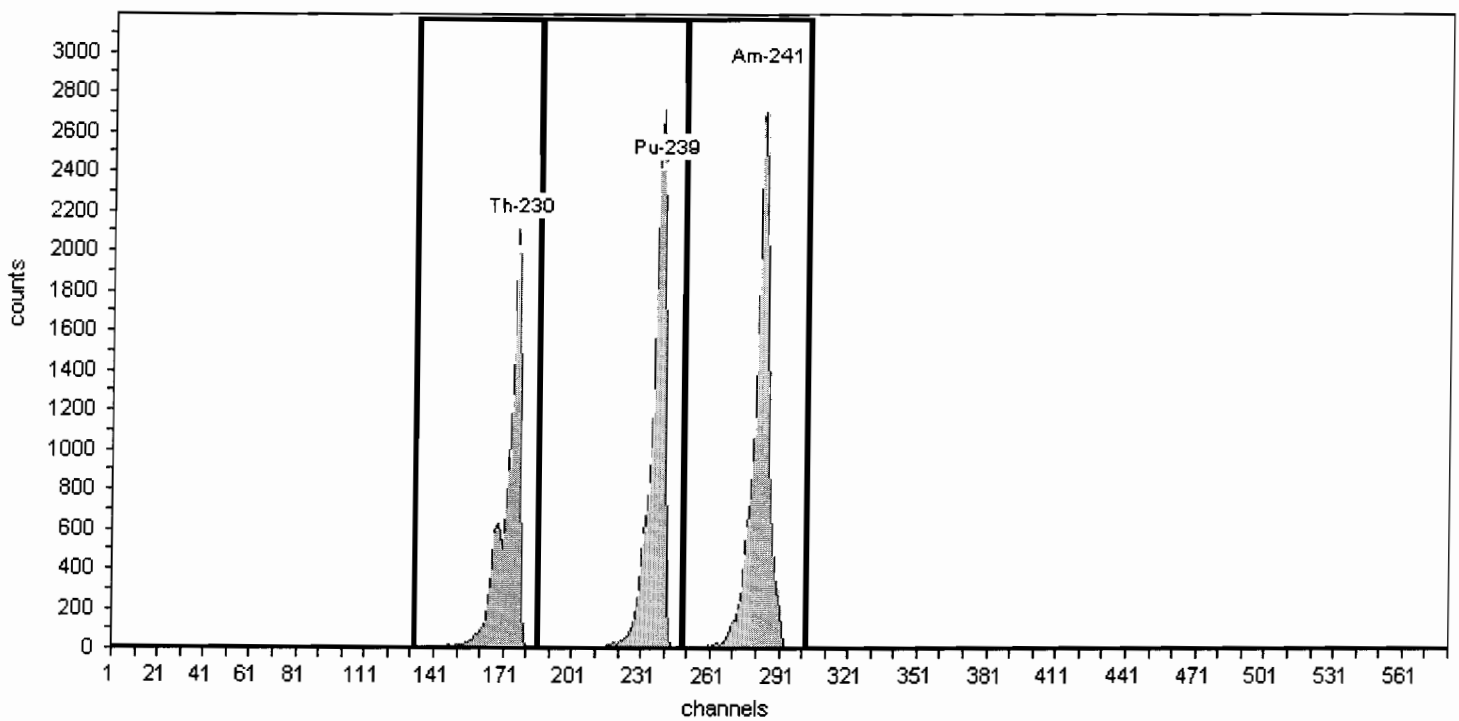
Certificate ID: 82240-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV111 , SN: 49-037E6
Acquisition Start Date: 6/6/2011 8:27:26AM
Live Time: 140.00 min.
Real Time: 140.12 min.
Efficiency: 27.42% +/- 0.31% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	14,225.00	101.61
Pu-239	240	5.16	186	249	16,637.00	118.84
Am-241	284	5.49	249	303	19,224.00	137.31

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:03:48PM 7/25/2011

Calibration

Name: June2011_AV111_ICV
Description:
Detector: AV111

Calibration Date: 6/10/2011 2:51:58PM
Analyst: 60040

Source Info

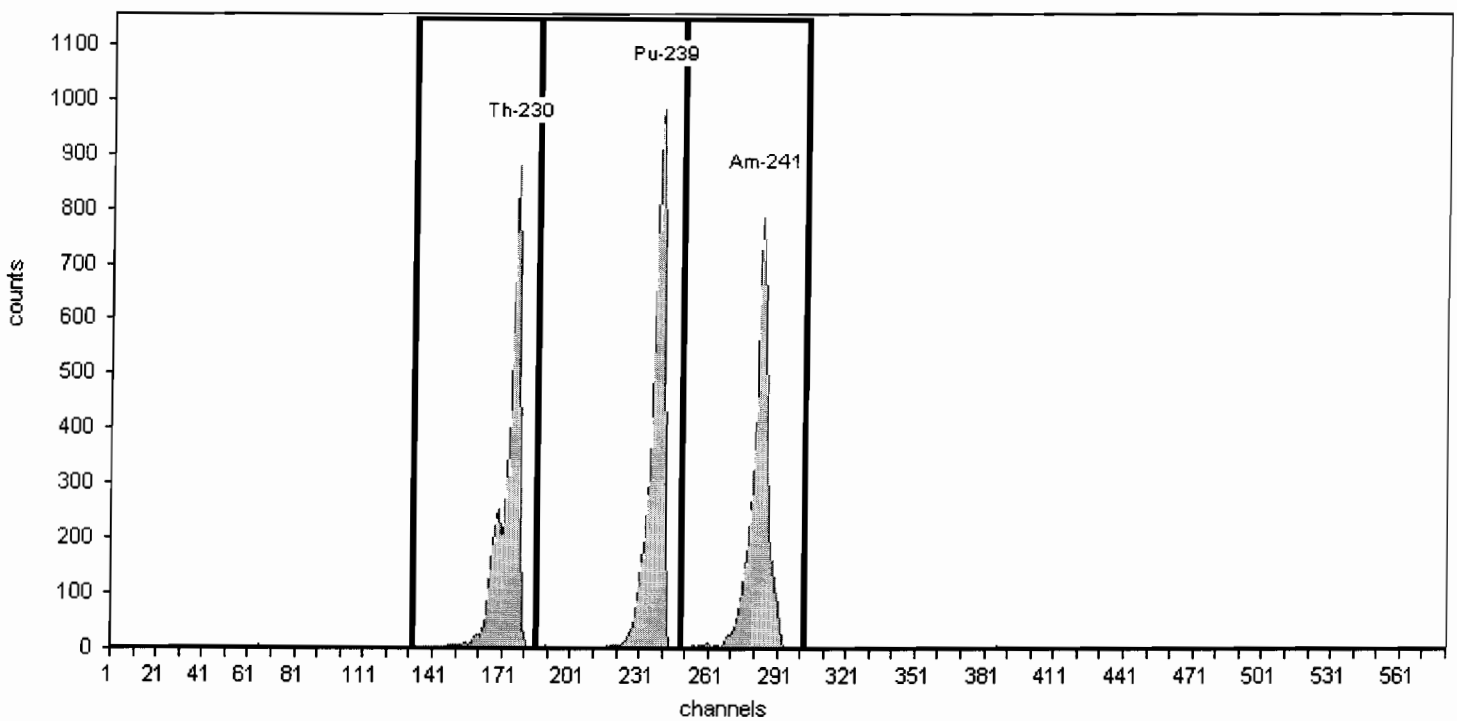
Certificate ID: 82239-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV111 , SN: 49-037E6
Acquisition Start Date: 6/6/2011 1:16:20PM
Live Time: 60.00 min.
Real Time: 60.05 min.
Efficiency: 26.98% +/- 0.50% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,673.00	94.55
Pu-239	240	5.16	186	249	5,924.00	98.73
Am-241	284	5.49	249	303	5,341.00	89.02

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:03:57PM 7/25/2011

Calibration

Name: June2011_AV112
Description:
Detector: AV112

Calibration Date: 6/10/2011 2:52:10PM
Analyst: 60040

Source Info

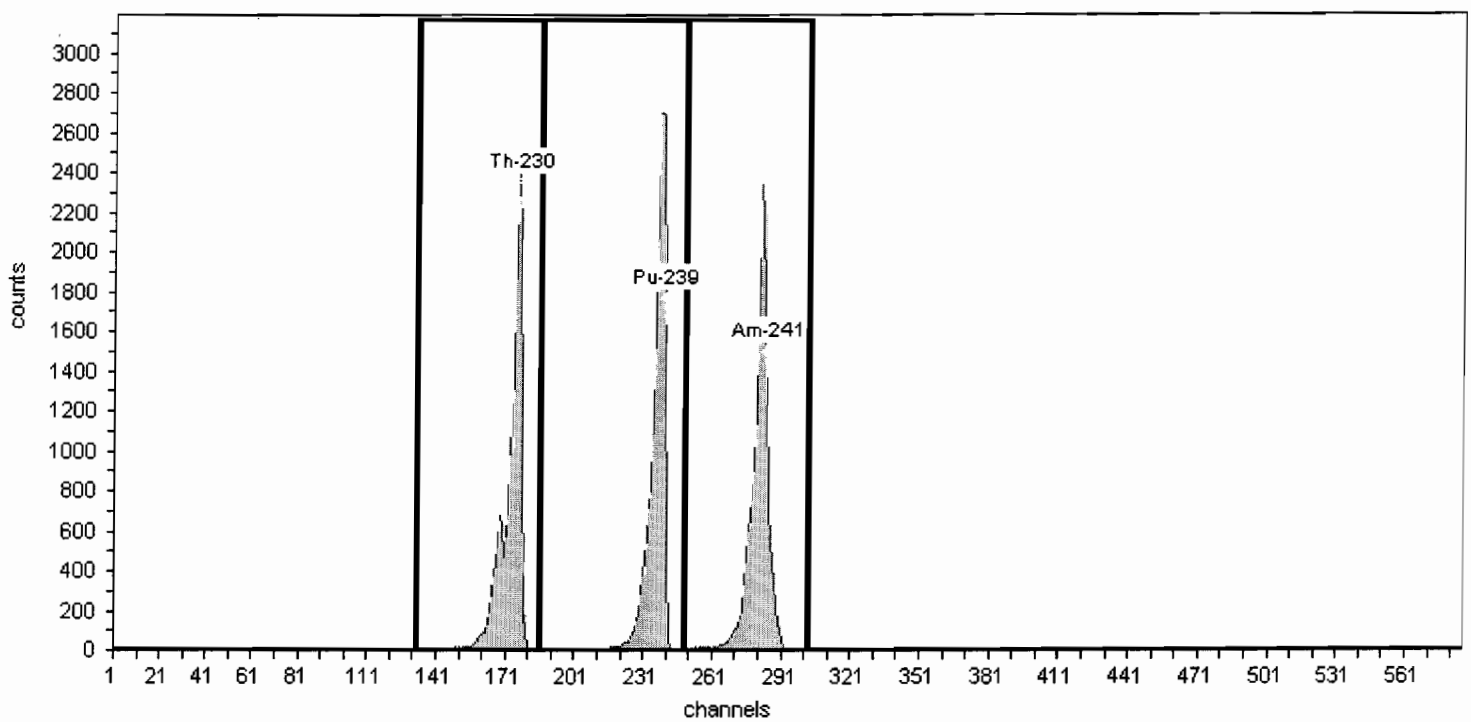
Certificate ID: 82241-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV112 , SN: 49-037G7
Acquisition Start Date: 6/6/2011 8:27:47AM
Live Time: 140.00 min.
Real Time: 140.12 min.
Efficiency: 26.89% +/- 0.33% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	14,830.00	105.93
Pu-239	240	5.16	186	249	15,538.00	110.99
Am-241	284	5.49	249	303	14,942.00	106.73

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:04:01PM 7/25/2011

Calibration

Name: June2011_AV112_ICV
Description:
Detector: AV112

Calibration Date: 6/10/2011 2:52:23PM
Analyst: 60040

Source Info

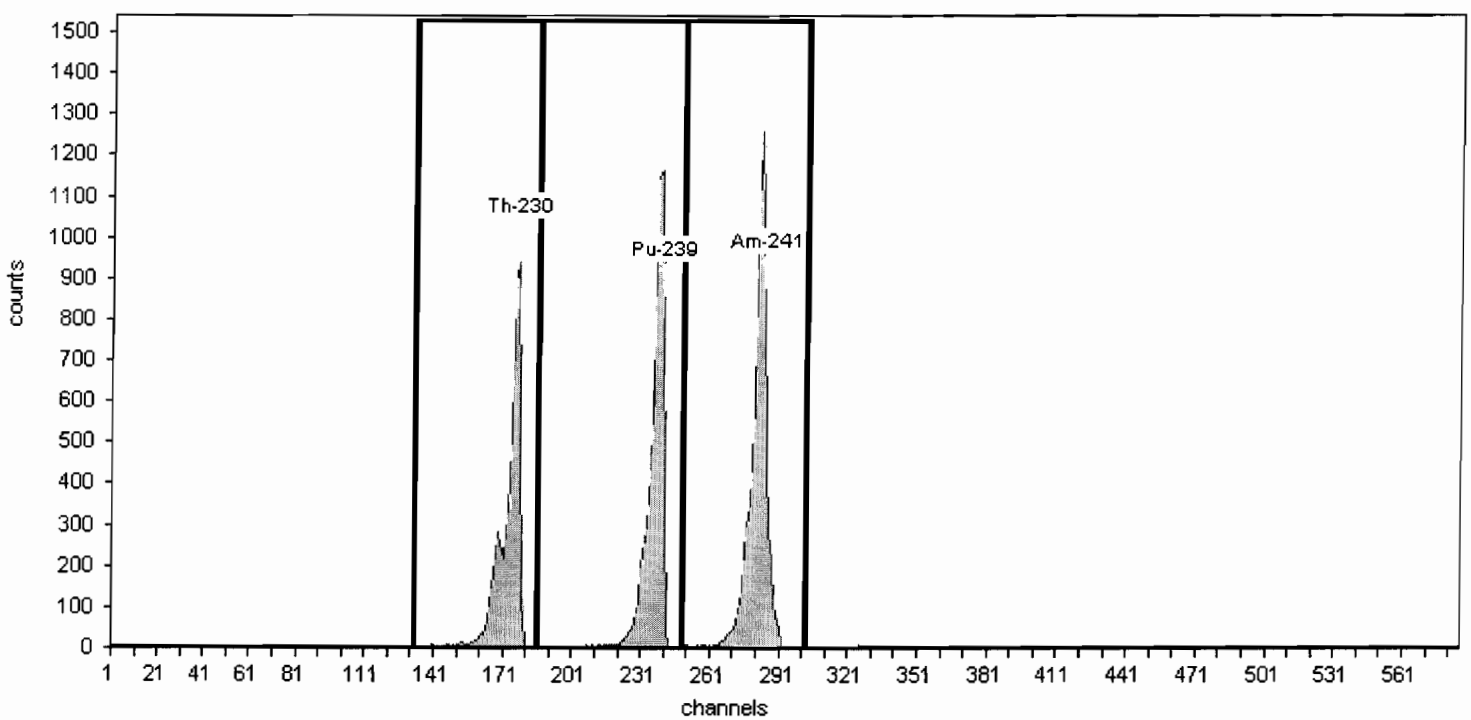
Certificate ID: 82240-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV112 , SN: 49-037G7
Acquisition Start Date: 6/6/2011 1:16:35PM
Live Time: 60.00 min.
Real Time: 60.05 min.
Efficiency: 26.62% +/- 0.42% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,008.00	100.13
Pu-239	240	5.16	186	249	6,918.00	115.30
Am-241	284	5.49	249	303	7,921.00	132.02

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:04:10PM 7/25/2011

Calibration

Name: June2011_AV113a
Description:
Detector: AV113

Calibration Date: 6/29/2011 8:19:17PM
Analyst: 60040

Source Info

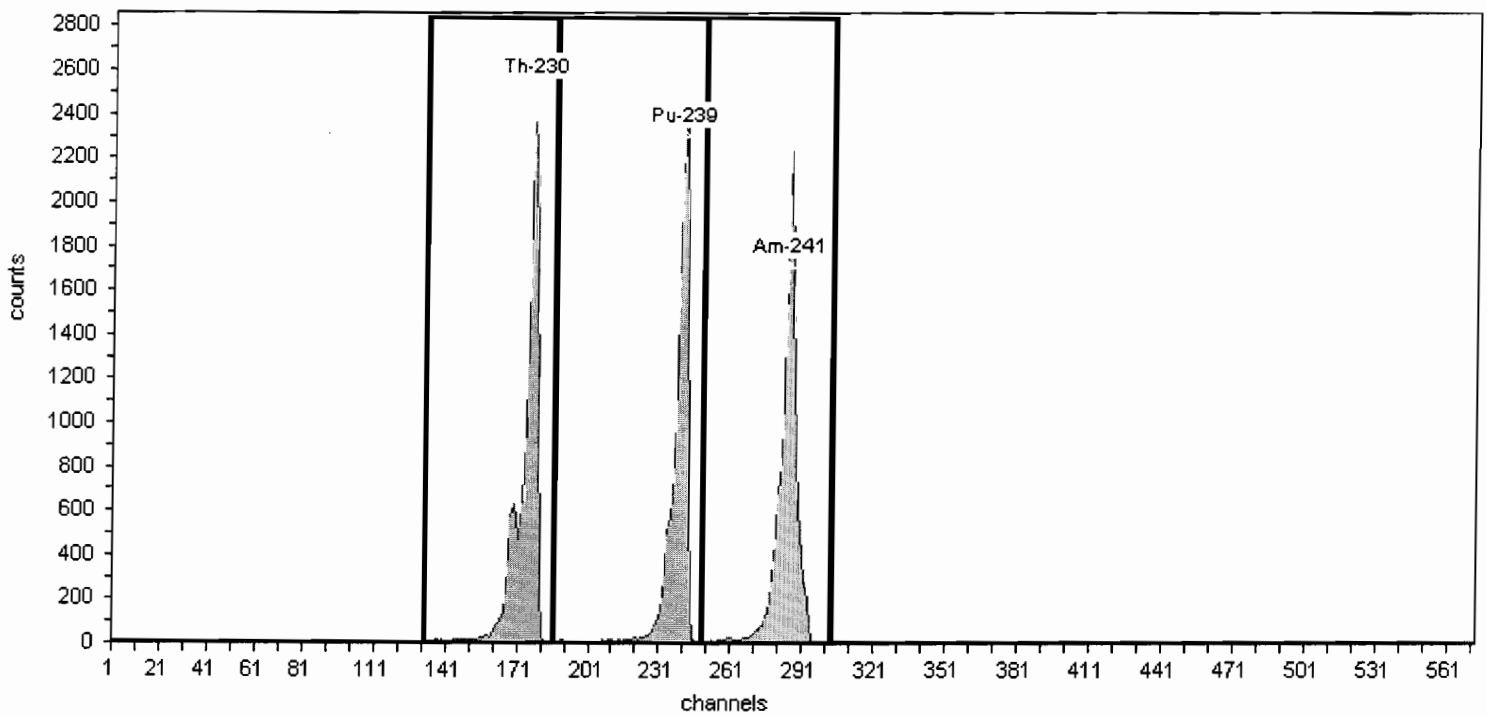
Certificate ID: 82247-334
Prepared by: Analytics

Certification Date: 6/10/2010 12:00:00PM
Description:

Acquisition

Detector: AV113 , SN: 49-037X5
Acquisition Start Date: 6/29/2011 4:14:18PM
Live Time: 140.00 min.
Real Time: 140.01 min.
Efficiency: 27.97% +/- 0.37% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	14,724.00	105.17
Pu-239	240	5.16	186	249	13,497.00	96.41
Am-241	284	5.49	249	303	14,739.00	105.28

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:04:14PM 7/25/2011

Calibration

Name: June2011_AV113a_ICV
Description:
Detector: AV113

Calibration Date: 6/30/2011 10:18:11AM
Analyst: 60040

Source Info

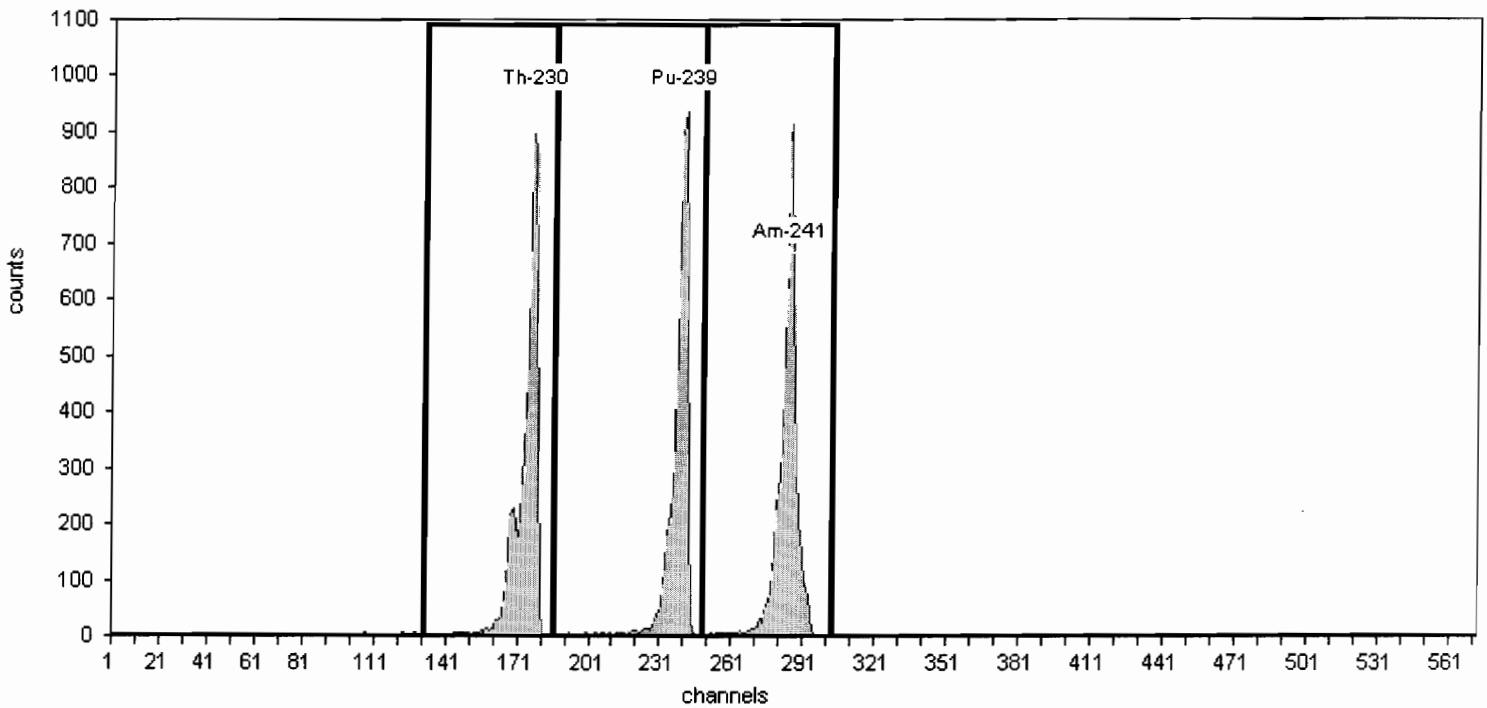
Certificate ID: 82246-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV113 , SN: 49-037X5
Acquisition Start Date: 6/30/2011 9:02:26AM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 27.33% +/- 0.51% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,480.00	91.33
Pu-239	240	5.16	186	249	5,234.00	87.23
Am-241	284	5.49	249	303	5,931.00	98.85

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:04:23PM 7/25/2011

Calibration

Name: June2011_AV114
Description:
Detector: AV114

Calibration Date: 6/10/2011 2:53:57PM
Analyst: 60040

Source Info

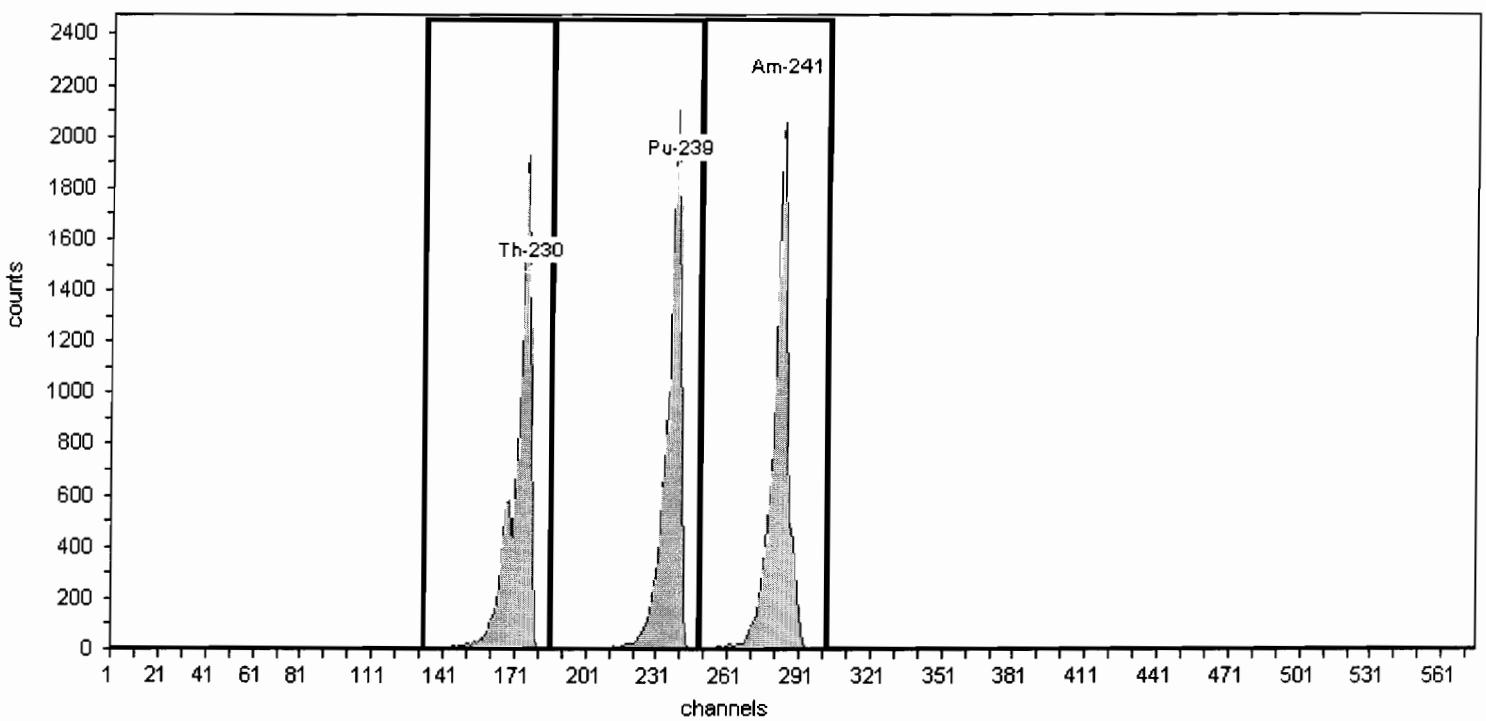
Certificate ID: 82243-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV114 , SN: 49-037E7
Acquisition Start Date: 6/6/2011 8:28:19AM
Live Time: 140.00 min.
Real Time: 140.12 min.
Efficiency: 26.72% +/- 0.35% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	13,166.00	94.04
Pu-239	240	5.16	186	249	13,356.00	95.40
Am-241	284	5.49	249	303	14,367.00	102.62

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:04:27PM 7/25/2011

Calibration

Name: June2011_AV114_ICV
Description:
Detector: AV114

Calibration Date: 6/10/2011 2:54:10PM
Analyst: 60040

Source Info

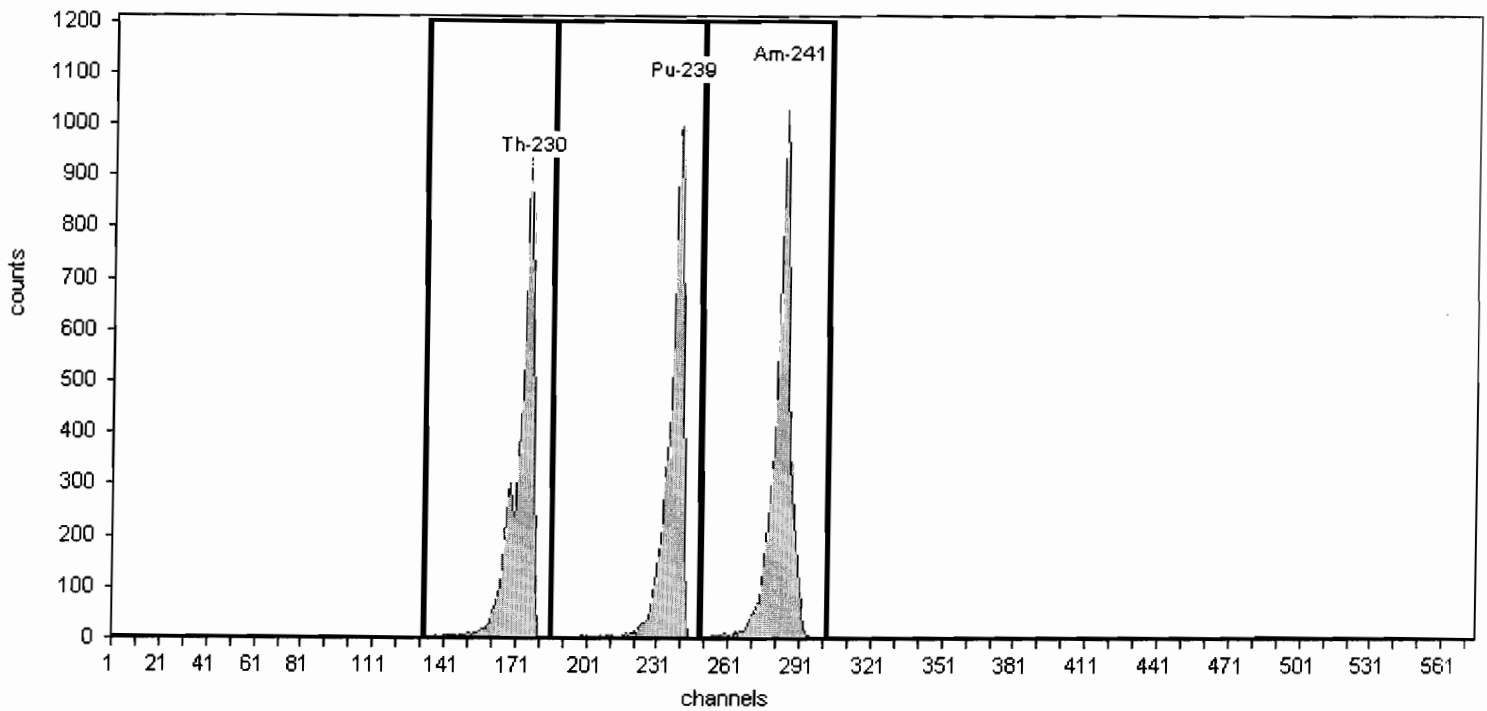
Certificate ID: 82242-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV114 , SN: 49-037E7
Acquisition Start Date: 6/6/2011 1:17:19PM
Live Time: 60.00 min.
Real Time: 60.05 min.
Efficiency: 27.59% +/- 0.45% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,525.00	108.75
Pu-239	240	5.16	186	249	6,250.00	104.17
Am-241	284	5.49	249	303	7,231.00	120.52

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:04:41PM 7/25/2011

Calibration

Name: June2011_AV115
Description:
Detector: AV115

Calibration Date: 6/10/2011 2:57:31PM
Analyst: 60040

Source Info

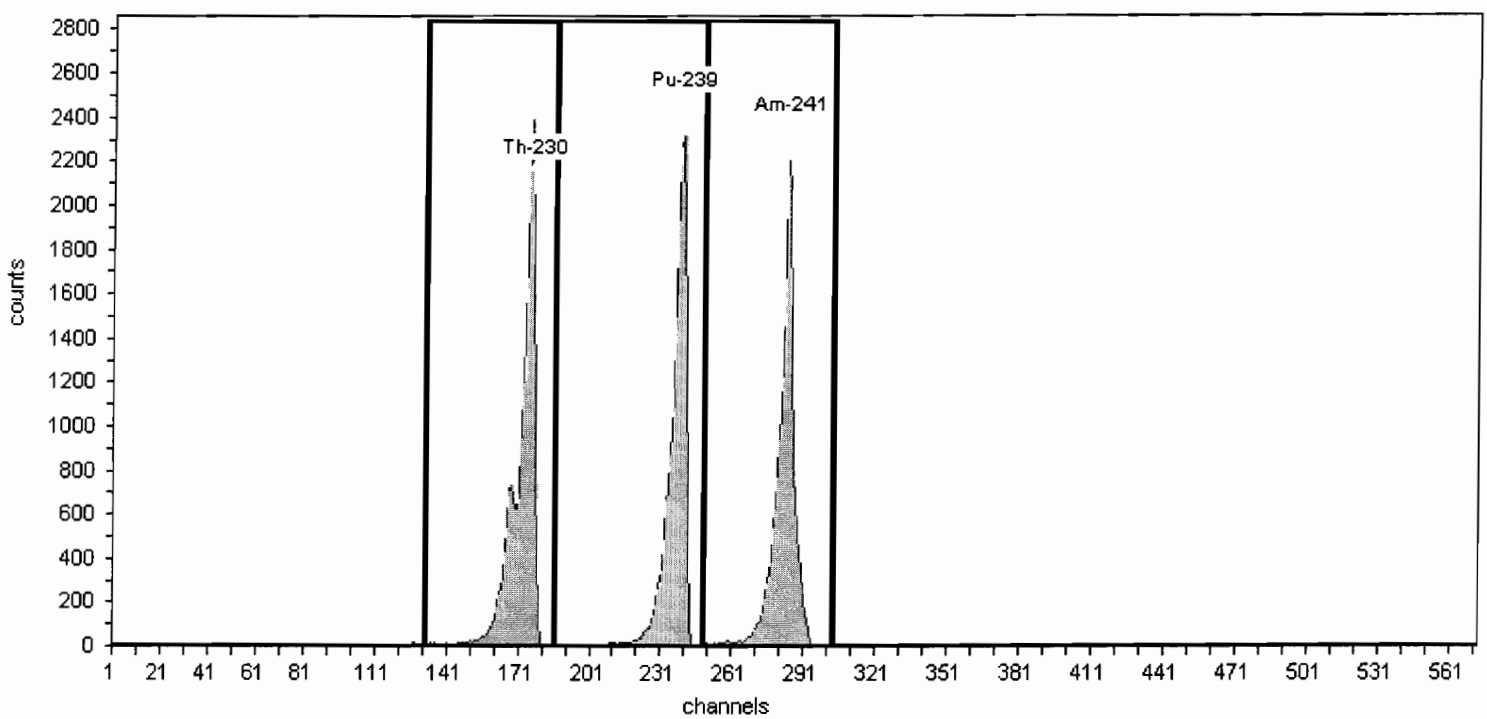
Certificate ID: 82244-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV115 , SN: 49-037E4
Acquisition Start Date: 6/6/2011 8:28:20AM
Live Time: 140.00 min.
Real Time: 145.89 min.
Efficiency: 27.13% +/- 0.32% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	16,882.00	120.59
Pu-239	240	5.16	186	249	15,330.00	109.50
Am-241	284	5.49	249	303	15,558.00	111.13

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:04:45PM 7/25/2011

Calibration

Name: June2011_AV115_ICV
Description:
Detector: AV115

Calibration Date: 6/10/2011 2:57:44PM
Analyst: 60040

Source Info

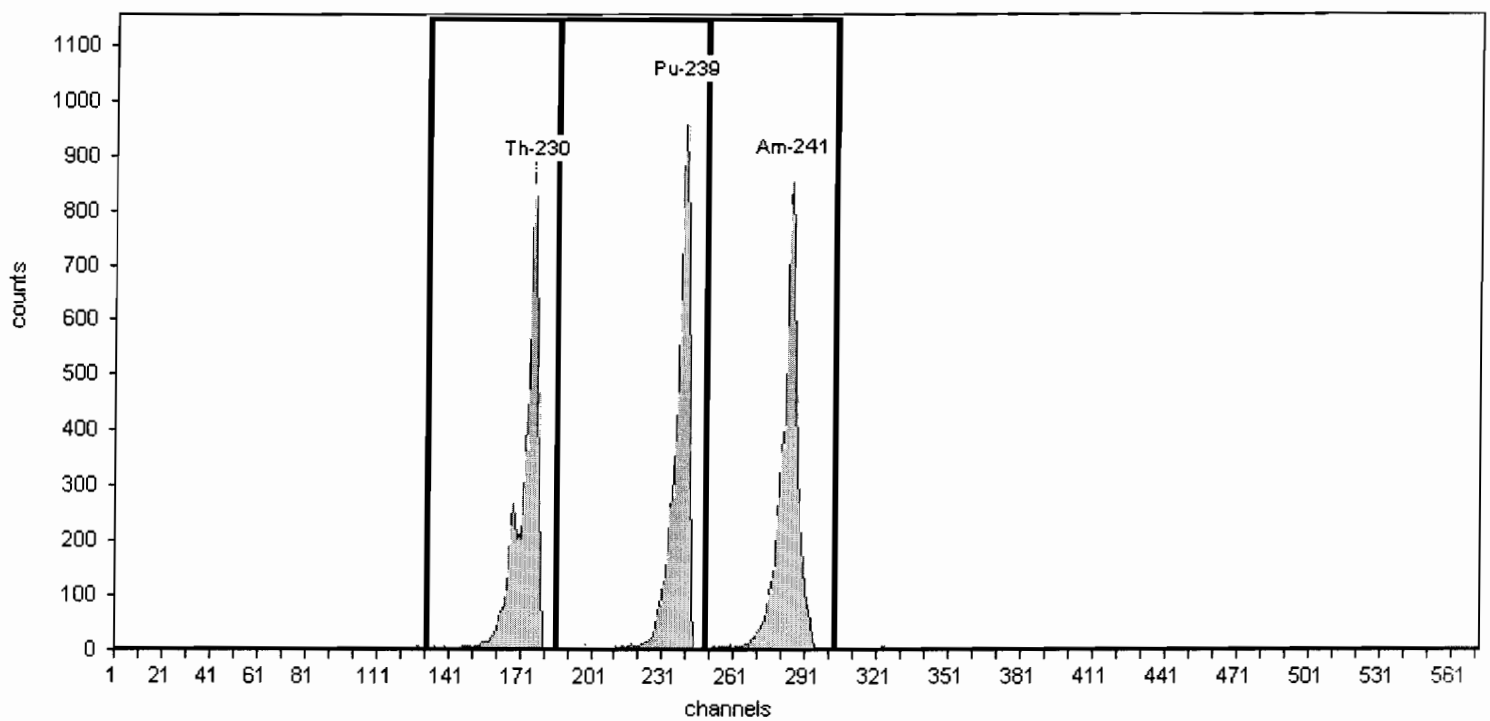
Certificate ID: 82243-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV115 , SN: 49-037E4
Acquisition Start Date: 6/6/2011 1:17:21PM
Live Time: 60.00 min.
Real Time: 61.08 min.
Efficiency: 27.21% +/- 0.47% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,760.00	96.00
Pu-239	240	5.16	186	249	5,771.00	96.18
Am-241	284	5.49	249	303	6,319.00	105.32

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:04:53PM 7/25/2011

Calibration

Name: May2011_AV116
Description:
Detector: AV116

Calibration Date: 6/2/2011 11:22:31AM
Analyst: 60040

Source Info

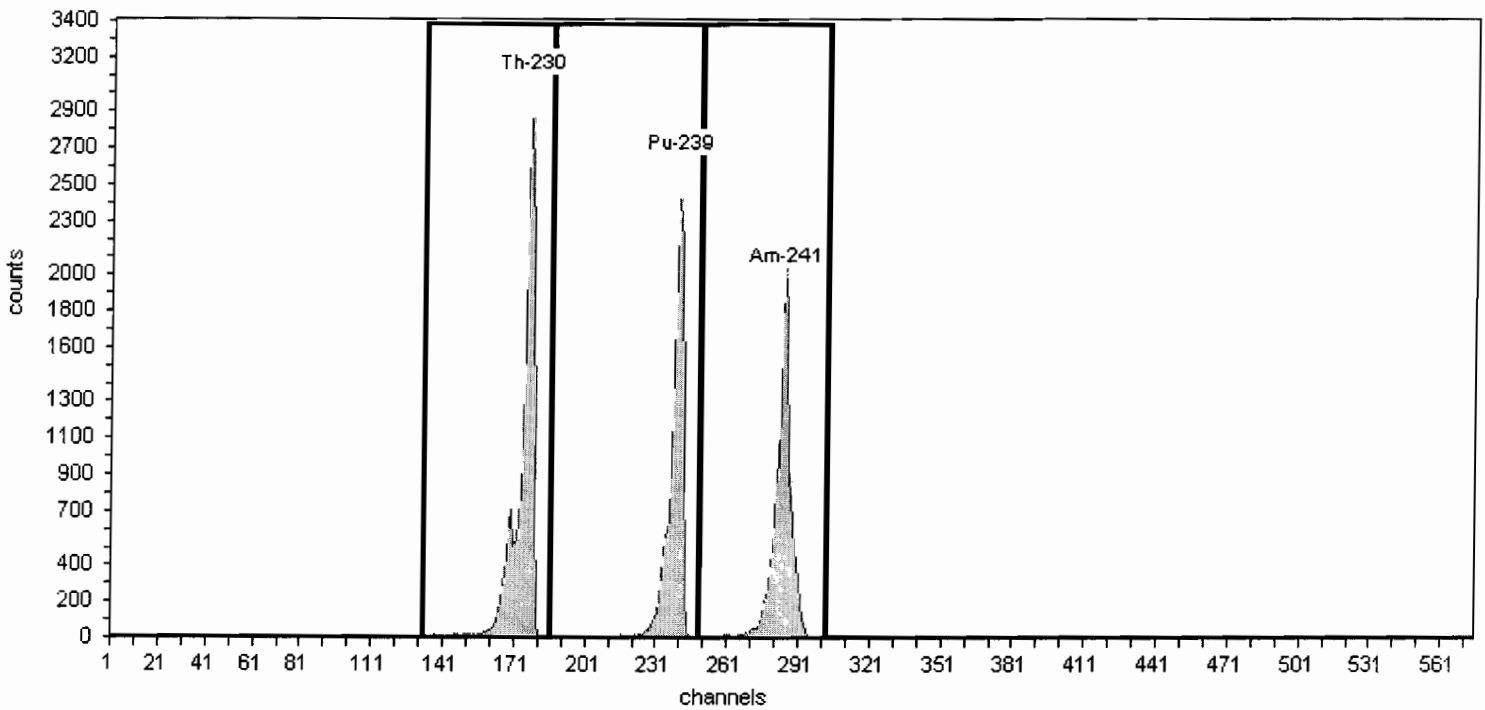
Certificate ID: 82245-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV116 , SN: 49-034G1
Acquisition Start Date: 6/2/2011 8:33:22AM
Live Time: 140.00 min.
Real Time: 140.01 min.
Efficiency: 28.02% +/- 0.39% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	15,833.00	113.09
Pu-239	240	5.16	186	249	12,738.00	90.99
Am-241	284	5.49	249	303	13,067.00	93.34

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:04:58PM 7/25/2011

Calibration

Name: June2011_AV116_ICV
Description:
Detector: AV116

Calibration Date: 6/27/2011 10:38:43PM
Analyst: 60040

Source Info

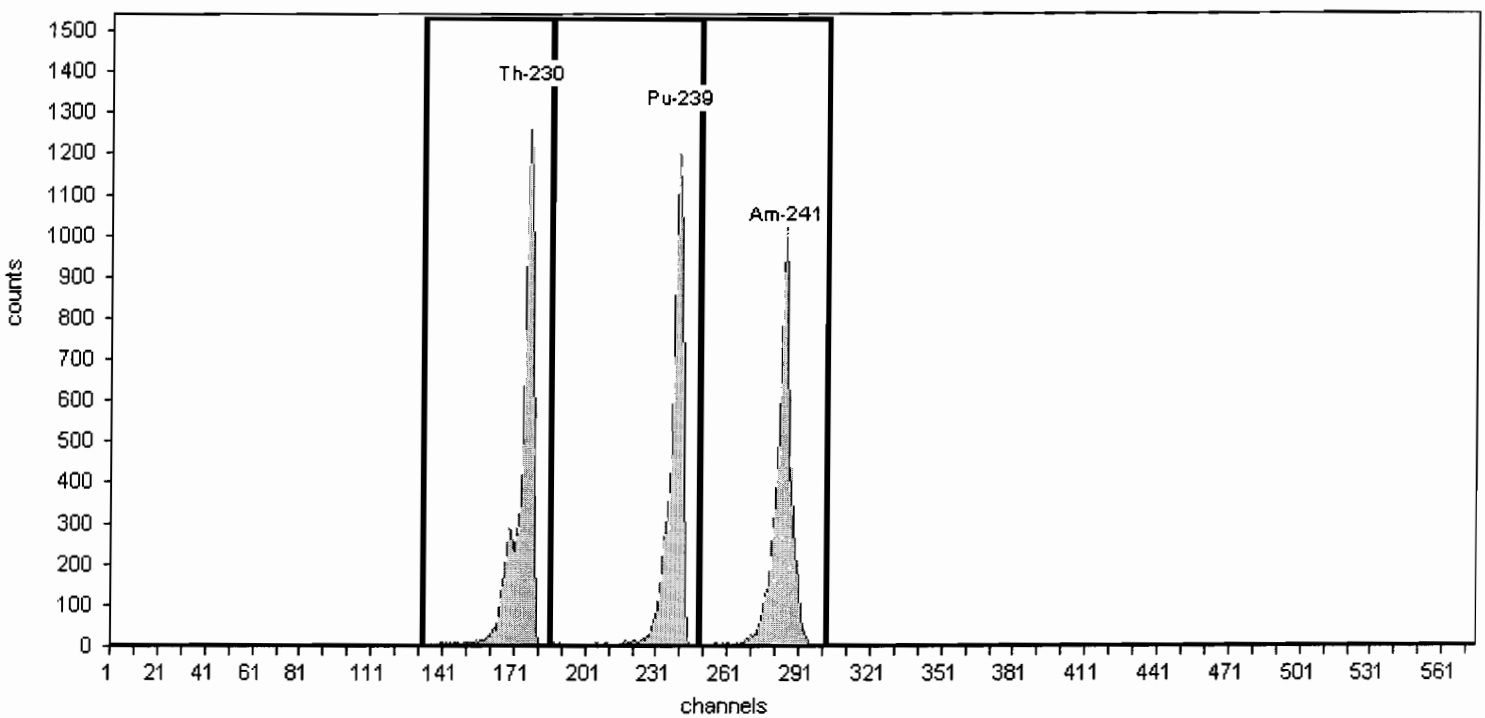
Certificate ID: 82244-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV116 , SN: 49-034G1
Acquisition Start Date: 6/2/2011 12:26:49PM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 27.29% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	7,288.00	121.47
Pu-239	240	5.16	186	249	6,563.00	109.38
Am-241	284	5.49	249	303	6,741.00	112.35

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:05:06PM 7/25/2011

Calibration

Name: June2011_AV117
Description:
Detector: AV117

Calibration Date: 6/10/2011 2:54:57PM
Analyst: 60040

Source Info

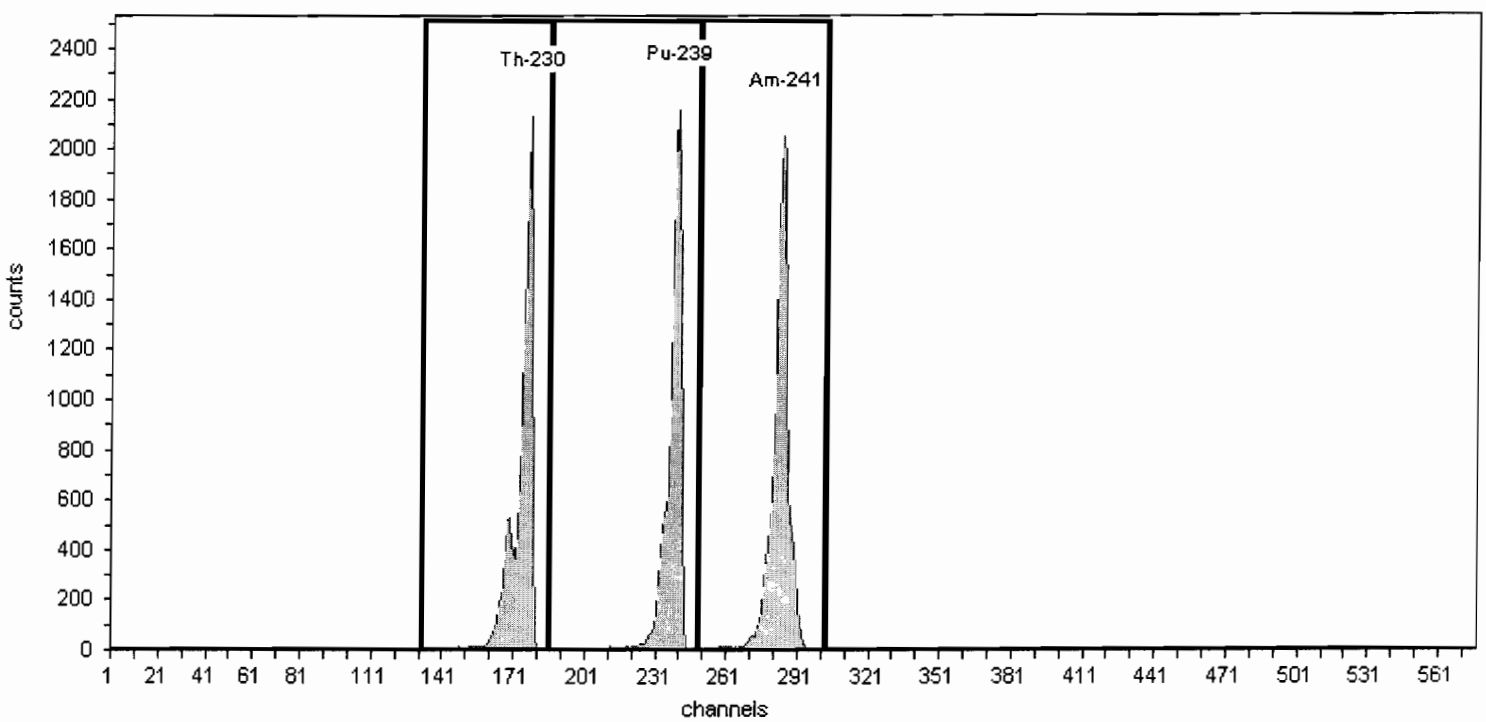
Certificate ID: 82246-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV117 , SN: 49-037X4
Acquisition Start Date: 6/6/2011 8:28:48AM
Live Time: 140.00 min.
Real Time: 145.89 min.
Efficiency: 25.98% +/- 0.38% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	12,189.00	87.06
Pu-239	240	5.16	186	249	11,531.00	82.36
Am-241	284	5.49	249	303	13,206.00	94.33

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:05:10PM 7/25/2011

Calibration

Name: June2011_AV117_ICV
Description:
Detector: AV117

Calibration Date: 6/10/2011 2:55:11PM
Analyst: 60040

Source Info

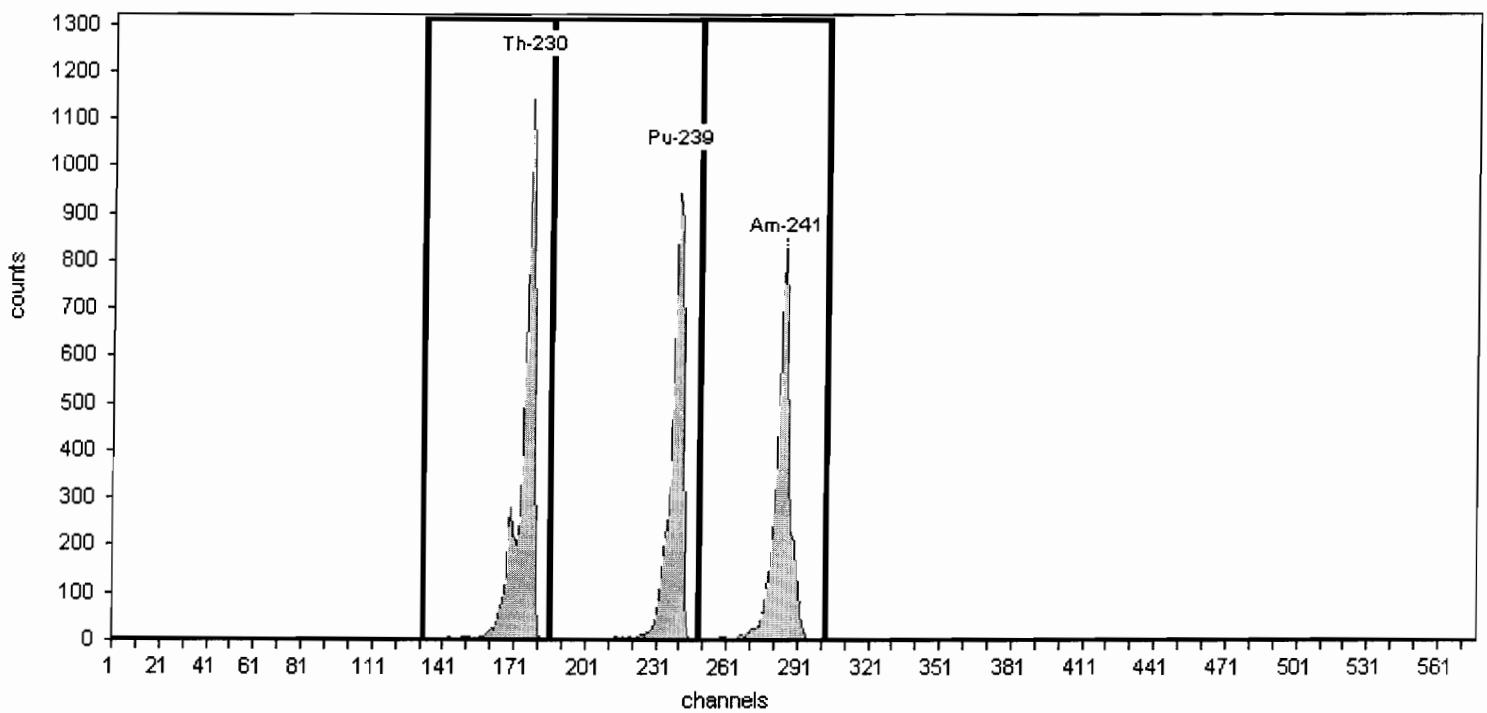
Certificate ID: 82245-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV117 , SN: 49-037X4
Acquisition Start Date: 6/6/2011 1:17:40PM
Live Time: 60.00 min.
Real Time: 61.08 min.
Efficiency: 26.56% +/- 0.49% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,427.00	107.12
Pu-239	240	5.16	186	249	5,175.00	86.25
Am-241	284	5.49	249	303	5,315.00	88.58

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:05:18PM 7/25/2011

Calibration

Name: June2011_AV118
Description:
Detector: AV118

Calibration Date: 6/10/2011 2:55:22PM
Analyst: 60040

Source Info

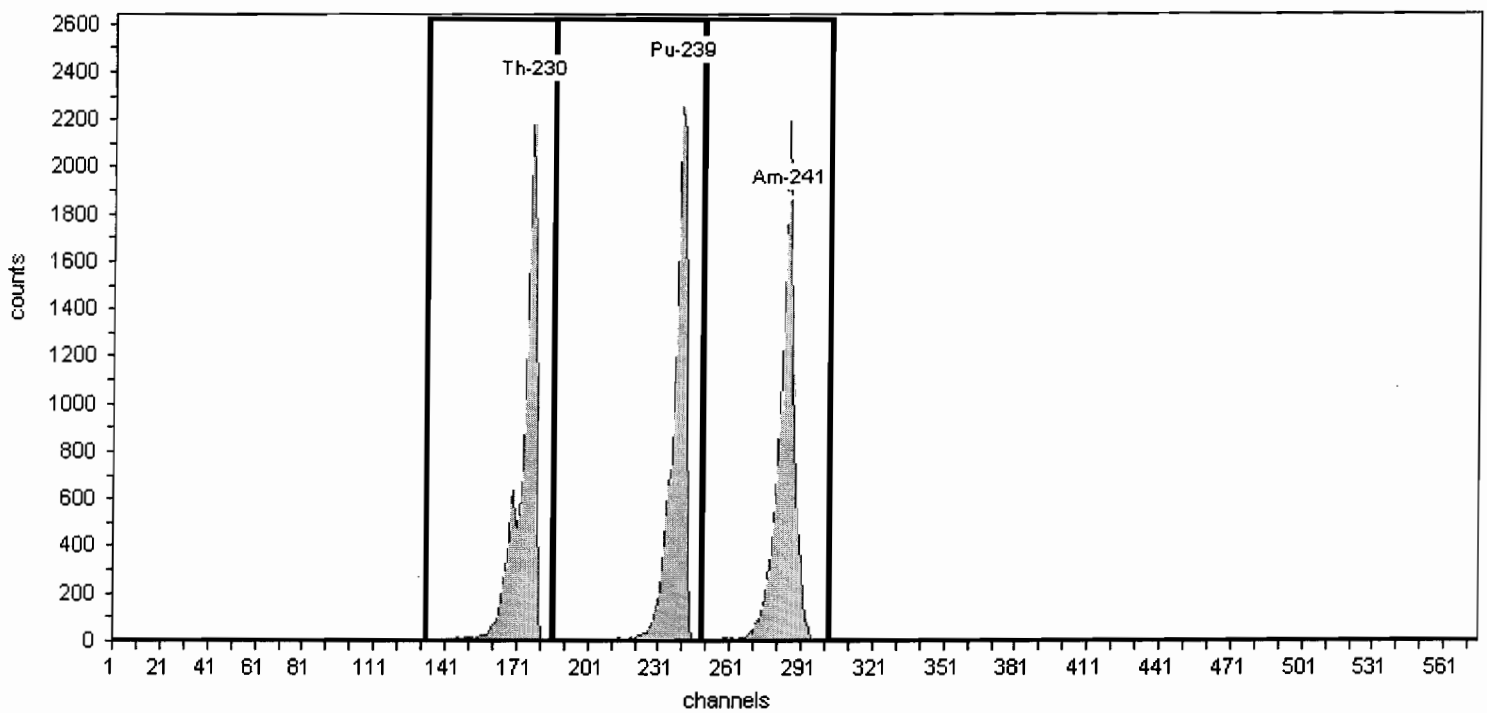
Certificate ID: 82247-334
Prepared by: Analytics

Certification Date: 6/10/2010 12:00:00PM
Description:

Acquisition

Detector: AV118 , SN: 49-037F4
Acquisition Start Date: 6/6/2011 8:29:26AM
Live Time: 140.00 min.
Real Time: 145.89 min.
Efficiency: 27.08% +/- 0.36% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	13,720.00	98.00
Pu-239	240	5.16	186	249	13,401.00	95.72
Am-241	284	5.49	249	303	14,526.00	103.76

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:05:22PM 7/25/2011

Calibration

Name: June2011_AV118_ICV
Description:
Detector: AV118

Calibration Date: 6/10/2011 2:55:36PM
Analyst: 60040

Source Info

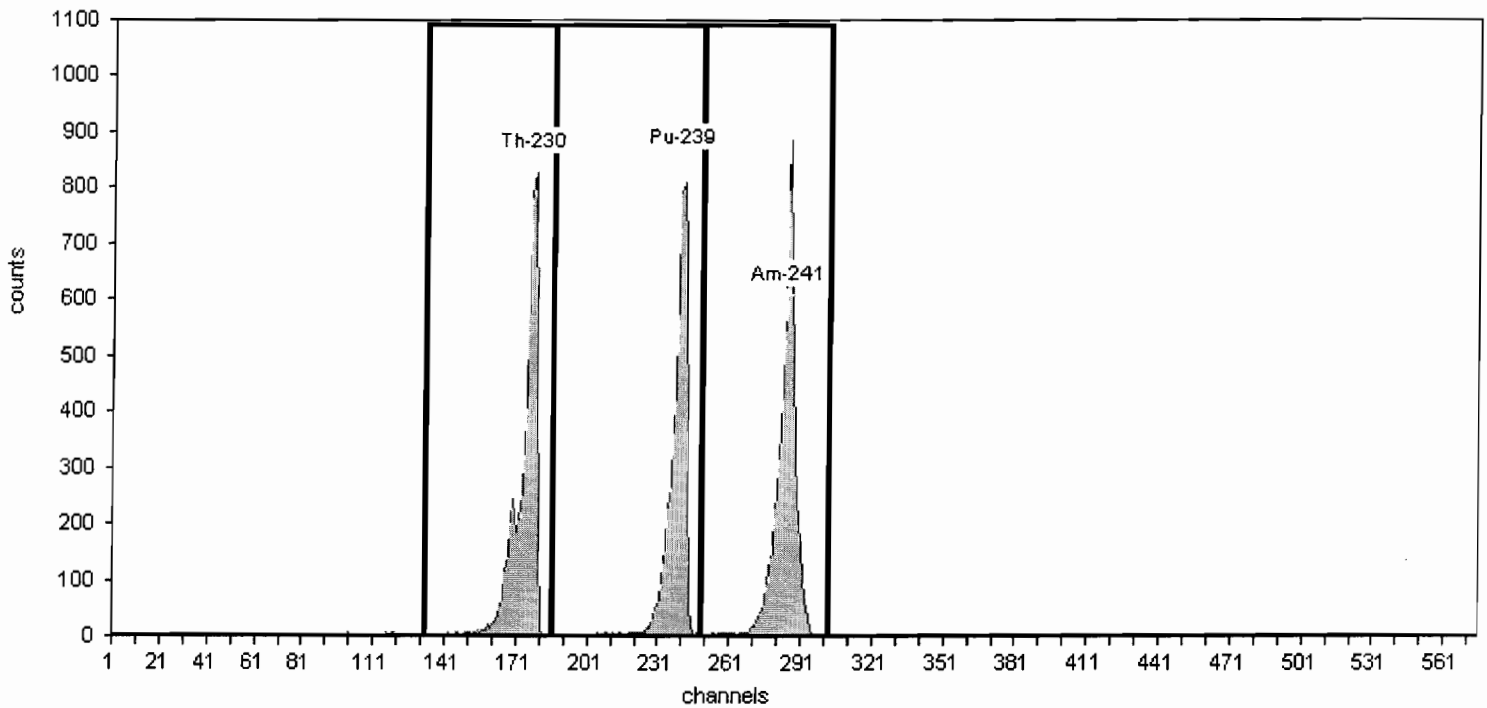
Certificate ID: 82246-334
Prepared by: Analytics

Certification Date: 6/9/2010 12:00:00PM
Description:

Acquisition

Detector: AV118 , SN: 49-037F4
Acquisition Start Date: 6/6/2011 1:18:06PM
Live Time: 60.00 min.
Real Time: 61.08 min.
Efficiency: 26.81% +/- 0.50% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,403.00	90.05
Pu-239	240	5.16	186	249	5,085.00	84.75
Am-241	284	5.49	249	303	5,842.00	97.37

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:05:31PM 7/25/2011

Calibration

Name: June2011_AV119a
Description:
Detector: AV119

Calibration Date: 6/29/2011 3:57:22PM
Analyst: 60040

Source Info

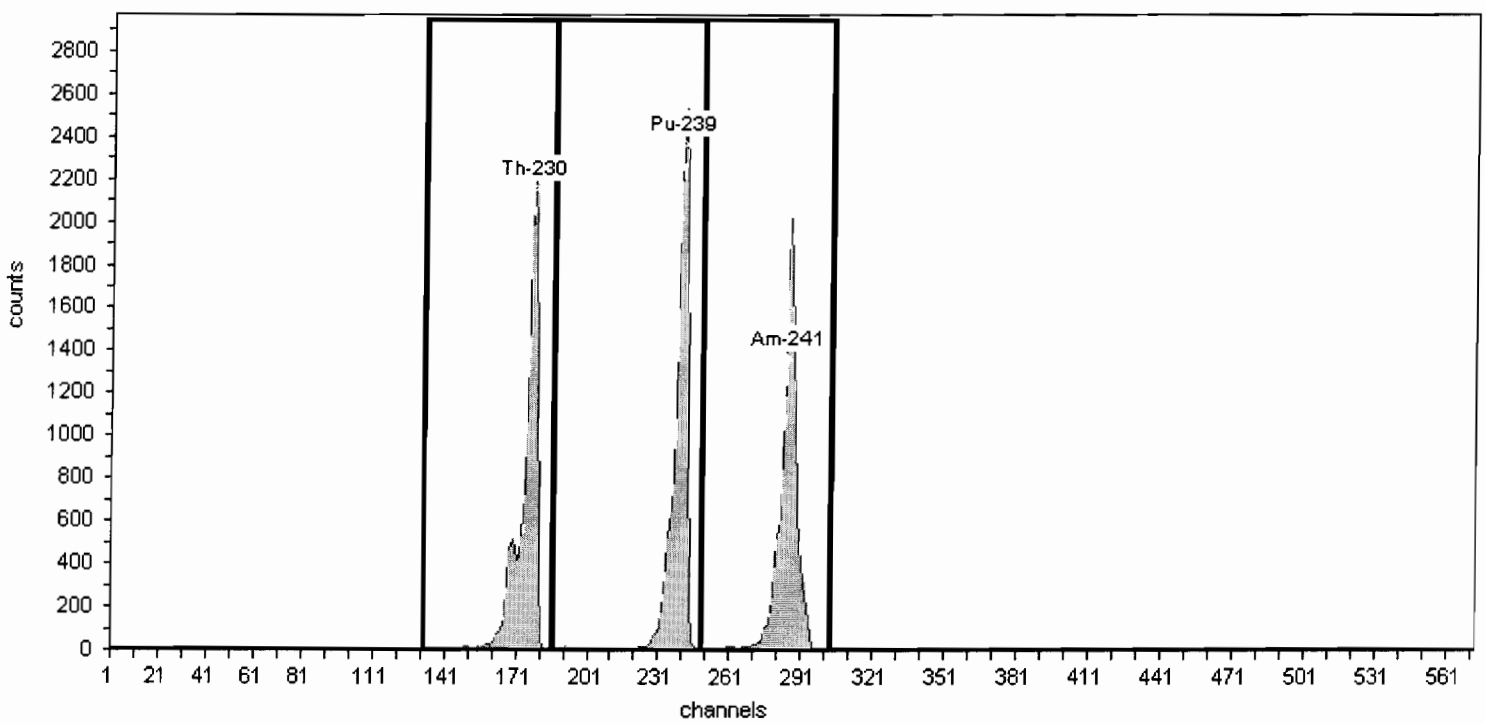
Certificate ID: 82234-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV119 , SN: 49-037G6
Acquisition Start Date: 6/29/2011 1:29:25PM
Live Time: 140.00 min.
Real Time: 140.01 min.
Efficiency: 27.80% +/- 0.38% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	13,047.00	93.19
Pu-239	240	5.16	186	249	13,998.00	99.99
Am-241	284	5.49	249	303	13,289.00	94.92

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:05:35PM 7/25/2011

Calibration

Name: June2011_AV119a_ICV
Description:
Detector: AV119

Calibration Date: 6/29/2011 5:16:45PM
Analyst: 60040

Source Info

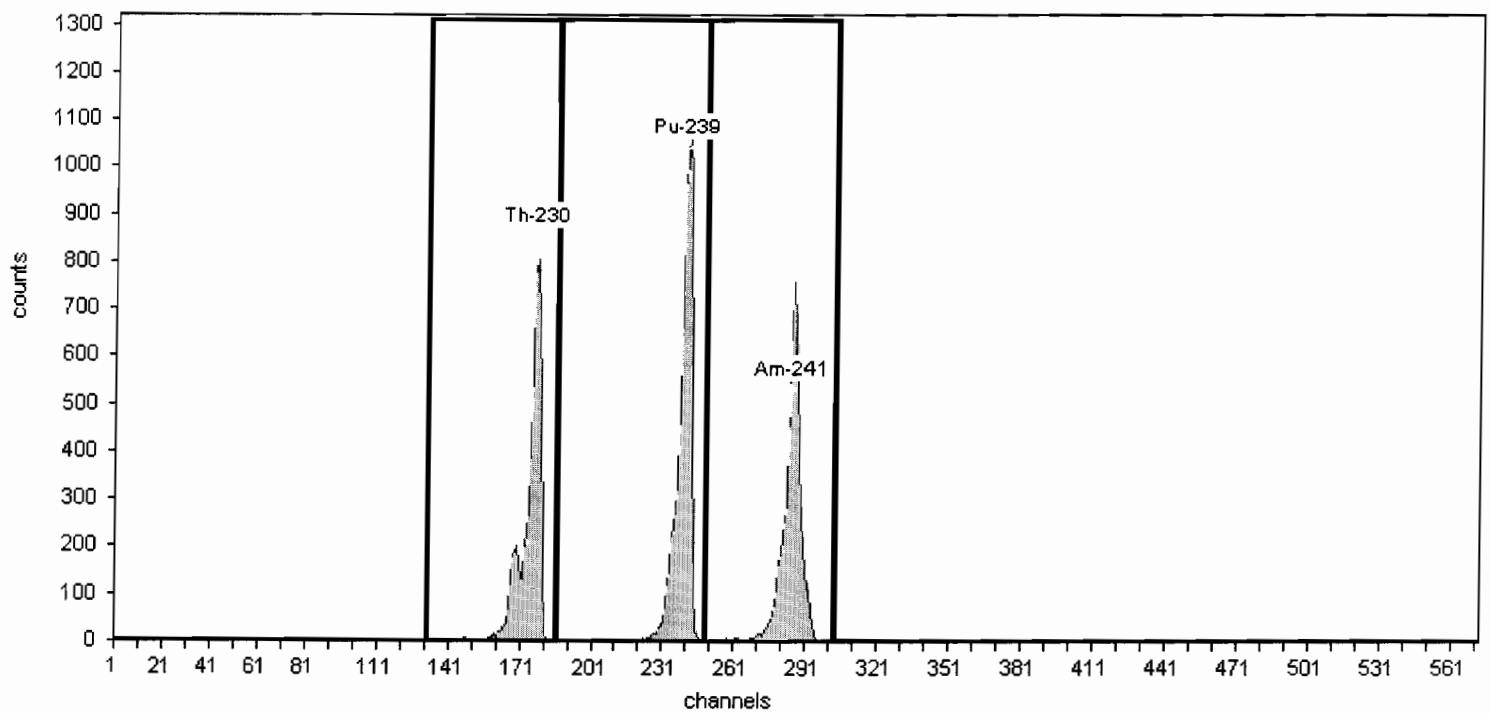
Certificate ID: 82233-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV119 , SN: 49-037G6
Acquisition Start Date: 6/29/2011 4:15:06PM
Live Time: 60.00 min.
Real Time: 60.00 min.
Efficiency: 27.24% +/- 0.51% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	4,778.00	79.63
Pu-239	240	5.16	186	249	6,026.00	100.43
Am-241	284	5.49	249	303	5,008.00	83.47

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Yearly Calibrations
Alpha Vision
February 2012
AV1-146

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV1						
Dec2011_AV1	12/15/2011 9:30:49 AM	82232-334	0.2769	Pass		
AV2						
Dec2011_AV2	12/15/2011 9:31:52 AM	82233-334	0.2696	Pass		
AV3						
June2011_AV3	6/1/2011 2:07:22 PM	63508A-334	0.2671	Pass		
AV4						
June2011_AV4	6/1/2011 2:07:26 PM	63509A-334	0.2679	Pass		
AV6						
June2011_AV6	6/1/2011 2:08:00 PM	82233-334	0.2795	Pass		
AV7						
June2011_AV7	6/1/2011 2:08:04 PM	82234-334	0.2763	Pass		
AV8						
June2011_AV8	6/1/2011 2:08:08 PM	82235-334	0.2799	Pass		
AV9						
Feb2012_AV9a	2/22/2012 5:00:30 PM	82240-334	0.2776	Pass		
Feb2012_AV9a_ICV	2/22/2012 8:32:32 PM	82236-334	0.2761	Pass	99.4615	Pass
AV10						
Feb2012_AV10a	2/22/2012 8:32:27 PM	82241-334	0.2709	Pass		
Feb2012_AV10a_ICV	2/23/2012 11:15:43 AM	82237-334	0.2717	Pass	100.292	Pass
AV11						
Dec2011_AV11	12/15/2011 1:33:27 PM	82242-334	0.2749	Pass		
AV12						
Feb2012_AV12a	2/22/2012 5:00:57 PM	82243-334	0.2682	Pass		
Feb2012_AV12a_ICV	2/22/2012 8:32:35 PM	82238-334	0.2707	Pass	100.940	Pass
AV13						
June2011_AV13a	6/1/2011 2:12:53 PM	82240-334	0.2795	Pass		
AV14						
Dec2011_AV14	12/15/2011 9:32:53 AM	82245-334	0.2606	Pass		
AV15						
June2011_AV15	6/1/2011 2:13:10 PM	82242-334	0.2731	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV16						
Feb2012_AV16a	2/22/2012 5:01:24 PM	82247-334	0.2769	Pass		
Feb2012_AV16a_ICV	2/22/2012 6:32:38 PM	82243-334	0.2707	Pass	97.7705	Pass
AV17						
June2011A_AV17	6/10/2011 2:02:28 PM	82244-334	0.2619	Pass		
AV18						
Feb2012_AV18a	2/22/2012 5:01:33 PM	82233-334	0.2699	Pass		
Feb2012_AV18a_ICV	2/22/2012 6:32:42 PM	82247-334	0.2566	Pass	95.0864	Pass
AV19						
Dec2011_AV19	12/6/2011 9:35:31 AM	82234-334	0.2724	Pass		
AV20						
June2011_AV20	6/1/2011 2:13:04 PM	82247-334	0.2701	Pass		
AV21						
June2011_AV21b	6/29/2011 3:56:43 PM	63508A-334	0.2596	Pass		
AV22						
Dec2011_AV22	2/21/2012 2:57:59 PM	82237-334	0.2680	Pass		
AV23						
June2011_AV23	6/2/2011 6:09:19 AM	63508A-334	0.2563	Pass		
AV24						
Dec2011_AV24	12/15/2011 9:33:47 AM	82240-334	0.2717	Pass		
AV43						
June2011A_AV43	6/20/2011 1:52:02 AM	82232-334	0.2786	Pass		
AV44						
June2011A_AV44	6/20/2011 8:43:44 AM	82233-334	0.2708	Pass		
AV45						
June2011_AV45	6/2/2011 6:09:33 AM	82234-334	0.2811	Pass		
AV46						
February2012_AV46	2/24/2012 9:01:09 AM	82244-334	0.2721	Pass		
Feb2012_AV46_ICV	2/24/2012 12:25:10 PM	82236-334	0.2768	Pass	101.742	Pass
AV47						
June2011A_AV47	6/20/2011 8:43:55 AM	82236-334	0.2691	Pass		
AV48						
June2011A_AV48	2/21/2012 2:58:50 PM	82237-334	0.2748	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV49						
June2011_AV49	6/2/2011 6:09:47 AM	82238-334	0.2849	Pass		
AV50						
February2012_AV50	2/24/2012 9:01:31 AM	82232-334	0.2822	Pass		
Feb2012_AV50_ICV	2/24/2012 12:25:26 PM	82240-334	0.2783	Pass	98.6252	Pass
AV51						
June2011_AV51	6/2/2011 6:09:53 AM	82240-334	0.2771	Pass		
AV52						
June2011_AV52	6/2/2011 6:09:56 AM	82241-334	0.2870	Pass		
AV53						
Dec2011_AV53	12/15/2011 9:35:01 AM	82235-334	0.2846	Pass		
AV54						
June2011_AV54	6/2/2011 6:10:00 AM	82243-334	0.2719	Pass		
AV55						
June2011A_AV55	6/20/2011 8:44:19 AM	82244-334	0.2685	Pass		
AV56						
Dec2011_AV56	12/15/2011 9:36:08 AM	82238-334	0.2691	Pass		
AV57						
Dec2011_AV57	12/13/2011 9:33:31 AM	82240-334	0.2792	Pass		
AV58						
February2012_AV58	2/24/2012 9:01:54 AM	82241-334	0.2829	Pass		
Feb2012_AV58_ICV	2/24/2012 12:25:49 PM	63507-334	0.2651	Pass	93.6999	Fail
Feb2012_AV58a_ICV	2/24/2012 3:16:31 PM	82232-334	0.2863	Pass	101.213	Pass
Feb2012_AV58b_ICV	2/24/2012 4:28:08 PM	82232-334	0.2853	Pass	100.844	Pass
AV59						
February2012_AV59	2/24/2012 9:02:17 AM	82242-334	0.2794	Pass		
Feb2012_AV59_ICV	2/24/2012 12:26:03 PM	63508A-334	0.2697	Pass	96.5361	Pass
AV60						
May2011_AV60	6/2/2011 11:03:44 AM	63507-334	0.2647	Pass		
AV61						
June2011_AV61	6/20/2011 2:14:49 PM	63508A-334	0.2663	Pass		
AV62						
May2011_AV62	6/2/2011 11:15:48 AM	63509A-334	0.2723	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV63						
Feb2012_AV63	2/23/2012 4:05:57 PM	82246-334	0.2686	Pass		
Feb2012_AV63_ICV	2/23/2012 5:15:45 PM	82234-334	0.2798	Pass	104.191	Pass
AV64						
May2011_AV64	6/2/2011 11:16:28 AM	82233-334	0.2832	Pass		
AV65						
Feb2012_AV65	2/23/2012 4:06:15 PM	82232-334	0.2841	Pass		
Feb2012_AV65_ICV	2/23/2012 5:15:50 PM	82236-334	0.2714	Pass	95.5197	Pass
AV66						
Dec2011_AV66	12/13/2011 9:35:41 AM	82233-334	0.2772	Pass		
AV67						
May2011_AV67	6/2/2011 11:17:07 AM	82236-334	0.2930	Pass		
AV68						
May2011_AV68	2/21/2012 2:59:22 PM	82237-334	0.2733	Pass		
AV69						
June2011_AV69	6/21/2011 2:25:40 PM	82238-334	0.2749	Pass		
AV70						
June2011_AV70	6/21/2011 2:26:58 PM	82239-334	0.2763	Pass		
AV71						
May2011_AV71	6/2/2011 11:17:45 AM	82240-334	0.2741	Pass		
AV72						
May2011_AV72	6/2/2011 11:17:59 AM	82241-334	0.2892	Pass		
AV73						
Dec2011_AV73	12/16/2011 2:11:57 PM	82241-334	0.2786	Pass		
AV74						
Dec2011_AV74b	12/13/2011 12:09:06 PM	82242-334	0.2738	Pass		
AV75						
May2011_AV75	6/2/2011 11:18:19 AM	82244-334	0.2642	Pass		
AV77						
May2011_AV77	6/2/2011 11:18:32 AM	82246-334	0.2664	Pass		
AV78						
May2011_AV78	6/2/2011 11:18:45 AM	82247-334	0.2787	Pass		
AV79						
June2011_AV79c	6/29/2011 3:57:04 PM	82232-334	0.2634	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%) Recov	(+/-5%)
AV80 May2011_AV80	6/10/2011 5:01:32 PM	63507-334	0.2579	Pass	
AV81 Dec2011_AV81	12/15/2011 12:13:48 PM	82233-334	0.2814	Pass	
AV82 May2011_AV82	6/28/2011 9:27:42 PM	63509A-334	0.2676	Pass	
AV83 May2011_AV83	6/28/2011 9:28:42 PM	82232-334	0.2783	Pass	
AV84 May2011_AV84	6/28/2011 9:29:52 PM	82233-334	0.2740	Pass	
AV85 May2011_AV85	6/28/2011 9:30:57 PM	82234-334	0.2852	Pass	
AV86 May2011_AV86	6/28/2011 9:31:44 PM	82235-334	0.2811	Pass	
AV87 June2011_AV87	6/21/2011 2:25:24 PM	82236-334	0.2944	Pass	
AV88 May2011_AV88	2/21/2012 2:59:57 PM	82237-334	0.2736	Pass	
AV89 May2011_AV89	6/2/2011 11:21:41 AM	82238-334	0.2698	Pass	
AV90 May2011_AV90	6/28/2011 9:34:16 PM	82239-334	0.2753	Pass	
AV92 May2011_AV92	6/28/2011 9:35:11 PM	82241-334	0.2775	Pass	
AV93 May2011_AV93	6/10/2011 5:05:03 PM	82242-334	0.2772	Pass	
AV94 June2011_AV94a	6/29/2011 3:57:09 PM	82247-334	0.2751	Pass	
AV95 June2011_AV95b	6/30/2011 8:32:04 PM	82244-334	0.2663	Pass	
AV96 June2011_AV96	6/21/2011 2:25:55 PM	82245-334	0.2743	Pass	
AV97 May2011_AV97	6/28/2011 9:40:29 PM	82246-334	0.2715	Pass	

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency (20-32%)	Recov (+/-5%)
AV98 May2011_AV98	6/28/2011 9:41:09 PM	82247-334	0.2807	Pass
AV99 Dec2011_AV99a	12/15/2011 1:34:42 PM	82236-334	0.2681	Pass
AV100 June2011_AV100	6/10/2011 2:41:33 PM	63507-334	0.2630	Pass
AV101 June2011_AV101	6/10/2011 2:42:11 PM	63508A-334	0.2594	Pass
AV102 June2011_AV102	6/10/2011 2:42:28 PM	63509A-334	0.2668	Pass
AV103 June2011_AV103a	2/21/2012 3:00:31 PM	82237-334	0.2722	Pass
AV104 June2011_AV104	6/10/2011 2:45:37 PM	82233-334	0.2711	Pass
AV105 June2011_AV105	6/10/2011 2:48:33 PM	82234-334	0.2601	Pass
AV106 June2011_AV106	6/10/2011 2:49:36 PM	82235-334	0.2828	Pass
AV107 June2011_AV107	6/10/2011 2:49:58 PM	82236-334	0.2809	Pass
AV108 Dec2011_AV108a	12/15/2011 4:14:23 PM	82246-334	0.2763	Pass
AV109 June2011_AV109	6/10/2011 2:50:52 PM	82238-334	0.2642	Pass
AV110 June2011_AV110	6/10/2011 2:51:15 PM	82239-334	0.2761	Pass
AV111 June2011_AV111	6/10/2011 2:51:42 PM	82240-334	0.2742	Pass
AV112 June2011_AV112	6/10/2011 2:52:10 PM	82241-334	0.2669	Pass
AV113 June2011_AV113a	6/29/2011 8:19:17 PM	82247-334	0.2797	Pass
AV114 June2011_AV114	6/10/2011 2:53:57 PM	82243-334	0.2672	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV115 June2011_AV115	6/10/2011 2:57:31 PM	82244-334	0.2713	Pass		
AV116 May2011_AV116	6/2/2011 11:22:31 AM	82245-334	0.2802	Pass		
AV117 June2011_AV117	6/10/2011 2:54:57 PM	82246-334	0.2598	Pass		
AV118 June2011_AV118	6/10/2011 2:55:22 PM	82247-334	0.2708	Pass		
AV119 June2011_AV119a	6/29/2011 3:57:22 PM	82234-334	0.2780	Pass		
AV120 June2011_AV120	6/10/2011 2:56:12 PM	63507-334	0.2673	Pass		
AV121 June2011_AV121	6/10/2011 2:58:09 PM	63508A-334	0.2680	Pass		
AV122 June2011_AV122	6/10/2011 2:58:33 PM	63509A-334	0.2633	Pass		
AV123 June2011_AV123a	6/21/2011 2:27:18 PM	82232-334	0.2737	Pass		
AV124 June2011_AV124a	6/21/2011 2:28:12 PM	82233-334	0.2650	Pass		
AV125 June2011_AV125a	6/21/2011 2:26:25 PM	82234-334	0.2746	Pass		
AV126 June2011_AV126	6/3/2011 3:29:01 PM	82235-334	0.2754	Pass		
AV127 June2011A_AV127	6/28/2011 9:47:50 PM	82236-334	0.2756	Pass		
AV128 June2011_AV128	2/21/2012 3:01:06 PM	82237-334	0.2692	Pass		
AV130 June2011_AV130	6/3/2011 3:29:19 PM	82239-334	0.2686	Pass		
AV131 February2012_AV131	2/24/2012 9:02:44 AM	82238-334	0.2733	Pass		
Feb2012_AV131_ICV	2/24/2012 12:26:24 PM	82245-334	0.2767	Pass	101.234	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV132						
June2011_AV132a	6/30/2011 11:37:39 AM	82247-334	0.2712	Pass		
AV133						
Feb2012_AV133	2/24/2012 1:40:22 PM	82241-334	0.2654	Pass		
Feb2012_AV133_ICV	2/24/2012 3:16:36 PM	82247-334	0.2639	Pass	99.4605	Pass
AV134						
June2011_AV134	6/3/2011 3:29:39 PM	82243-334	0.2826	Pass		
AV135						
June2011_AV135	6/3/2011 3:29:47 PM	82244-334	0.2626	Pass		
AV136						
June2011_AV136	6/3/2011 3:29:51 PM	82245-334	0.2706	Pass		
AV137						
June2011_AV137	6/3/2011 3:29:43 PM	82246-334	0.2746	Pass		
AV138						
June2011_AV138	6/3/2011 3:29:55 PM	82247-334	0.2648	Pass		
AV139						
June2011_AV139a	6/29/2011 3:57:26 PM	82235-334	0.2713	Pass		
AV140						
June2011_AV140	6/3/2011 3:30:04 PM	63507-334	0.2557	Pass		
AV141						
June2011_AV141	6/3/2011 3:30:09 PM	63508A-334	0.2581	Pass		
AV142						
June2011_AV142	6/3/2011 3:30:14 PM	63509A-334	0.2631	Pass		
AV143						
Dec2011_AV143	12/15/2011 1:36:38 PM	82235-334	0.2708	Pass		
AV144						
June2011_AV144	6/10/2011 3:04:53 PM	82233-334	0.2723	Pass		
AV145						
June2011_AV145	6/10/2011 3:05:03 PM	82234-334	0.2749	Pass		
AV146						
June2011_AV146	6/10/2011 3:05:14 PM	82235-334	0.2748	Pass		

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

June Alpha Spec Calibrations

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV1						
	6/1/2011 2:07:17 PM	63506-334	0.2689	Pass		
	6/1/2011 4:06:00 PM	63509A-334	0.2635	Pass	98.017	Pass
AV3						
	6/1/2011 2:07:22 PM	63508A-334	0.2671	Pass		
	6/1/2011 4:06:14 PM	63507-334	0.2659	Pass	99.539	Pass
AV4						
	6/1/2011 2:07:26 PM	63509A-334	0.2679	Pass		
	6/1/2011 4:06:27 PM	63508A-334	0.2631	Pass	98.209	Pass
AV6						
	6/1/2011 2:08:00 PM	82233-334	0.2795	Pass		
	6/1/2011 4:06:40 PM	82232-334	0.2848	Pass	101.88	Pass
AV7						
	6/1/2011 2:08:04 PM	82234-334	0.2783	Pass		
	6/1/2011 4:06:58 PM	82233-334	0.2732	Pass	98.157	Pass
AV8						
	6/1/2011 2:08:08 PM	82235-334	0.2799	Pass		
	6/1/2011 4:07:14 PM	82234-334	0.2798	Pass	99.955	Pass
AV9						
	6/1/2011 2:10:02 PM	82236-334	0.2743	Pass		
	6/1/2011 4:07:30 PM	82235-334	0.2766	Pass	100.82	Pass
AV10						
	6/1/2011 2:10:22 PM	82237-334	0.2625	Pass		
	6/1/2011 4:07:43 PM	82236-334	0.2723	Pass	103.70	Pass
AV11						
	6/10/2011 2:02:03 PM	82238-334	0.2759	Pass		
	6/10/2011 3:55:36 PM	82237-334	0.2712	Pass	98.291	Pass
AV12						
	6/1/2011 2:12:35 PM	82239-334	0.2713	Pass		
	6/1/2011 4:08:49 PM	82238-334	0.2741	Pass	101.04	Pass
AV13						
	6/1/2011 2:12:53 PM	82240-334	0.2795	Pass		
	6/1/2011 4:09:02 PM	82239-334	0.2747	Pass	98.276	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV14						
	6/10/2011 2:02:15 PM	82241-334	0.2799	Pass		
	6/10/2011 3:55:45 PM	82240-334	0.2727	Pass	97.425	Pass
AV15						
	6/1/2011 2:13:10 PM	82242-334	0.2731	Pass		
	6/1/2011 4:09:33 PM	82241-334	0.2708	Pass	99.161	Pass
AV16						
	6/1/2011 2:13:39 PM	82243-334	0.2692	Pass		
	6/1/2011 4:09:45 PM	82242-334	0.2732	Pass	101.48	Pass
AV17						
	6/10/2011 2:02:28 PM	82244-334	0.2619	Pass		
	6/10/2011 3:55:50 PM	82243-334	0.2607	Pass	99.547	Pass
AV18						
	6/1/2011 2:12:48 PM	82245-334	0.2640	Pass		
	6/1/2011 4:10:09 PM	82244-334	0.2576	Pass	97.578	Pass
AV19						
	6/10/2011 2:48:01 PM	82246-334	0.2592	Pass		
	6/20/2011 11:48:18 AM	82245-334	0.2695	Pass	103.95	Pass
AV20						
	6/1/2011 2:13:04 PM	82247-334	0.2701	Pass		
	6/1/2011 4:10:40 PM	82246-334	0.2675	Pass	99.056	Pass
AV21						
	6/29/2011 3:56:43 PM	63508A-334	0.2596	Pass		
	6/29/2011 5:11:24 PM	63507-334	0.2611	Pass	100.59	Pass
AV22						
	6/10/2011 4:38:28 PM	63507-334	0.2595	Pass		
	6/20/2011 3:03:26 PM	63506-334	0.2514	Pass	96.881	Pass
AV23						
	6/2/2011 6:09:19 AM	63508A-334	0.2563	Pass		
	6/2/2011 5:26:58 PM	63507-334	0.2560	Pass	99.882	Pass
AV24						
	6/2/2011 6:09:22 AM	63509A-334	0.2639	Pass		
	6/2/2011 5:27:05 PM	63508A-334	0.2616	Pass	99.111	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV43						
	6/20/2011 1:52:02 AM	82232-334	0.2786	Pass		
	6/20/2011 4:09:28 AM	63509A-334	0.2684	Pass	96.334	Pass
AV44						
	6/20/2011 8:43:44 AM	82233-334	0.2708	Pass		
	6/20/2011 12:55:44 PM	82232-334	0.2760	Pass	101.91	Pass
AV45						
	6/2/2011 6:09:33 AM	82234-334	0.2811	Pass		
	6/2/2011 5:27:08 PM	82233-334	0.2743	Pass	97.568	Pass
AV46						
	6/2/2011 6:09:37 AM	82235-334	0.2842	Pass		
	6/2/2011 5:27:12 PM	82234-334	0.2875	Pass	101.13	Pass
AV47						
	6/20/2011 8:43:55 AM	82236-334	0.2691	Pass		
	6/20/2011 12:55:48 PM	82235-334	0.2785	Pass	103.49	Pass
AV48						
	6/20/2011 8:44:03 AM	82237-334	0.2671	Pass		
	6/28/2011 9:18:29 PM	82236-334	0.2720	Pass	101.82	Pass
AV49						
	6/2/2011 6:09:47 AM	82238-334	0.2849	Pass		
	6/2/2011 5:27:16 PM	82237-334	0.2745	Pass	96.349	Pass
AV50						
	6/20/2011 8:44:13 AM	82239-334	0.2730	Pass		
	6/20/2011 12:55:56 PM	82238-334	0.2754	Pass	100.88	Pass
AV51						
	6/2/2011 6:09:53 AM	82240-334	0.2771	Pass		
	6/2/2011 5:27:20 PM	82239-334	0.2704	Pass	97.595	Pass
AV52						
	6/2/2011 6:09:56 AM	82241-334	0.2870	Pass		
	6/2/2011 5:27:24 PM	82240-334	0.2893	Pass	100.78	Pass
AV54						
	6/2/2011 6:10:00 AM	82243-334	0.2719	Pass		
	6/2/2011 5:27:29 PM	82242-334	0.2763	Pass	101.63	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV55						
	6/20/2011 8:44:19 AM	82244-334	0.2685	Pass		
	6/20/2011 12:56:00 PM	82243-334	0.2693	Pass	100.32	Pass
AV57						
	6/2/2011 6:10:07 AM	82246-334	0.2733	Pass		
	6/2/2011 5:27:35 PM	82245-334	0.2745	Pass	100.46	Pass
AV58						
	6/2/2011 6:10:11 AM	82247-334	0.2842	Pass		
	6/2/2011 5:27:39 PM	82246-334	0.2740	Pass	96.420	Pass
AV59						
	6/29/2011 3:56:50 PM	63509A-334	0.2722	Pass		
	6/29/2011 5:11:40 PM	63508A-334	0.2694	Pass	98.981	Pass
AV60						
	6/2/2011 11:03:44 AM	63507-334	0.2647	Pass		
	6/2/2011 5:27:47 PM	63506-334	0.2570	Pass	97.082	Pass
AV61						
	6/20/2011 2:14:49 PM	63508A-334	0.2663	Pass		
	6/20/2011 3:32:40 PM	63507-334	0.2635	Pass	98.951	Pass
AV62						
	6/2/2011 11:15:48 AM	63509A-334	0.2723	Pass		
	6/2/2011 6:59:03 PM	63508A-334	0.2697	Pass	99.053	Pass
AV63						
	6/2/2011 11:16:12 AM	82232-334	0.2767	Pass		
	6/2/2011 5:27:53 PM	63509A-334	0.2637	Pass	95.302	Pass
AV64						
	6/2/2011 11:16:26 AM	82233-334	0.2832	Pass		
	6/2/2011 5:27:57 PM	82232-334	0.2867	Pass	101.23	Pass
AV65						
	6/2/2011 11:16:39 AM	82234-334	0.2798	Pass		
	6/2/2011 6:58:45 PM	82233-334	0.2773	Pass	99.094	Pass
AV66						
	6/2/2011 11:16:51 AM	82235-334	0.2808	Pass		
	6/2/2011 6:58:50 PM	82234-334	0.2803	Pass	99.816	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV67						
	6/2/2011 11:17:07 AM	82236-334	0.2930	Pass		
	6/2/2011 5:28:01 PM	82235-334	0.2955	Pass	100.85	Pass
AV68						
	6/2/2011 11:17:18 AM	82237-334	0.2658	Pass		
	6/2/2011 5:28:05 PM	82236-334	0.2767	Pass	104.12	Pass
AV69						
	6/21/2011 2:25:40 PM	82238-334	0.2749	Pass		
	6/23/2011 1:18:22 PM	82237-334	0.2651	Pass	96.439	Pass
AV70						
	6/21/2011 2:26:58 PM	82239-334	0.2763	Pass		
	6/22/2011 2:20:23 AM	82238-334	0.2700	Pass	97.724	Pass
AV71						
	6/2/2011 11:17:45 AM	82240-334	0.2741	Pass		
	6/2/2011 6:59:06 PM	82239-334	0.2735	Pass	99.757	Pass
AV72						
	6/2/2011 11:17:59 AM	82241-334	0.2892	Pass		
	6/2/2011 6:59:09 PM	82240-334	0.2876	Pass	99.447	Pass
AV73						
	6/20/2011 2:14:44 PM	82242-334	0.2887	Pass		
	6/20/2011 3:32:43 PM	82241-334	0.2772	Pass	96.029	Pass
AV74						
	6/21/2011 2:25:05 PM	82243-334	0.2715	Pass		
	6/22/2011 2:21:05 AM	82242-334	0.2759	Pass	101.65	Pass
AV75						
	6/2/2011 11:18:19 AM	82244-334	0.2642	Pass		
	6/2/2011 5:28:13 PM	82243-334	0.2646	Pass	100.16	Pass
AV77						
	6/2/2011 11:18:32 AM	82246-334	0.2664	Pass		
	6/2/2011 6:58:56 PM	82245-334	0.2742	Pass	102.93	Pass
AV78						
	6/2/2011 11:18:45 AM	82247-334	0.2767	Pass		
	6/2/2011 6:59:12 PM	82246-334	0.2690	Pass	97.223	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV79						
	6/29/2011 3:57:04 PM	82232-334	0.2834	Pass		
	6/29/2011 5:16:27 PM	63509A-334	0.2703	Pass	95.357	Pass
AV80						
	6/10/2011 5:01:32 PM	63507-334	0.2579	Pass		
	6/10/2011 5:01:49 PM	63506-334	0.2530	Pass	98.103	Pass
AV82						
	6/28/2011 9:27:42 PM	63509A-334	0.2676	Pass		
	6/28/2011 9:28:02 PM	63508A-334	0.2631	Pass	98.329	Pass
AV83						
	6/28/2011 9:28:42 PM	82232-334	0.2783	Pass		
	6/28/2011 9:29:04 PM	63509A-334	0.2700	Pass	97.024	Pass
AV84						
	6/28/2011 9:29:52 PM	82233-334	0.2740	Pass		
	6/28/2011 9:30:12 PM	82232-334	0.2822	Pass	103.00	Pass
AV85						
	6/28/2011 9:30:57 PM	82234-334	0.2852	Pass		
	6/28/2011 9:31:17 PM	82233-334	0.2784	Pass	97.612	Pass
AV86						
	6/28/2011 9:31:44 PM	82235-334	0.2811	Pass		
	6/28/2011 9:32:01 PM	82234-334	0.2800	Pass	99.596	Pass
AV87						
	6/21/2011 2:25:24 PM	82236-334	0.2944	Pass		
	6/22/2011 2:21:15 AM	82235-334	0.2987	Pass	101.42	Pass
AV88						
	6/28/2011 9:33:11 PM	82237-334	0.2657	Pass		
	6/28/2011 9:33:31 PM	82236-334	0.2783	Pass	104.76	Pass
AV89						
	6/2/2011 11:21:41 AM	82238-334	0.2698	Pass		
	6/2/2011 6:58:53 PM	82237-334	0.2724	Pass	100.97	Pass
AV90						
	6/28/2011 9:34:16 PM	82239-334	0.2753	Pass		
	6/28/2011 9:34:38 PM	82238-334	0.2804	Pass	101.83	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV92						
	6/28/2011 9:35:11 PM	82241-334	0.2775	Pass		
	6/28/2011 9:35:31 PM	82240-334	0.2758	Pass	99.357	Pass
AV93						
	6/10/2011 5:05:03 PM	82242-334	0.2772	Pass		
	6/10/2011 5:05:28 PM	82241-334	0.2694	Pass	97.178	Pass
AV94						
	6/29/2011 3:57:09 PM	82247-334	0.2751	Pass		
	6/29/2011 5:16:31 PM	82246-334	0.2690	Pass	97.805	Pass
AV95						
	6/30/2011 8:32:04 PM	82244-334	0.2663	Pass		
	7/1/2011 9:11:14 AM	82243-334	0.2666	Pass	100.11	Pass
AV96						
	6/21/2011 2:25:55 PM	82245-334	0.2743	Pass		
	6/22/2011 2:21:15 AM	82244-334	0.2710	Pass	98.792	Pass
AV97						
	6/28/2011 9:40:29 PM	82246-334	0.2715	Pass		
	6/28/2011 9:40:49 PM	82245-334	0.2753	Pass	101.41	Pass
AV98						
	6/28/2011 9:41:09 PM	82247-334	0.2807	Pass		
	6/28/2011 9:41:29 PM	82246-334	0.2744	Pass	97.774	Pass
AV99						
	6/29/2011 3:57:13 PM	82233-334	0.2698	Pass		
	6/29/2011 5:16:35 PM	82232-334	0.2786	Pass	103.27	Pass
AV100						
	6/10/2011 2:41:33 PM	63507-334	0.2630	Pass		
	6/10/2011 2:57:02 PM	63506-334	0.2576	Pass	97.938	Pass
AV101						
	6/10/2011 2:42:11 PM	63508A-334	0.2594	Pass		
	6/10/2011 2:42:00 PM	63507-334	0.2644	Pass	101.90	Pass
AV102						
	6/10/2011 2:42:28 PM	63509A-334	0.2668	Pass		
	6/10/2011 2:42:43 PM	63508A-334	0.2635	Pass	98.782	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV103						
	6/29/2011 3:57:18 PM	82237-334	0.2644	Pass		
	6/29/2011 8:19:11 PM	82236-334	0.2718	Pass	102.81	Pass
AV104						
	6/10/2011 2:45:37 PM	82233-334	0.2711	Pass		
	6/10/2011 2:46:11 PM	82232-334	0.2737	Pass	100.94	Pass
AV105						
	6/10/2011 2:48:33 PM	82234-334	0.2601	Pass		
	6/10/2011 2:48:49 PM	82233-334	0.2562	Pass	98.471	Pass
AV106						
	6/10/2011 2:49:36 PM	82235-334	0.2828	Pass		
	6/10/2011 2:49:46 PM	82234-334	0.2796	Pass	98.873	Pass
AV107						
	6/10/2011 2:49:58 PM	82236-334	0.2809	Pass		
	6/10/2011 2:50:11 PM	82235-334	0.2786	Pass	99.167	Pass
AV108						
	6/10/2011 2:50:25 PM	82237-334	0.2880	Pass		
	6/10/2011 2:50:39 PM	82236-334	0.2848	Pass	98.912	Pass
AV109						
	6/10/2011 2:50:52 PM	82238-334	0.2642	Pass		
	6/10/2011 2:51:04 PM	82237-334	0.2699	Pass	102.16	Pass
AV110						
	6/10/2011 2:51:15 PM	82239-334	0.2761	Pass		
	6/10/2011 2:51:31 PM	82238-334	0.2723	Pass	98.639	Pass
AV111						
	6/10/2011 2:51:42 PM	82240-334	0.2742	Pass		
	6/10/2011 2:51:58 PM	82239-334	0.2698	Pass	98.397	Pass
AV112						
	6/10/2011 2:52:10 PM	82241-334	0.2689	Pass		
	6/10/2011 2:52:23 PM	82240-334	0.2662	Pass	98.990	Pass
AV113						
	6/29/2011 8:19:17 PM	82247-334	0.2797	Pass		
	6/30/2011 10:18:11 AM	82246-334	0.2733	Pass	97.694	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV114						
	6/10/2011 2:53:57 PM	82243-334	0.2672	Pass		
	6/10/2011 2:54:10 PM	82242-334	0.2759	Pass	103.28	Pass
AV115						
	6/10/2011 2:57:31 PM	82244-334	0.2713	Pass		
	6/10/2011 2:57:44 PM	82243-334	0.2721	Pass	100.29	Pass
AV116						
	6/2/2011 11:22:31 AM	82245-334	0.2802	Pass		
	6/27/2011 10:38:43 PM	82244-334	0.2729	Pass	97.394	Pass
AV117						
	6/10/2011 2:54:57 PM	82246-334	0.2598	Pass		
	6/10/2011 2:55:11 PM	82245-334	0.2656	Pass	102.23	Pass
AV118						
	6/10/2011 2:55:22 PM	82247-334	0.2708	Pass		
	6/10/2011 2:55:36 PM	82246-334	0.2681	Pass	98.996	Pass
AV119						
	6/29/2011 3:57:22 PM	82234-334	0.2780	Pass		
	6/29/2011 5:16:45 PM	82233-334	0.2724	Pass	98.002	Pass
AV120						
	6/10/2011 2:56:12 PM	63507-334	0.2673	Pass		
	6/10/2011 2:56:27 PM	63506-334	0.2588	Pass	96.816	Pass
AV121						
	6/10/2011 2:58:09 PM	63508A-334	0.2680	Pass		
	6/10/2011 2:58:22 PM	63507-334	0.2663	Pass	99.376	Pass
AV122						
	6/10/2011 2:58:33 PM	63509A-334	0.2633	Pass		
	6/10/2011 2:58:47 PM	63508A-334	0.2595	Pass	98.546	Pass
AV123						
	6/21/2011 2:27:18 PM	82232-334	0.2737	Pass		
	6/22/2011 3:45:08 AM	82241-334	0.2847	Pass	104.01	Pass
AV124						
	6/21/2011 2:26:12 PM	82233-334	0.2650	Pass		
	6/22/2011 2:21:19 AM	82232-334	0.2722	Pass	102.70	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV125						
	6/21/2011 2:26:25 PM	82234-334	0.2746	Pass		
	6/22/2011 2:21:37 AM	82233-334	0.2671	Pass	97.276	Pass
AV126						
	6/3/2011 3:29:01 PM	82235-334	0.2754	Pass		
	6/10/2011 3:00:12 PM	82234-334	0.2754	Pass	100.00	Pass
AV127						
	6/28/2011 9:47:50 PM	82236-334	0.2755	Pass		
	6/23/2011 8:58:08 AM	82235-334	0.2802	Pass	101.68	Pass
AV128						
	6/3/2011 3:29:09 PM	82237-334	0.2615	Pass		
	6/10/2011 3:00:38 PM	82236-334	0.2737	Pass	104.65	Pass
AV130						
	6/3/2011 3:29:19 PM	82239-334	0.2686	Pass		
	6/10/2011 3:01:20 PM	82238-334	0.2696	Pass	100.39	Pass
AV131						
	6/3/2011 3:29:24 PM	82240-334	0.2766	Pass		
	6/10/2011 3:01:46 PM	82239-334	0.2724	Pass	98.466	Pass
AV132						
	6/30/2011 11:37:39 AM	82247-334	0.2712	Pass		
	6/30/2011 12:41:22 PM	82246-334	0.2649	Pass	97.648	Pass
AV133						
	6/30/2011 8:32:09 PM	82234-334	0.2707	Pass		
	7/1/2011 9:11:19 AM	82233-334	0.2695	Pass	99.548	Pass
AV134						
	6/3/2011 3:29:39 PM	82243-334	0.2826	Pass		
	6/10/2011 3:02:44 PM	82242-334	0.2790	Pass	98.713	Pass
AV135						
	6/3/2011 3:29:47 PM	82244-334	0.2626	Pass		
	6/10/2011 3:02:54 PM	82243-334	0.2675	Pass	101.88	Pass
AV136						
	6/3/2011 3:29:51 PM	82245-334	0.2706	Pass		
	6/10/2011 3:03:17 PM	82244-334	0.2643	Pass	97.639	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV137						
	6/3/2011 3:29:43 PM	82246-334	0.2746	Pass		
	6/10/2011 3:03:29 PM	82245-334	0.2844	Pass	103.57	Pass
AV138						
	6/3/2011 3:29:55 PM	82247-334	0.2648	Pass		
	6/10/2011 3:03:43 PM	82246-334	0.2609	Pass	98.539	Pass
AV139						
	6/29/2011 3:57:26 PM	82235-334	0.2713	Pass		
	6/29/2011 5:16:50 PM	82234-334	0.2747	Pass	101.26	Pass
AV140						
	6/3/2011 3:30:04 PM	63507-334	0.2557	Pass		
	6/10/2011 3:04:11 PM	63506-334	0.2506	Pass	98.005	Pass
AV141						
	6/3/2011 3:30:09 PM	63508A-334	0.2581	Pass		
	6/10/2011 3:04:21 PM	63507-334	0.2577	Pass	99.845	Pass
AV142						
	6/3/2011 3:30:14 PM	63509A-334	0.2631	Pass		
	6/10/2011 3:04:32 PM	63508A-334	0.2620	Pass	99.586	Pass
AV143						
	6/10/2011 3:04:43 PM	82232-334	0.2740	Pass		
	6/10/2011 3:05:29 PM	63509A-334	0.2649	Pass	96.698	Pass
AV144						
	6/10/2011 3:04:53 PM	82233-334	0.2723	Pass		
	6/10/2011 3:05:38 PM	82232-334	0.2825	Pass	103.75	Pass
AV145						
	6/10/2011 3:05:03 PM	82234-334	0.2749	Pass		
	6/10/2011 3:05:47 PM	82233-334	0.2679	Pass	97.443	Pass
AV146						
	6/10/2011 3:05:14 PM	82235-334	0.2748	Pass		
	6/10/2011 3:05:57 PM	82234-334	0.2795	Pass	101.70	Pass

June Alpha Spec Calibrations

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV147						
	6/14/2011 9:47:31 AM	82236-334	0.2858	Pass		
	6/14/2011 9:48:52 AM	82247-334	0.2876	Pass	100.65	Pass
AV148						
	6/21/2011 2:32:02 PM	82237-334	0.2655	Pass		
	6/21/2011 2:32:43 PM	82236-334	0.2752	Pass	103.63	Pass
AV149						
	6/21/2011 2:34:00 PM	82238-334	0.2822	Pass		
	6/21/2011 2:34:33 PM	82237-334	0.2743	Pass	97.212	Pass
AV151						
	6/21/2011 2:36:24 PM	82240-334	0.2779	Pass		
	6/21/2011 2:36:47 PM	82239-334	0.2757	Pass	99.212	Pass
AV152						
	6/21/2011 2:37:11 PM	82241-334	0.2700	Pass		
	6/21/2011 2:37:32 PM	82240-334	0.2698	Pass	99.948	Pass
AV153						
	6/30/2011 9:05:44 AM	63508A-334	0.2610	Pass		
	6/30/2011 10:17:32 AM	63507-334	0.2585	Pass	99.026	Pass
AV154						
	6/21/2011 2:39:31 PM	82243-334	0.2680	Pass		
	6/21/2011 2:40:03 PM	82242-334	0.2722	Pass	101.56	Pass
AV155						
	6/27/2011 9:21:16 PM	82244-334	0.2651	Pass		
	6/27/2011 9:22:09 PM	82243-334	0.2628	Pass	99.134	Pass
AV156						
	6/27/2011 9:22:55 PM	82245-334	0.2721	Pass		
	6/27/2011 9:23:40 PM	82244-334	0.2640	Pass	97.019	Pass
AV157						
	6/27/2011 9:24:40 PM	82246-334	0.2630	Pass		
	6/27/2011 9:25:17 PM	82245-334	0.2703	Pass	102.74	Pass
AV158						
	6/30/2011 11:40:49 AM	82235-334	0.2758	Pass		
	6/30/2011 12:51:15 PM	82234-334	0.2756	Pass	99.948	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV159						
	6/30/2011 9:06:12 AM	82236-334	0.2701	Pass		
	6/30/2011 9:06:45 AM	82235-334	0.2750	Pass	101.83	Pass
AV160						
	6/30/2011 9:07:03 AM	82237-334	0.2630	Pass		
	6/30/2011 9:07:22 AM	82236-334	0.2656	Pass	100.98	Pass
AV161						
	6/27/2011 9:29:26 PM	63508A-334	0.2652	Pass		
	6/27/2011 9:29:59 PM	63507-334	0.2604	Pass	98.212	Pass
AV162						
	6/23/2011 11:26:56 AM	63509A-334	0.2637	Pass		
	6/23/2011 1:44:04 PM	63508A-334	0.2643	Pass	100.20	Pass
AV163						
	6/15/2011 1:14:12 AM	82232-334	0.2782	Pass		
	6/27/2011 9:30:57 PM	63509A-334	0.2748	Pass	98.774	Pass
AV164						
	6/30/2011 9:07:48 AM	82241-334	0.2661	Pass		
	6/30/2011 9:08:11 AM	82240-334	0.2702	Pass	101.52	Pass
AV165						
	6/15/2011 1:14:21 AM	82234-334	0.2869	Pass		
	6/27/2011 9:32:32 PM	82233-334	0.2796	Pass	97.467	Pass
AV166						
	6/15/2011 1:14:26 AM	82235-334	0.2773	Pass		
	6/27/2011 9:33:19 PM	82234-334	0.2771	Pass	99.922	Pass
AV167						
	6/15/2011 1:14:30 AM	82236-334	0.2723	Pass		
	6/27/2011 9:34:00 PM	82235-334	0.2755	Pass	101.17	Pass
AV168						
	6/15/2011 1:14:34 AM	82237-334	0.2627	Pass		
	6/27/2011 9:34:45 PM	82236-334	0.2702	Pass	102.85	Pass
AV169						
	6/15/2011 1:14:37 AM	82238-334	0.2711	Pass		
	6/27/2011 9:35:26 PM	82237-334	0.2674	Pass	98.648	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV170						
	6/15/2011 1:14:41 AM	82239-334	0.2783	Pass		
	6/27/2011 9:36:10 PM	82238-334	0.2688	Pass	96.606	Pass
AV171						
	6/15/2011 1:14:45 AM	82240-334	0.2709	Pass		
	6/27/2011 9:37:06 PM	82239-334	0.2813	Pass	103.84	Pass
AV172						
	6/15/2011 1:14:49 AM	82241-334	0.2699	Pass		
	6/27/2011 9:37:46 PM	82240-334	0.2705	Pass	100.22	Pass
AV173						
	6/15/2011 1:14:52 AM	82242-334	0.2830	Pass		
	6/27/2011 9:38:28 PM	82241-334	0.2716	Pass	95.991	Pass
AV174						
	6/15/2011 1:14:56 AM	82243-334	0.2679	Pass		
	6/27/2011 9:39:06 PM	82242-334	0.2743	Pass	102.42	Pass
AV175						
	6/15/2011 1:15:00 AM	82244-334	0.2675	Pass		
	6/27/2011 9:39:52 PM	82243-334	0.2720	Pass	101.67	Pass
AV176						
	6/15/2011 2:15:31 AM	82245-334	0.2726	Pass		
	6/27/2011 9:40:38 PM	82244-334	0.2661	Pass	97.631	Pass
AV177						
	6/15/2011 1:15:04 AM	82246-334	0.2651	Pass		
	6/15/2011 4:19:56 AM	82245-334	0.2751	Pass	103.75	Pass
AV178						
	6/15/2011 1:15:07 AM	82247-334	0.2746	Pass		
	6/27/2011 9:41:21 PM	82246-334	0.2711	Pass	98.745	Pass
AV179						
	6/30/2011 9:08:46 AM	82237-334	0.2742	Pass		
	6/30/2011 10:17:36 AM	82236-334	0.2866	Pass	104.51	Pass
AV180						
	6/15/2011 1:15:15 AM	63507-334	0.2625	Pass		
	6/27/2011 9:43:59 PM	63506-334	0.2532	Pass	96.455	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV181						
	6/15/2011 1:15:18 AM	63508A-334	0.2611	Pass		
	6/27/2011 9:44:46 PM	63507-334	0.2587	Pass	99.069	Pass
AV182						
	6/27/2011 9:45:31 PM	63509A-334	0.2629	Pass		
	6/27/2011 9:46:14 PM	63508A-334	0.2625	Pass	99.822	Pass
AV183						
	6/20/2011 10:52:50 PM	82232-334	0.2795	Pass		
	6/27/2011 9:46:57 PM	63509A-334	0.2671	Pass	95.537	Pass
AV184						
	6/20/2011 10:52:55 PM	82233-334	0.2772	Pass		
	6/27/2011 9:47:46 PM	82232-334	0.2799	Pass	100.95	Pass
AV185						
	6/20/2011 10:52:58 PM	82234-334	0.2823	Pass		
	6/27/2011 9:48:33 PM	82233-334	0.2741	Pass	97.113	Pass
AV186						
	6/20/2011 10:53:06 PM	82235-334	0.2741	Pass		
	6/27/2011 9:49:22 PM	82234-334	0.2744	Pass	100.12	Pass
AV187						
	6/20/2011 10:53:09 PM	82236-334	0.2672	Pass		
	6/27/2011 9:50:09 PM	82235-334	0.2741	Pass	102.59	Pass
AV188						
	6/20/2011 10:53:13 PM	82237-334	0.2820	Pass		
	6/27/2011 9:50:56 PM	82236-334	0.2799	Pass	99.240	Pass
AV189						
	6/20/2011 10:53:16 PM	82238-334	0.2769	Pass		
	6/27/2011 9:51:48 PM	82237-334	0.2684	Pass	96.927	Pass
AV190						
	6/21/2011 1:27:18 AM	82239-334	0.2710	Pass		
	6/27/2011 9:52:36 PM	82238-334	0.2739	Pass	101.05	Pass
AV191						
	6/20/2011 10:53:19 PM	82240-334	0.2794	Pass		
	6/21/2011 4:20:11 AM	82239-334	0.2769	Pass	99.115	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV192						
	6/20/2011 10:53:23 PM	82241-334	0.2797	Pass		
	6/27/2011 9:53:23 PM	82240-334	0.2797	Pass	100.02	Pass
AV193						
	6/20/2011 10:53:26 PM	82242-334	0.2736	Pass		
	6/27/2011 9:54:02 PM	82241-334	0.2750	Pass	100.50	Pass
AV194						
	6/20/2011 10:53:29 PM	82243-334	0.2734	Pass		
	6/27/2011 9:54:56 PM	82242-334	0.2776	Pass	101.56	Pass
AV195						
	6/20/2011 10:53:33 PM	82244-334	0.2644	Pass		
	6/27/2011 9:55:43 PM	82243-334	0.2668	Pass	100.90	Pass
AV196						
	6/20/2011 10:53:37 PM	82245-334	0.2839	Pass		
	6/27/2011 9:56:30 PM	82244-334	0.2753	Pass	96.985	Pass
AV197						
	6/24/2011 2:40:07 AM	82246-334	0.2672	Pass		
	6/27/2011 9:57:47 PM	82245-334	0.2763	Pass	103.37	Pass
AV198						
	6/24/2011 2:22:48 PM	82247-334	0.2725	Pass		
	6/24/2011 3:24:45 PM	82246-334	0.2672	Pass	98.027	Pass
AV199						
	6/30/2011 9:09:28 AM	82238-334	0.2684	Pass		
	6/30/2011 10:17:40 AM	82237-334	0.2638	Pass	98.291	Pass
AV200						
	6/20/2011 10:53:47 PM	63507-334	0.2618	Pass		
	6/27/2011 10:00:20 PM	63506-334	0.2543	Pass	97.155	Pass
AV201						
	6/20/2011 10:53:53 PM	63508A-334	0.2654	Pass		
	6/27/2011 10:01:08 PM	63507-334	0.2735	Pass	103.06	Pass
AV202						
	6/27/2011 10:01:51 PM	63509A-334	0.2648	Pass		
	6/27/2011 10:02:25 PM	63508A-334	0.2613	Pass	98.648	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV203						
	6/21/2011 3:19:59 PM	82232-334	0.2768	Pass		
	6/21/2011 3:21:44 PM	63509A-334	0.2646	Pass	95.582	Pass
AV204						
	6/27/2011 10:03:31 PM	82233-334	0.2705	Pass		
	6/27/2011 10:04:08 PM	82232-334	0.2736	Pass	101.16	Pass
AV205						
	6/21/2011 3:29:26 PM	82234-334	0.2783	Pass		
	6/27/2011 10:04:59 PM	82233-334	0.2722	Pass	97.818	Pass
AV206						
	6/27/2011 10:05:51 PM	82235-334	0.2796	Pass		
	6/27/2011 10:06:38 PM	82234-334	0.2837	Pass	101.48	Pass
AV207						
	6/27/2011 10:07:21 PM	82236-334	0.2735	Pass		
	6/27/2011 10:08:05 PM	82235-334	0.2759	Pass	100.87	Pass
AV208						
	6/27/2011 10:08:56 PM	82237-334	0.2765	Pass		
	6/27/2011 10:09:30 PM	82236-334	0.2800	Pass	101.26	Pass
AV209						
	6/27/2011 10:10:06 PM	82238-334	0.2812	Pass		
	6/27/2011 10:10:39 PM	82237-334	0.2680	Pass	95.309	Pass
AV210						
	6/21/2011 9:13:09 AM	82239-334	0.2718	Pass		
	6/27/2011 10:11:34 PM	82238-334	0.2722	Pass	100.16	Pass
AV211						
	6/27/2011 10:12:37 PM	82240-334	0.2684	Pass		
	6/21/2011 10:55:13 AM	82239-334	0.2688	Pass	100.13	Pass
AV212						
	6/27/2011 10:13:23 PM	82241-334	0.2851	Pass		
	6/27/2011 10:13:58 PM	82240-334	0.2891	Pass	101.41	Pass
AV213						
	6/23/2011 11:27:18 AM	82242-334	0.2707	Pass		
	6/23/2011 1:44:14 PM	82241-334	0.2712	Pass	100.17	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV214						
	6/27/2011 10:15:18 PM	82243-334	0.2701	Pass		
	6/27/2011 10:15:54 PM	82242-334	0.2728	Pass	100.98	Pass
AV215						
	6/27/2011 10:16:46 PM	82244-334	0.2907	Pass		
	6/27/2011 10:17:26 PM	82243-334	0.2768	Pass	95.222	Pass
AV216						
	6/27/2011 10:18:14 PM	82245-334	0.2815	Pass		
	6/27/2011 10:18:50 PM	82244-334	0.2736	Pass	97.176	Pass
AV217						
	7/1/2011 10:10:06 AM	82246-334	0.2656	Pass		
	7/1/2011 10:10:22 AM	82245-334	0.2746	Pass	103.39	Pass
AV218						
	6/24/2011 1:51:29 PM	82247-334	0.2743	Pass		
	6/24/2011 5:16:09 PM	82246-334	0.2696	Pass	98.287	Pass
AV219						
	6/30/2011 9:09:52 AM	82240-334	0.2749	Pass		
	6/30/2011 9:10:10 AM	82238-334	0.2711	Pass	98.608	Pass
AV220						
	6/27/2011 10:21:49 PM	63507-334	0.2632	Pass		
	6/27/2011 10:22:24 PM	63506-334	0.2579	Pass	97.981	Pass
AV221						
	6/27/2011 10:23:08 PM	63508A-334	0.2621	Pass		
	6/27/2011 10:23:43 PM	63507-334	0.2617	Pass	99.836	Pass
AV222						
	6/27/2011 10:24:23 PM	63509A-334	0.2675	Pass		
	6/27/2011 10:25:09 PM	63508A-334	0.2634	Pass	98.476	Pass
AV223						
	6/23/2011 11:28:00 AM	82232-334	0.2800	Pass		
	6/23/2011 1:44:18 PM	63509A-334	0.2682	Pass	95.794	Pass
AV224						
	6/23/2011 11:28:25 AM	82233-334	0.2755	Pass		
	6/23/2011 1:44:22 PM	82232-334	0.2798	Pass	101.55	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV225						
	6/24/2011 2:40:10 AM	82234-334	0.2791	Pass		
	6/27/2011 10:26:27 PM	82233-334	0.2753	Pass	98.623	Pass
AV226						
	6/24/2011 2:40:15 AM	82235-334	0.2729	Pass		
	6/27/2011 10:27:06 PM	82234-334	0.2800	Pass	102.61	Pass
AV227						
	6/25/2011 10:39:33 AM	82236-334	0.2783	Pass		
	6/25/2011 1:18:30 PM	82235-334	0.2773	Pass	99.651	Pass
AV228						
	6/28/2011 9:07:26 AM	82237-334	0.2755	Pass		
	6/28/2011 9:07:46 AM	82236-334	0.2863	Pass	103.94	Pass
AV229						
	6/25/2011 10:39:43 AM	82238-334	0.2781	Pass		
	6/25/2011 1:18:41 PM	82237-334	0.2735	Pass	98.336	Pass
AV230						
	6/25/2011 10:39:47 AM	82239-334	0.2844	Pass		
	6/25/2011 1:19:16 PM	82238-334	0.2812	Pass	98.851	Pass
AV231						
	6/25/2011 10:50:22 AM	82240-334	0.2784	Pass		
	6/25/2011 1:19:42 PM	82239-334	0.2758	Pass	99.090	Pass
AV232						
	6/25/2011 10:58:31 AM	82241-334	0.2758	Pass		
	6/25/2011 1:19:51 PM	82240-334	0.2812	Pass	101.96	Pass
AV233						
	6/25/2011 10:58:37 AM	82242-334	0.2668	Pass		
	6/25/2011 1:20:13 PM	82241-334	0.2705	Pass	101.37	Pass
AV234						
	6/28/2011 9:08:33 AM	82243-334	0.2710	Pass		
	6/28/2011 9:08:49 AM	82242-334	0.2714	Pass	100.13	Pass
AV235						
	6/25/2011 11:19:40 AM	82244-334	0.2686	Pass		
	6/25/2011 1:21:34 PM	82243-334	0.2694	Pass	100.30	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV236						
	6/25/2011 11:19:44 AM	82245-334	0.2759	Pass		
	6/25/2011 1:22:02 PM	82244-334	0.2647	Pass	95.960	Pass
AV237						
	6/25/2011 11:19:48 AM	82246-334	0.2679	Pass		
	6/25/2011 1:22:14 PM	82245-334	0.2783	Pass	103.89	Pass
AV238						
	6/25/2011 11:19:52 AM	82247-334	0.2740	Pass		
	6/25/2011 1:22:47 PM	82246-334	0.2642	Pass	96.404	Pass
AV239						
	6/29/2011 4:17:46 PM	82241-334	0.2816	Pass		
	6/29/2011 5:24:20 PM	82239-334	0.2770	Pass	98.355	Pass
AV240						
	6/28/2011 9:06:33 AM	63507-334	0.2675	Pass		
	6/25/2011 1:23:31 PM	63506-334	0.2636	Pass	98.508	Pass
AV241						
	6/25/2011 11:47:42 AM	63508A-334	0.2600	Pass		
	6/25/2011 1:23:51 PM	63507-334	0.2602	Pass	100.06	Pass
AV242						
	6/25/2011 11:47:57 AM	63509A-334	0.2680	Pass		
	6/25/2011 1:24:10 PM	63508A-334	0.2667	Pass	99.534	Pass
AV243						
	6/25/2011 9:28:07 AM	82232-334	0.2795	Pass		
	6/25/2011 1:24:52 PM	63509A-334	0.2676	Pass	95.760	Pass
AV244						
	6/25/2011 12:07:09 PM	82233-334	0.2858	Pass		
	6/25/2011 1:25:04 PM	82232-334	0.2904	Pass	101.61	Pass
AV245						
	6/25/2011 12:07:13 PM	82234-334	0.2856	Pass		
	6/25/2011 1:25:24 PM	82233-334	0.2793	Pass	97.792	Pass
AV246						
	6/25/2011 12:07:17 PM	82235-334	0.2981	Pass		
	6/25/2011 1:25:53 PM	82234-334	0.2968	Pass	99.576	Pass

DetectorID	Calibration Date	Source ID	Efficiency	Eff (20-32%)	ICV	(95-105%)
AV247						
	6/28/2011 9:04:33 AM	82236-334	0.2721	Pass		
	6/28/2011 9:04:52 AM	82235-334	0.2774	Pass	101.94	Pass
AV248						
	6/28/2011 9:09:30 AM	82237-334	0.2651	Pass		
	6/28/2011 9:09:48 AM	82236-334	0.2698	Pass	101.77	Pass
AV249						
	6/28/2011 9:10:11 AM	82238-334	0.2852	Pass		
	6/28/2011 9:10:27 AM	82237-334	0.2781	Pass	97.510	Pass
AV250						
	6/28/2011 9:10:53 AM	82239-334	0.2800	Pass		
	6/28/2011 9:11:12 AM	82238-334	0.2820	Pass	100.71	Pass

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Alpha Vision
Yearly Calibrations
Updated 2/22/12

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV22						
Dec2011_AV22	2/21/2012 2:57:59 PM	82237-334	0.2680	Pass		
Dec2011a_AV22_ICV	12/8/2011 2:38:54 PM	82236-334	0.2670	Pass	99.6280	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Wednesday, February 22, 2012 ***Page 1 of 1***

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV48						
June2011A_AV48	2/21/2012 2:58:50 PM	82237-334	0.2748	Pass		
June2011_AV48_ICV	6/28/2011 9:18:29 PM	82236-334	0.2720	Pass	98.9875	Pass
AV88						
May2011_AV88	2/21/2012 2:59:57 PM	82237-334	0.2736	Pass		
June2011_AV88_ICV	6/28/2011 9:33:31 PM	82236-334	0.2783	Pass	101.747	Pass
AV103						
June2011_AV103a	2/21/2012 3:00:31 PM	82237-334	0.2722	Pass		
June2011_AV103a_ICVb	6/29/2011 8:19:11 PM	82236-334	0.2718	Pass	99.8524	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV68						
May2011_AV68	2/21/2012 2:59:22 PM	82237-334	0.2733	Pass		
June2011_AV68_ICV	6/2/2011 5:28:05 PM	82236-334	0.2767	Pass	101.258	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV128						
June2011_AV128	2/21/2012 3:01:06 PM	82237-334	0.2692	Pass		
June2011_AV128_ICV	6/10/2011 3:00:38 PM	82236-334	0.2737	Pass	101.685	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	Calibration Date	Source ID	Efficiency	(20-32%)	Recov	(+/-5%)
AV160						
June2011A_AV160	2/21/2012 3:02:57 PM	82237-334	0.2708	Pass		
June2011A_AV160_ICV	6/30/2011 9:07:22 AM	82236-334	0.2656	Pass	98.0720	Pass
AV168						
June2011_AV168	2/21/2012 3:03:27 PM	82237-334	0.2704	Pass		
June2011_AV168_ICV	6/27/2011 9:34:45 PM	82236-334	0.2702	Pass	99.9393	Pass
AV179						
June2011B_AV179	2/21/2012 3:03:50 PM	82237-334	0.2821	Pass		
June2011_AV179b_ICV	6/30/2011 10:17:36 AM	82236-334	0.2866	Pass	101.588	Pass
AV228						
June2011A_AV228	2/21/2012 3:04:50 PM	82237-334	0.2834	Pass		
June2011A_AV228_ICV	6/28/2011 9:07:46 AM	82236-334	0.2863	Pass	101.035	Pass
AV248						
June2011_AV248	2/21/2012 3:05:18 PM	82237-334	0.2726	Pass		
June2011_AV248_ICV	6/28/2011 9:09:48 AM	82236-334	0.2698	Pass	98.9835	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

Alpha Spec Calibrations/Verifications

DetectorID	*Calibration Date*	*Source ID*	*Efficiency*	*(20-32%)*	*Recov*	*(+/-5%)*
AV205						
Dec2011_AV205	2/21/2012 3:04:20 PM	82237-334	0.2688	Pass		
Dec2011_AV205_ICV	12/16/2011 3:08:08 AM	82236-334	0.2684	Pass	99.8398	Pass

Note: If no verification result for a detector is present ("Recov"), the detector is Out of Service (OOS).

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:05:43PM 7/25/2011

Calibration

Name: June2011_AV120
Description:
Detector: AV120

Calibration Date: 6/10/2011 2:56:12PM
Analyst: 60040

Source Info

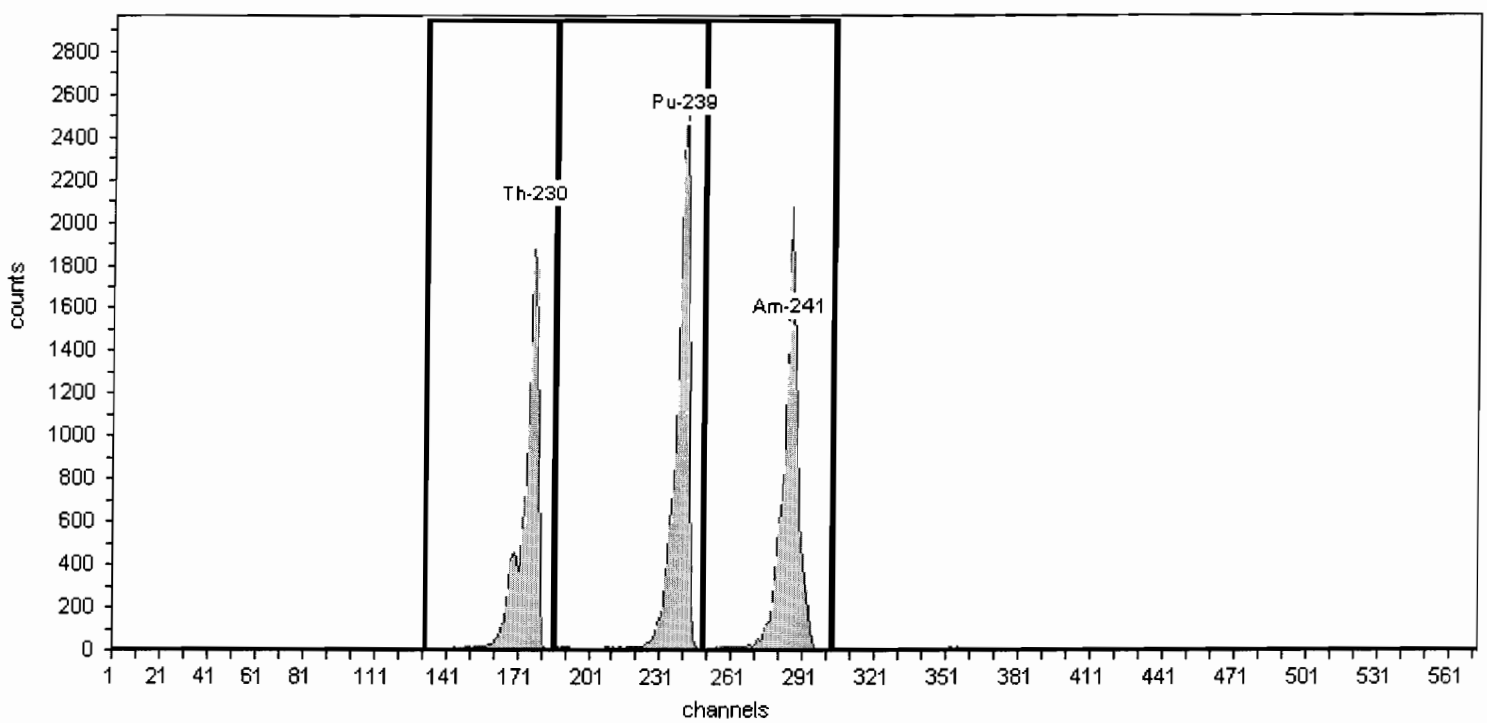
Certificate ID: 63507-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:00PM
Description:

Acquisition

Detector: AV120 , SN: 49-037W3
Acquisition Start Date: 6/6/2011 8:29:28AM
Live Time: 140.00 min.
Real Time: 145.88 min.
Efficiency: 26.73% +/- 0.28% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	11,945.00	85.32
Pu-239	240	5.16	186	249	14,871.00	106.22
Am-241	284	5.49	249	303	14,005.00	100.04

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:05:48PM 7/25/2011

Calibration

Name: June2011_AV120_ICV
Description:
Detector: AV120

Calibration Date: 6/10/2011 2:56:27PM
Analyst: 60040

Source Info

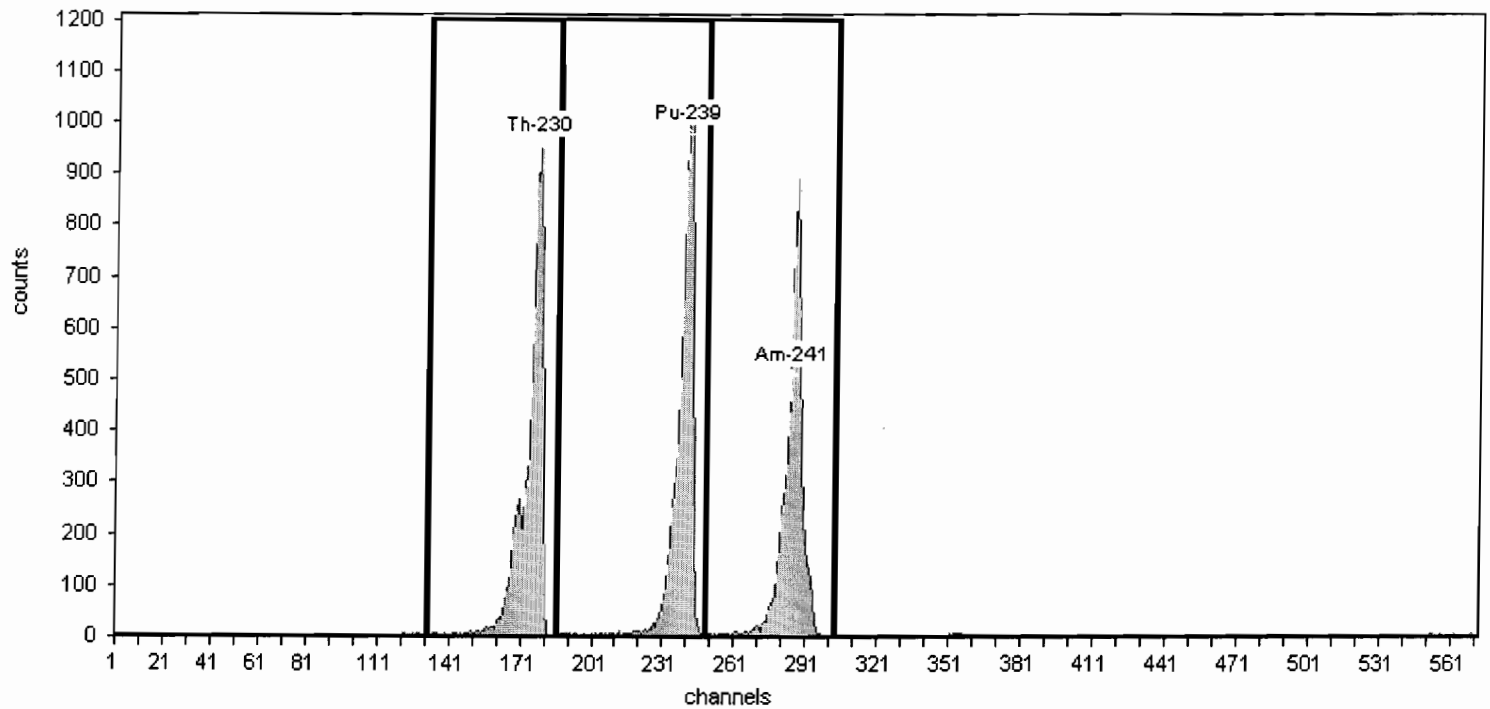
Certificate ID: 63506-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:07PM
Description:

Acquisition

Detector: AV120 , SN: 49-037W3
Acquisition Start Date: 6/6/2011 1:18:32PM
Live Time: 60.00 min.
Real Time: 60.96 min.
Efficiency: 25.88% +/- 0.38% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	6,418.00	106.97
Pu-239	240	5.16	186	249	6,649.00	110.82
Am-241	284	5.49	249	303	6,008.00	100.13

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:05:55PM 7/25/2011

Calibration

Name: June2011_AV121
Description:
Detector: AV121

Calibration Date: 6/10/2011 2:58:09PM
Analyst: 60040

Source Info

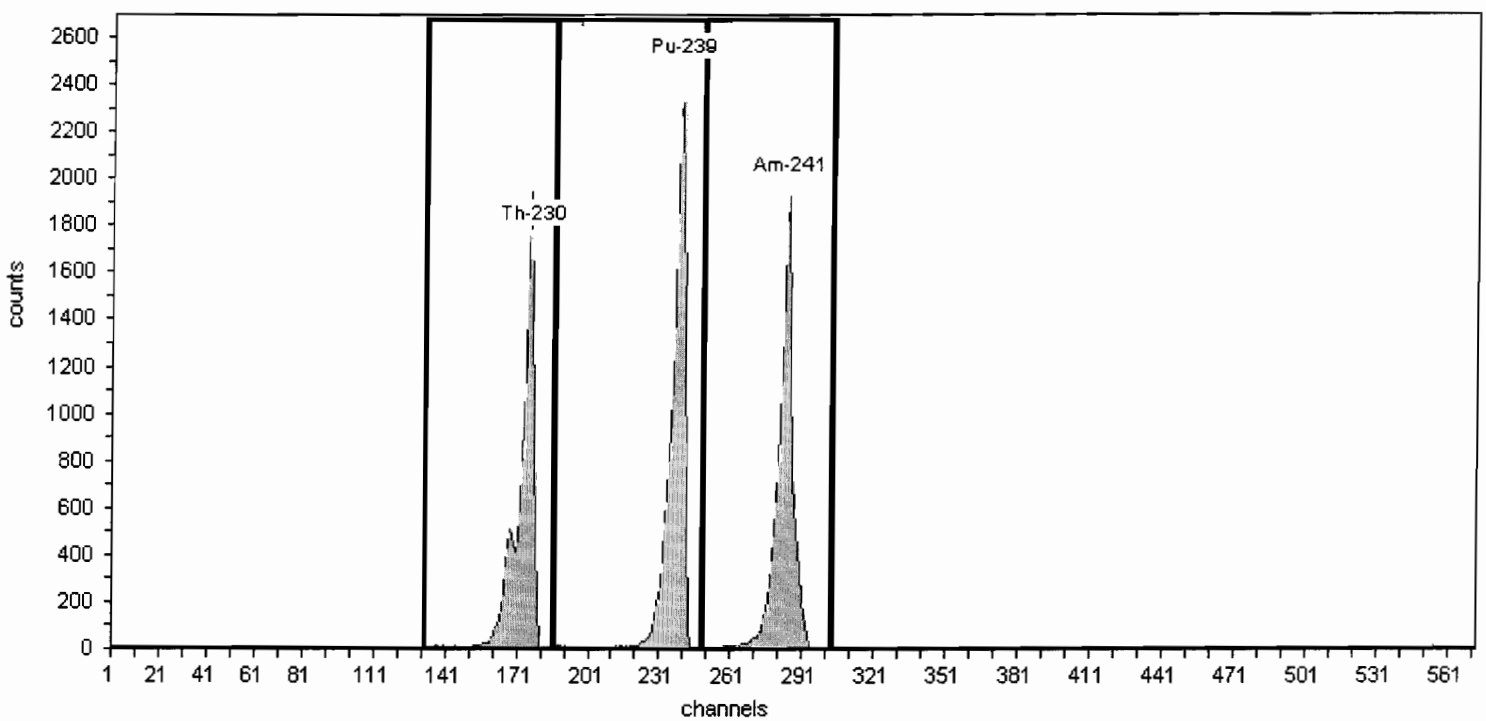
Certificate ID: 63508A-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:00PM
Description:

Acquisition

Detector: AV121 , SN: 49-037W2
Acquisition Start Date: 6/6/2011 8:30:12AM
Live Time: 140.00 min.
Real Time: 145.66 min.
Efficiency: 26.80% +/- 0.29% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	12,067.00	86.19
Pu-239	240	5.16	186	249	14,283.00	102.02
Am-241	284	5.49	249	303	13,193.00	94.24

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:06:03PM 7/25/2011

Calibration

Name: June2011_AV121_ICV
Description:
Detector: AV121

Calibration Date: 6/10/2011 2:58:22PM
Analyst: 60040

Source Info

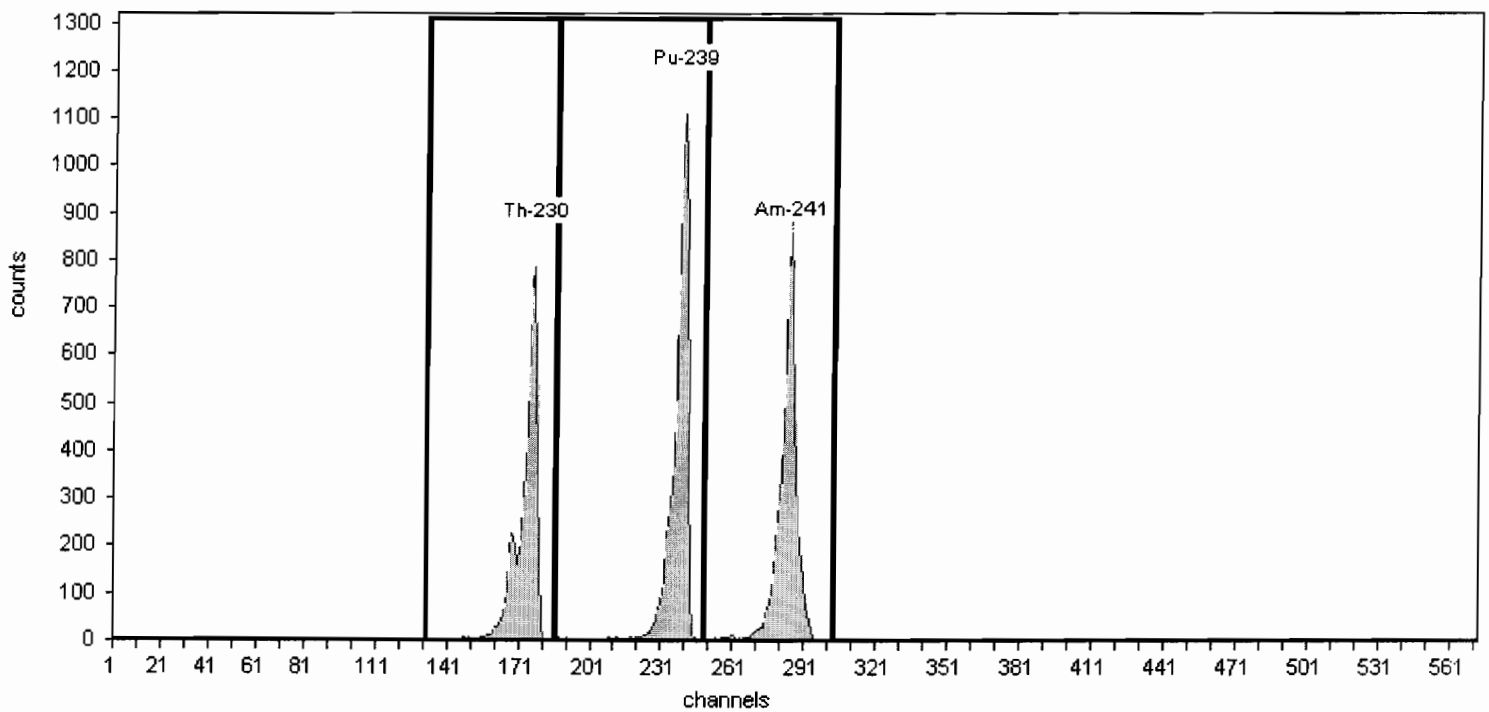
Certificate ID: 63507-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:00PM
Description:

Acquisition

Detector: AV121 , SN: 49-037W2
Acquisition Start Date: 6/6/2011 1:19:24PM
Live Time: 60.00 min.
Real Time: 60.92 min.
Efficiency: 26.63% +/- 0.41% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,115.00	85.25
Pu-239	240	5.16	186	249	6,342.00	105.70
Am-241	284	5.49	249	303	5,972.00	99.53

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:06:12PM 7/25/2011

Calibration

Name: June2011_AV122
Description:
Detector: AV122

Calibration Date: 6/10/2011 2:58:33PM
Analyst: 60040

Source Info

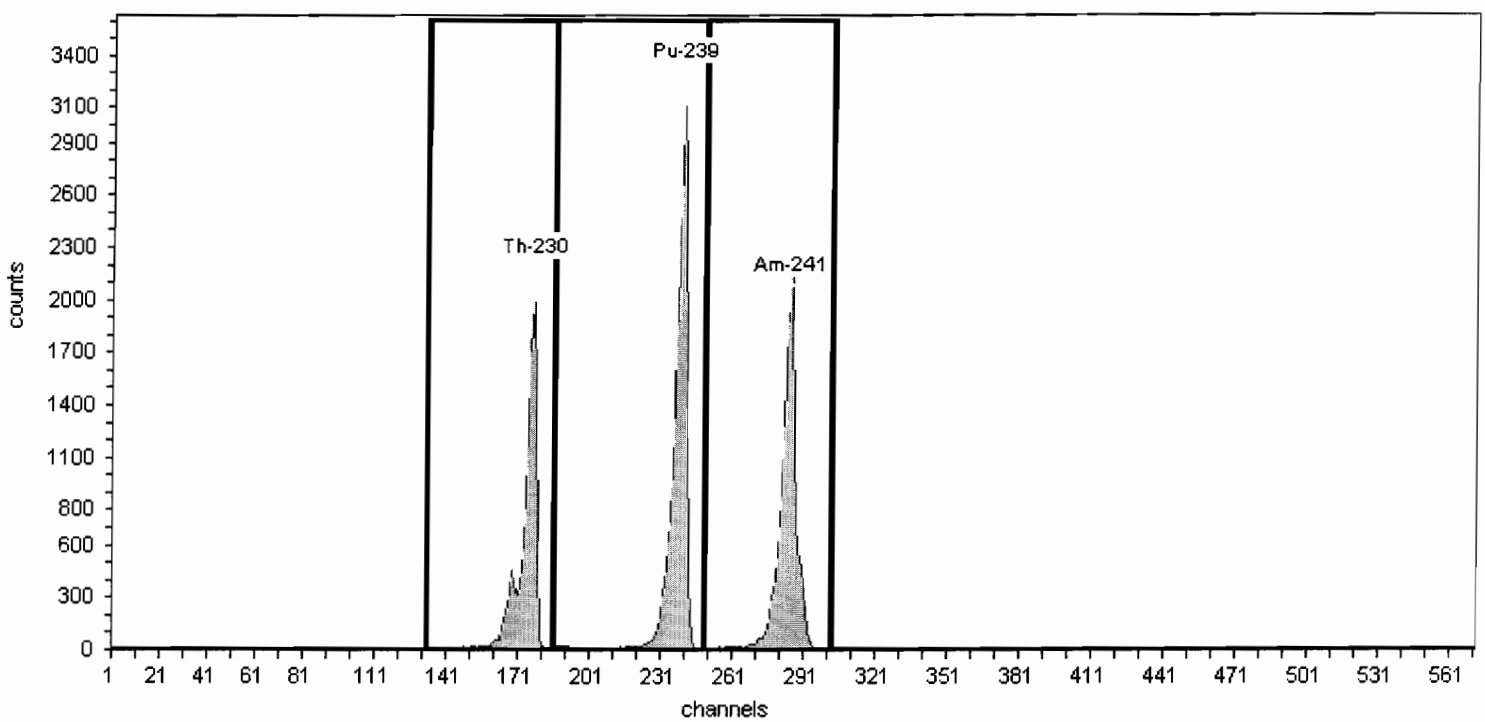
Certificate ID: 63509A-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:00PM
Description:

Acquisition

Detector: AV122 , SN: 49-037G4
Acquisition Start Date: 6/6/2011 8:30:14AM
Live Time: 140.00 min.
Real Time: 145.56 min.
Efficiency: 26.33% +/- 0.27% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	11,216.00	80.11
Pu-239	240	5.16	186	249	17,326.00	123.76
Am-241	284	5.49	249	303	14,667.00	104.76

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:06:17PM 7/25/2011

Calibration

Name: June2011_AV122_ICV
Description:
Detector: AV122

Calibration Date: 6/10/2011 2:58:47PM
Analyst: 60040

Source Info

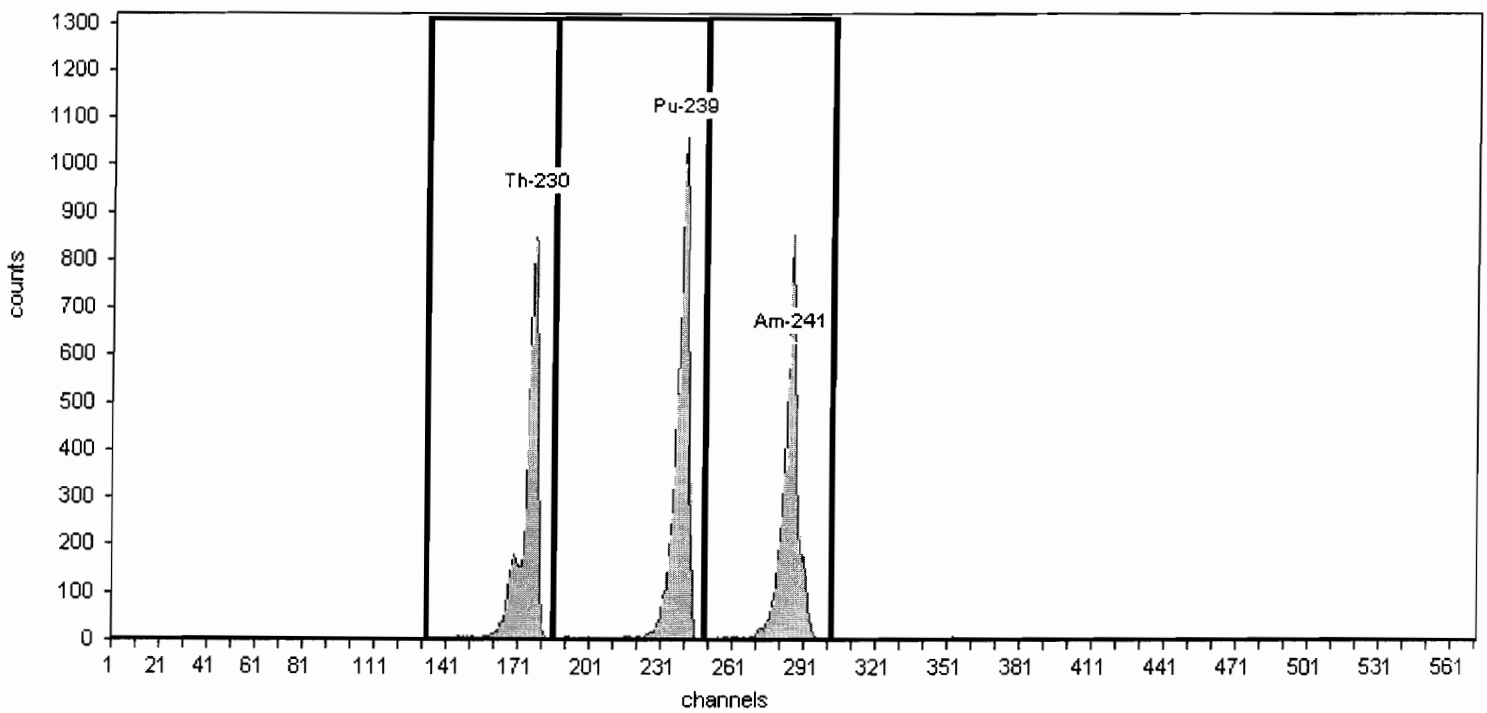
Certificate ID: 63508A-334
Prepared by: Analytics

Certification Date: 5/30/2002 12:00:00PM
Description:

Acquisition

Detector: AV122 , SN: 49-037G4
Acquisition Start Date: 6/6/2011 1:19:55PM
Live Time: 60.00 min.
Real Time: 60.92 min.
Efficiency: 25.95% +/- 0.42% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	4,969.00	82.82
Pu-239	240	5.16	186	249	6,049.00	100.82
Am-241	284	5.49	249	303	5,403.00	90.05

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:06:27PM 7/25/2011

Calibration

Name: June2011_AV123a
Description:
Detector: AV123

Calibration Date: 6/21/2011 2:27:18PM
Analyst: 60040

Source Info

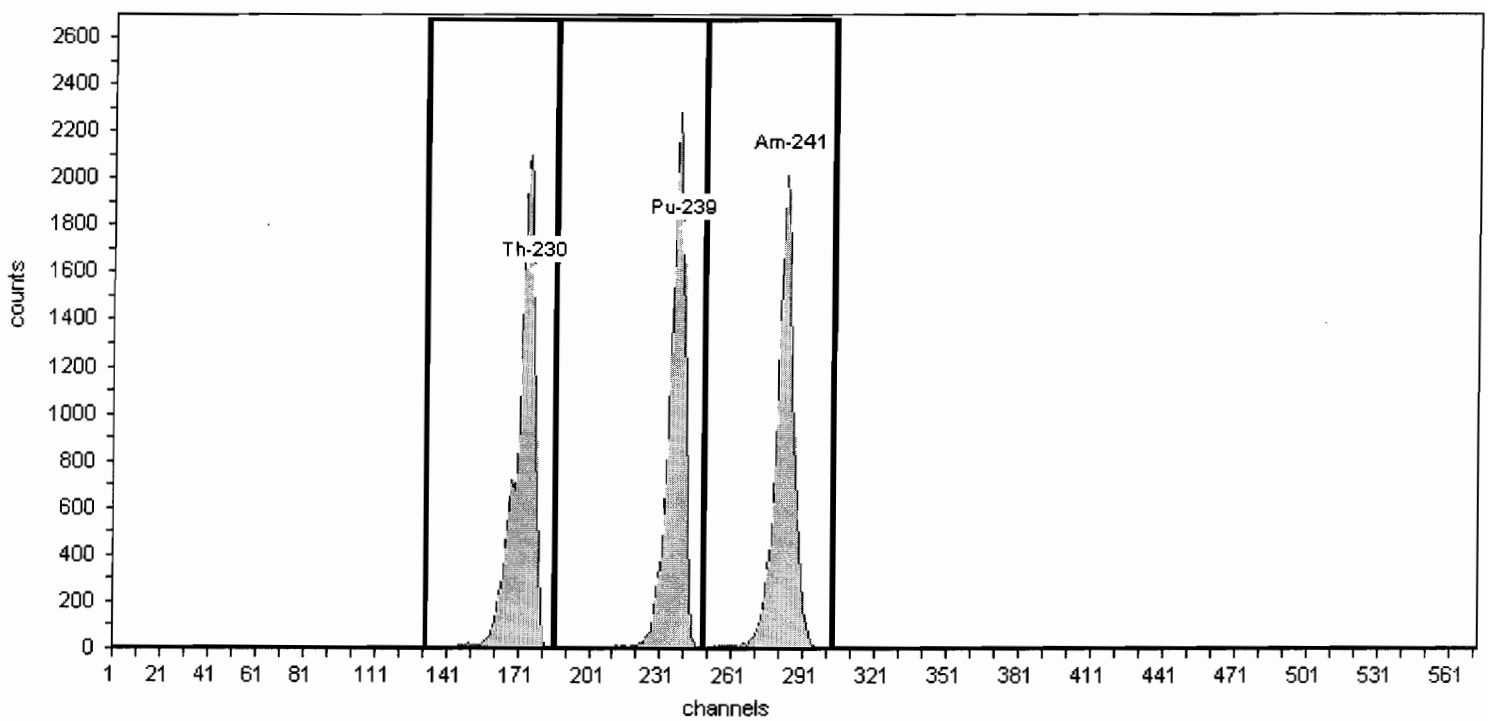
Certificate ID: 82232-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV123 , SN: 49-179C1
Acquisition Start Date: 6/21/2011 11:57:32AM
Live Time: 140.00 min.
Real Time: 140.05 min.
Efficiency: 27.37% +/- 0.31% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	17,580.00	125.57
Pu-239	240	5.16	186	249	16,498.00	117.84
Am-241	284	5.49	249	303	16,604.00	118.60

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:06:45PM 7/25/2011

Calibration

Name: June2011A_AV123_ICV
Description:
Detector: AV123

Calibration Date: 7/25/2011 1:06:42PM
Analyst: 60040

Source Info

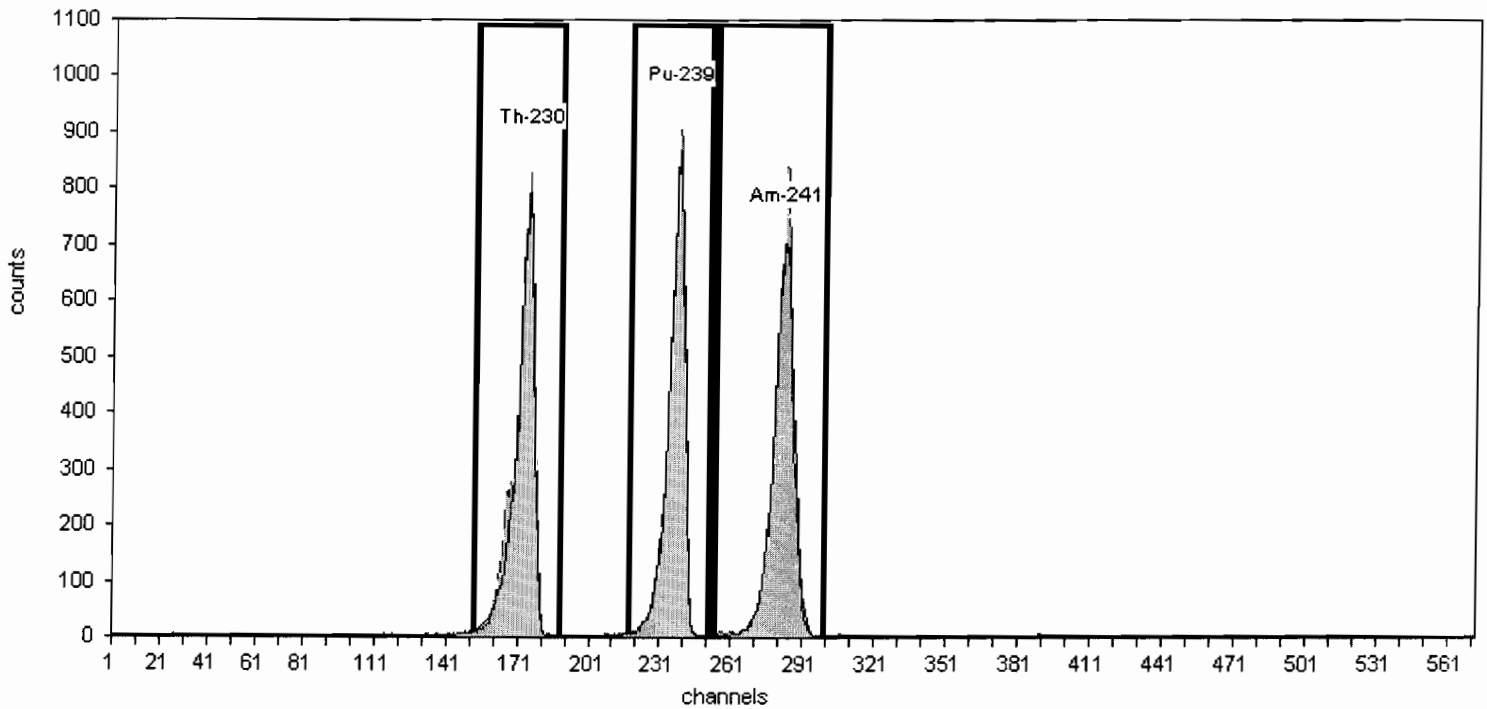
Certificate ID: 82241-334
Prepared by: Analytics

Certification Date: 6/8/2010 12:00:00PM
Description:

Acquisition

Detector: AV123 , SN: 49-179C1
Acquisition Start Date: 6/22/2011 2:44:39AM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 28.47% +/- 0.45% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4292 keV / Ch
Offset = 3,387.13 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Auto (Peakfit)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Fitted Area	Net Count Rate (cpm)
Th-230	175	4.69	153	189	6,813.90	113.57
Pu-239	238	5.16	219	251	6,666.59	111.11
Am-241	282	5.49	254	301	7,073.34	117.89

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:06:56PM 7/25/2011

Calibration

Name: June2011_AV124a
Description:
Detector: AV124

Calibration Date: 6/21/2011 2:26:12PM
Analyst: 60040

Source Info

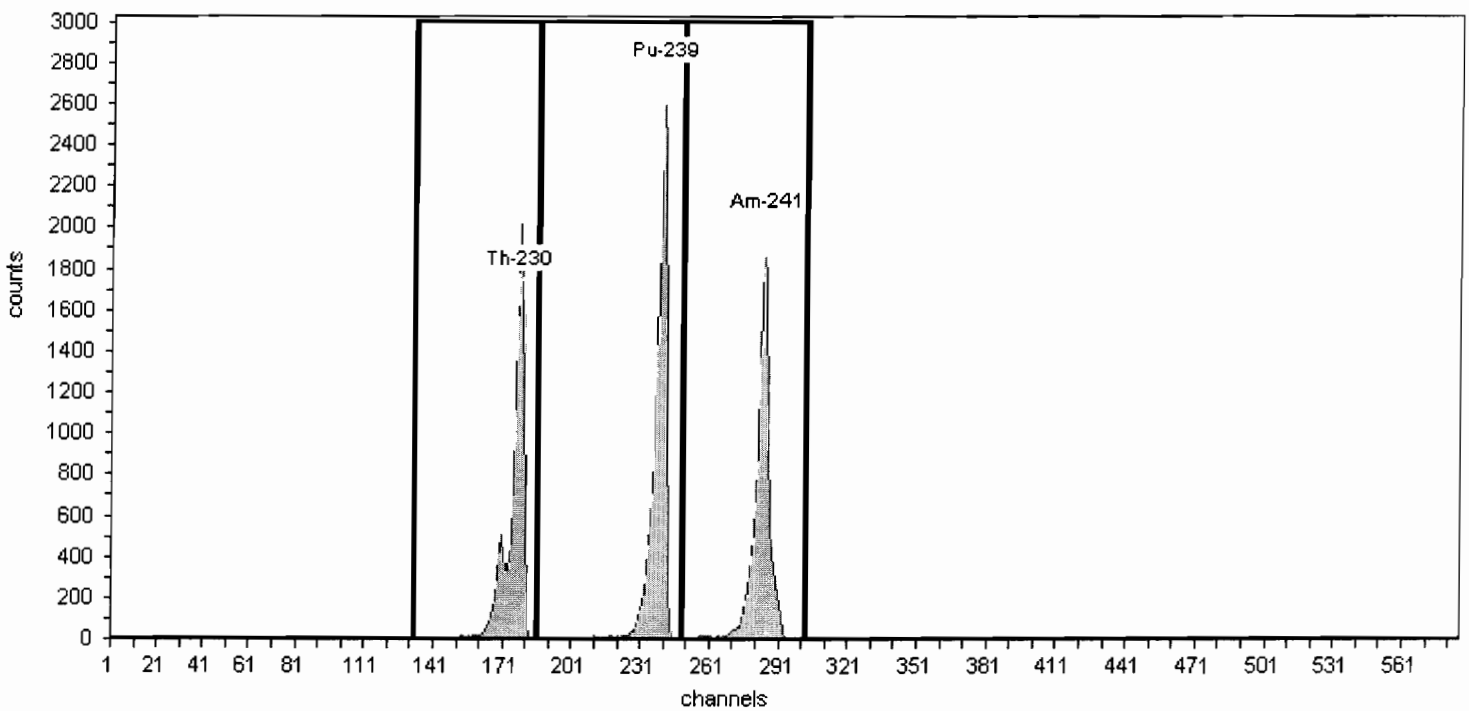
Certificate ID: 82233-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV124 , SN: 49-179C2
Acquisition Start Date: 6/21/2011 12:00:27PM
Live Time: 140.00 min.
Real Time: 140.05 min.
Efficiency: 26.50% +/- 0.38% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	11,018.00	78.70
Pu-239	240	5.16	186	249	13,549.00	96.78
Am-241	284	5.49	249	303	11,322.00	80.87

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:07:00PM 7/25/2011

Calibration

Name: June2011A_AV124_ICV
Description:
Detector: AV124

Calibration Date: 6/22/2011 2:21:19AM
Analyst: 60040

Source Info

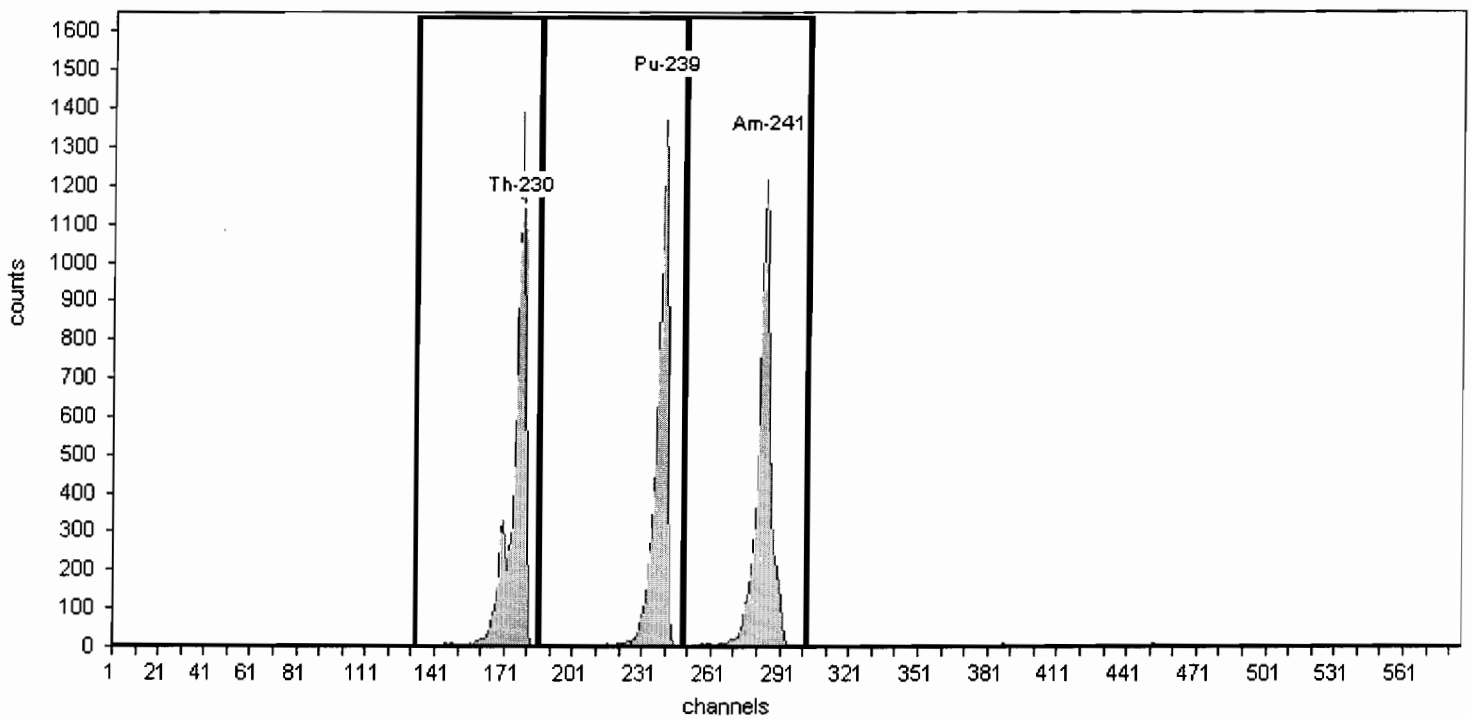
Certificate ID: 82232-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV124 , SN: 49-179C2
Acquisition Start Date: 6/22/2011 1:21:13AM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 27.22% +/- 0.41% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	7,365.00	122.75
Pu-239	240	5.16	186	249	7,019.00	116.98
Am-241	284	5.49	249	303	7,221.00	120.35

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:07:08PM 7/25/2011

Calibration

Name: June2011_AV125a
Description:
Detector: AV125

Calibration Date: 6/21/2011 2:26:25PM
Analyst: 60040

Source Info

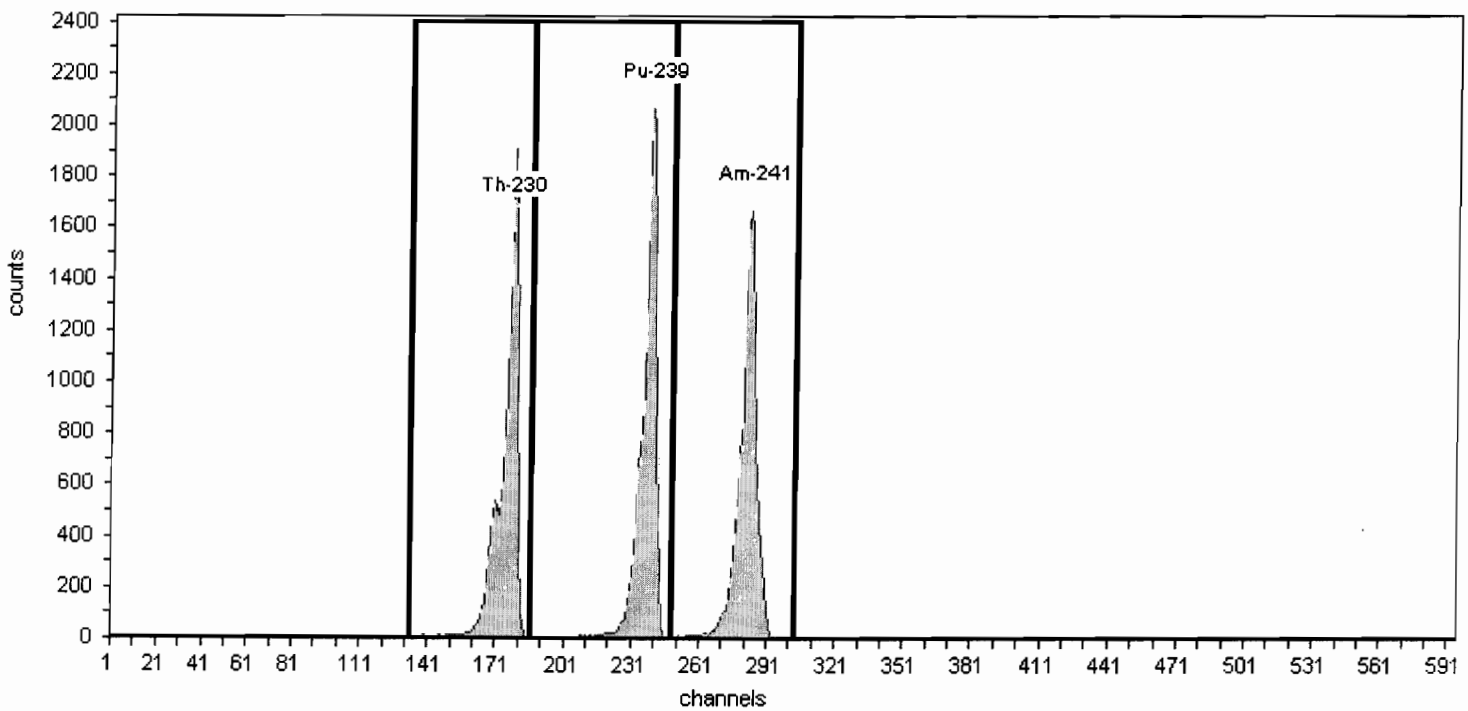
Certificate ID: 82234-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV125 , SN: 49-179C3
Acquisition Start Date: 6/21/2011 12:03:22PM
Live Time: 140.00 min.
Real Time: 140.05 min.
Efficiency: 27.46% +/- 0.38% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	12,960.00	92.57
Pu-239	240	5.16	186	249	13,690.00	97.79
Am-241	284	5.49	249	303	13,190.00	94.21

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:07:13PM 7/25/2011

Calibration

Name: June2011A_AV125_ICV
Description:
Detector: AV125

Calibration Date: 6/22/2011 2:21:37AM
Analyst: 60040

Source Info

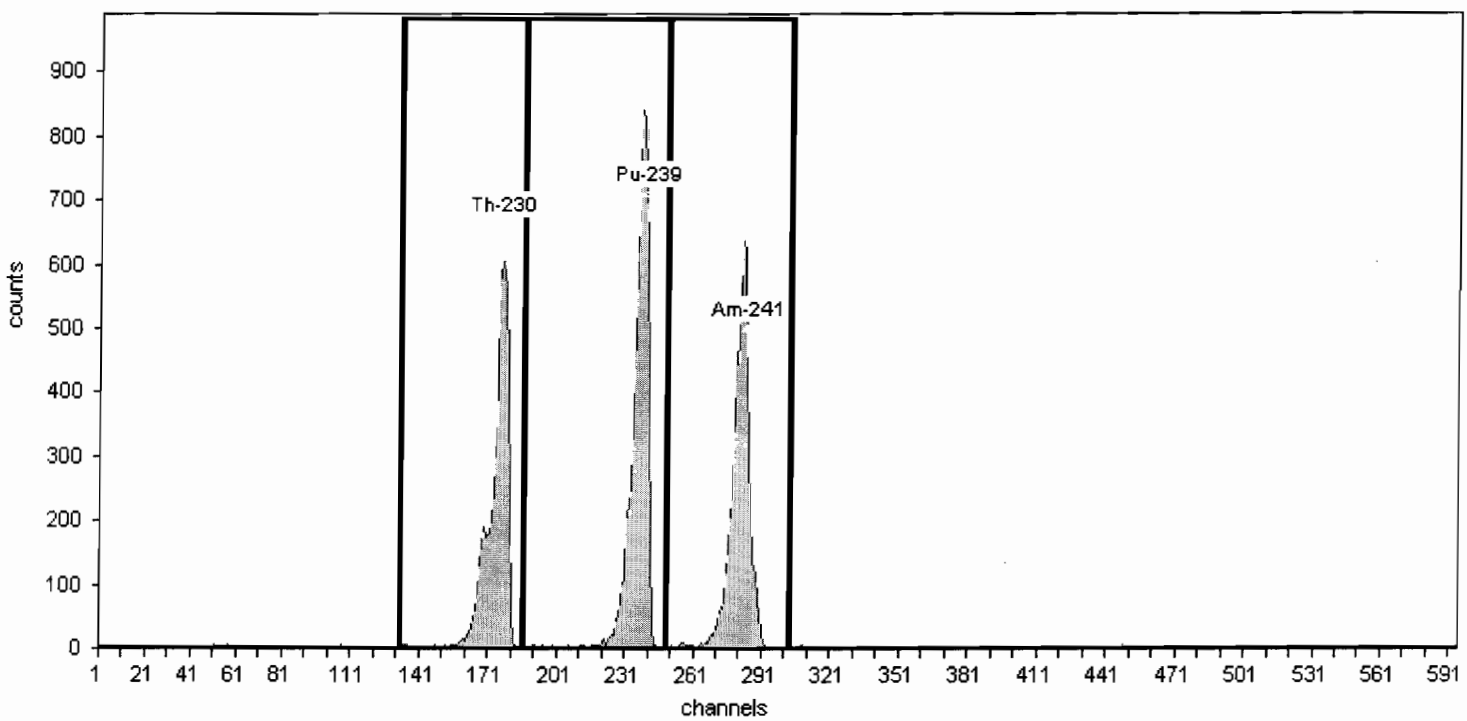
Certificate ID: 82233-334
Prepared by: Analytics

Certification Date: 6/3/2010 12:00:00PM
Description:

Acquisition

Detector: AV125 , SN: 49-179C3
Acquisition Start Date: 6/22/2011 1:21:58AM
Live Time: 60.00 min.
Real Time: 60.01 min.
Efficiency: 26.71% +/- 0.50% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	4,676.00	77.93
Pu-239	240	5.16	186	249	5,890.00	98.17
Am-241	284	5.49	249	303	4,938.00	82.30

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:07:21PM 7/25/2011

Calibration

Name: June2011_AV126
Description:
Detector: AV126

Calibration Date: 6/3/2011 3:29:01PM
Analyst: 60040

Source Info

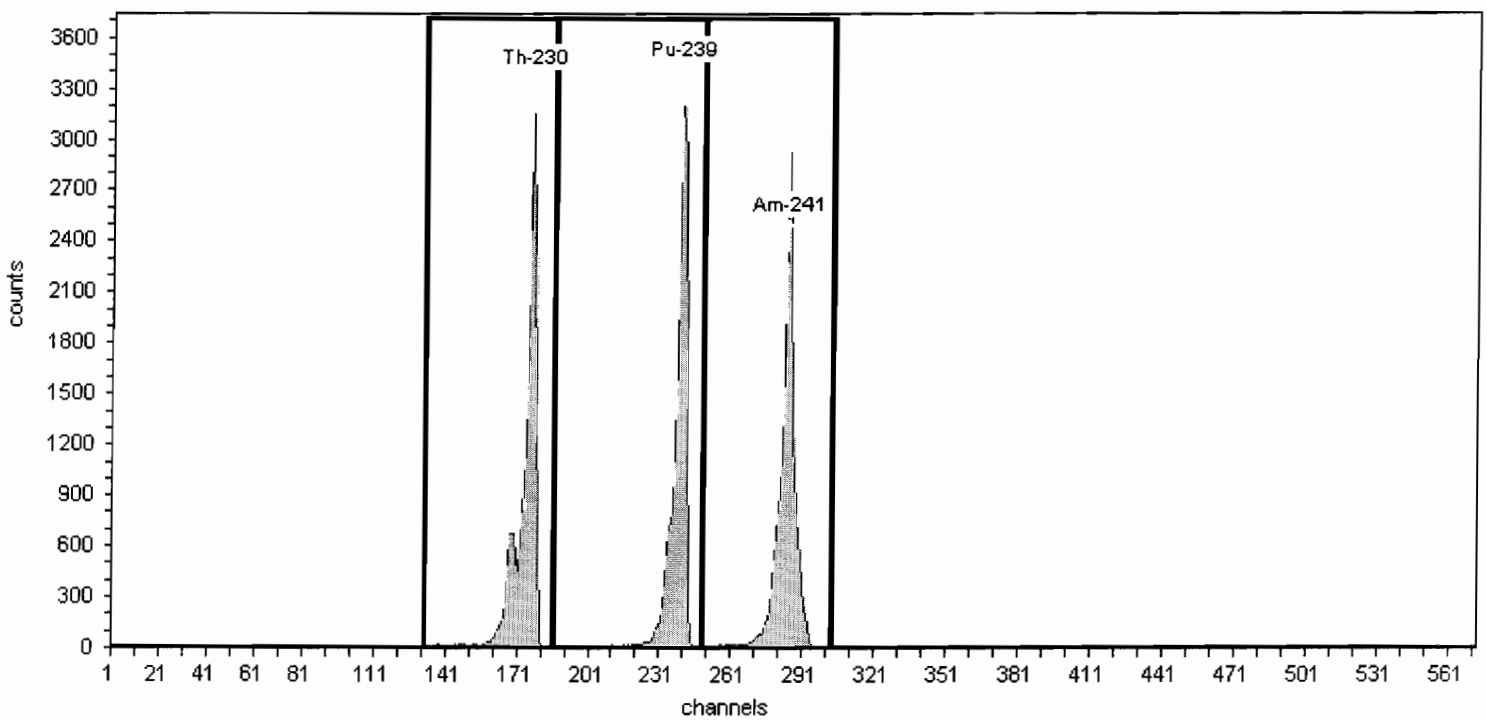
Certificate ID: 82235-334
Prepared by: Analytics

Certification Date: 6/4/2010 12:00:00PM
Description:

Acquisition

Detector: AV126 , SN: 49-179C4
Acquisition Start Date: 6/3/2011 12:53:41PM
Live Time: 140.00 min.
Real Time: 140.15 min.
Efficiency: 27.54% +/- 0.32% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	16,438.00	117.41
Pu-239	240	5.16	186	249	16,036.00	114.54
Am-241	284	5.49	249	303	17,332.00	123.80

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:07:25PM 7/25/2011

Calibration

Name: June2011_AV126_ICV
Description:
Detector: AV126

Calibration Date: 6/10/2011 3:00:12PM
Analyst: 60040

Source Info

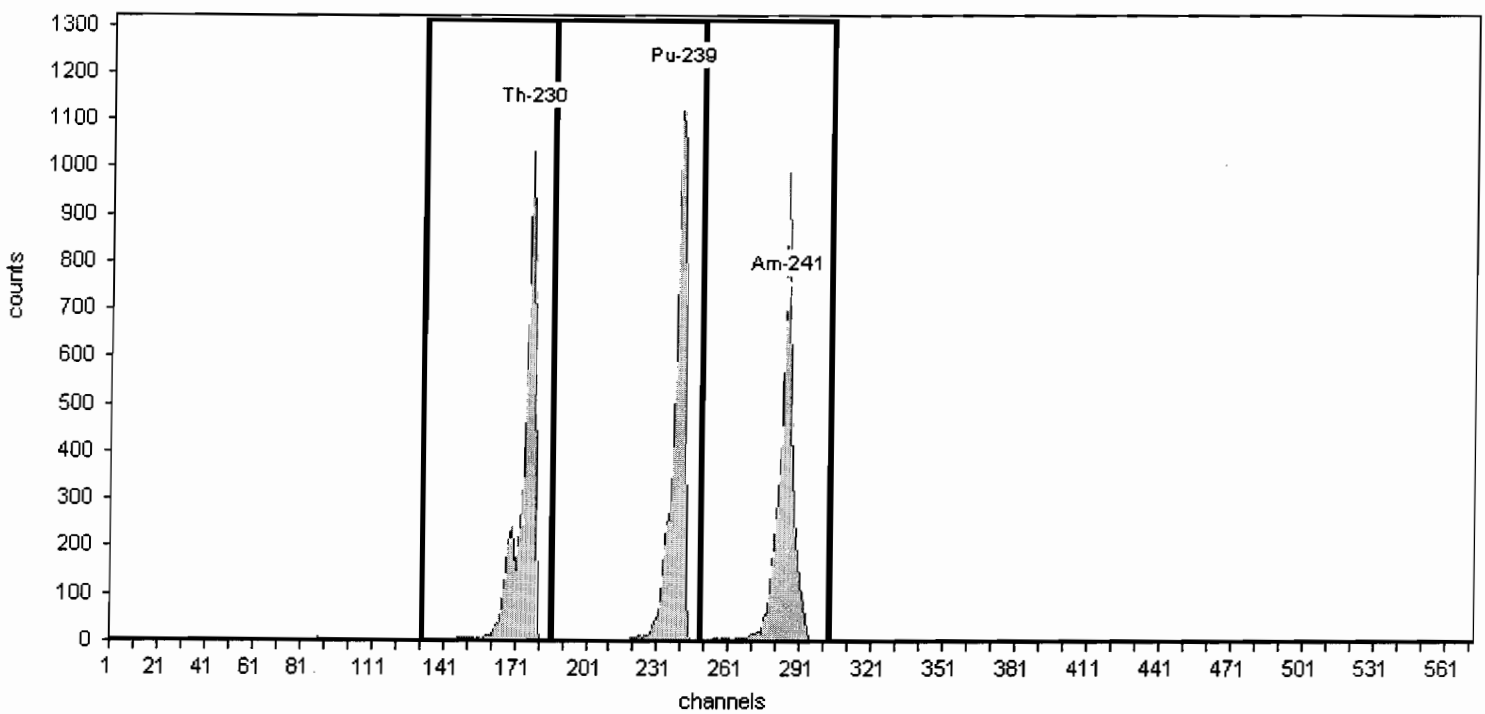
Certificate ID: 82234-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV126 , SN: 49-179C4
Acquisition Start Date: 6/5/2011 7:14:51AM
Live Time: 60.00 min.
Real Time: 60.05 min.
Efficiency: 27.54% +/- 0.49% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	5,617.00	93.62
Pu-239	240	5.16	186	249	5,868.00	97.80
Am-241	284	5.49	249	303	5,641.00	94.02

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:07:33PM 7/25/2011

Calibration

Name: June2011A_AV127
Description:
Detector: AV127

Calibration Date: 6/28/2011 9:47:50PM
Analyst: 60040

Source Info

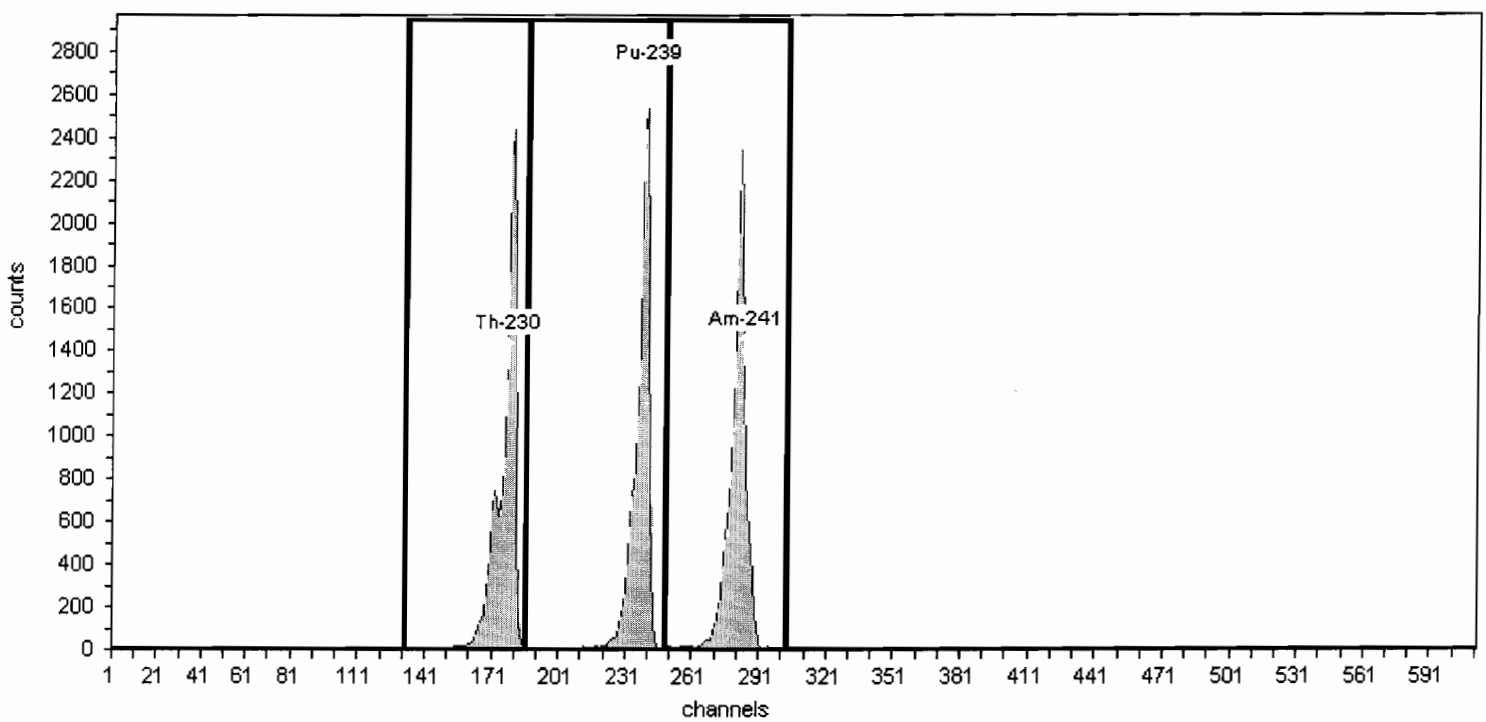
Certificate ID: 82236-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV127 , SN: 49-179C5
Acquisition Start Date: 6/22/2011 11:52:21PM
Live Time: 140.00 min.
Real Time: 140.09 min.
Efficiency: 27.55% +/- 0.32% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	16,390.00	117.07
Pu-239	240	5.16	186	249	15,512.00	110.80
Am-241	284	5.49	249	303	15,915.00	113.68

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:07:38PM 7/25/2011

Calibration

Name: June2011A_AV127_ICV
Description:
Detector: AV127

Calibration Date: 6/23/2011 8:58:08AM
Analyst: 60040

Source Info

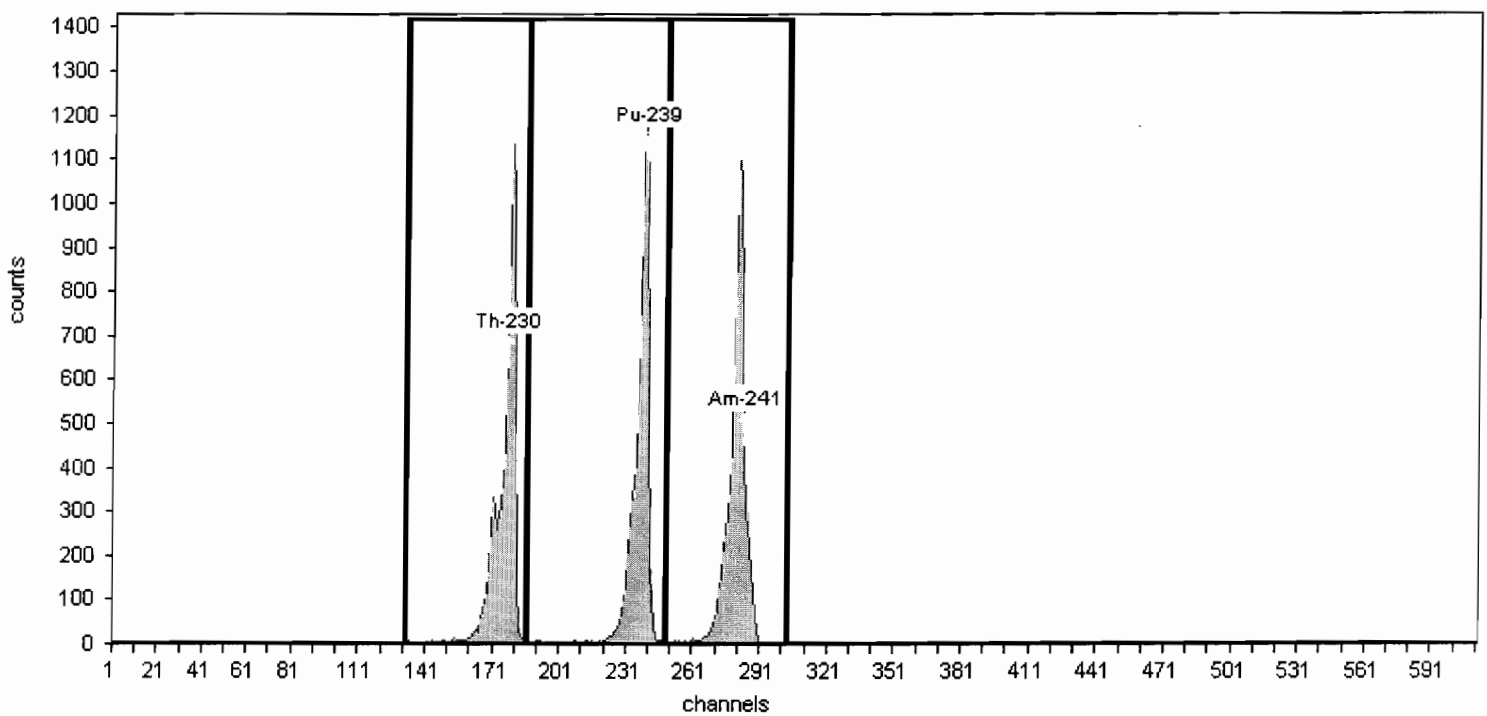
Certificate ID: 82235-334
Prepared by: Analytics

Certification Date: 6/4/2010 12:00:00PM
Description:

Acquisition

Detector: AV127 , SN: 49-179C5
Acquisition Start Date: 6/23/2011 4:36:26AM
Live Time: 60.00 min.
Real Time: 60.09 min.
Efficiency: 28.02% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	7,150.00	119.17
Pu-239	240	5.16	186	249	7,067.00	117.78
Am-241	284	5.49	249	303	7,498.00	124.97

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
3:01:09PM 2/21/2012

Calibration

Name: June2011_AV128
Description:
Detector: AV128

Calibration Date: 2/21/2012 3:01:06PM
Analyst: 60040

Source Info

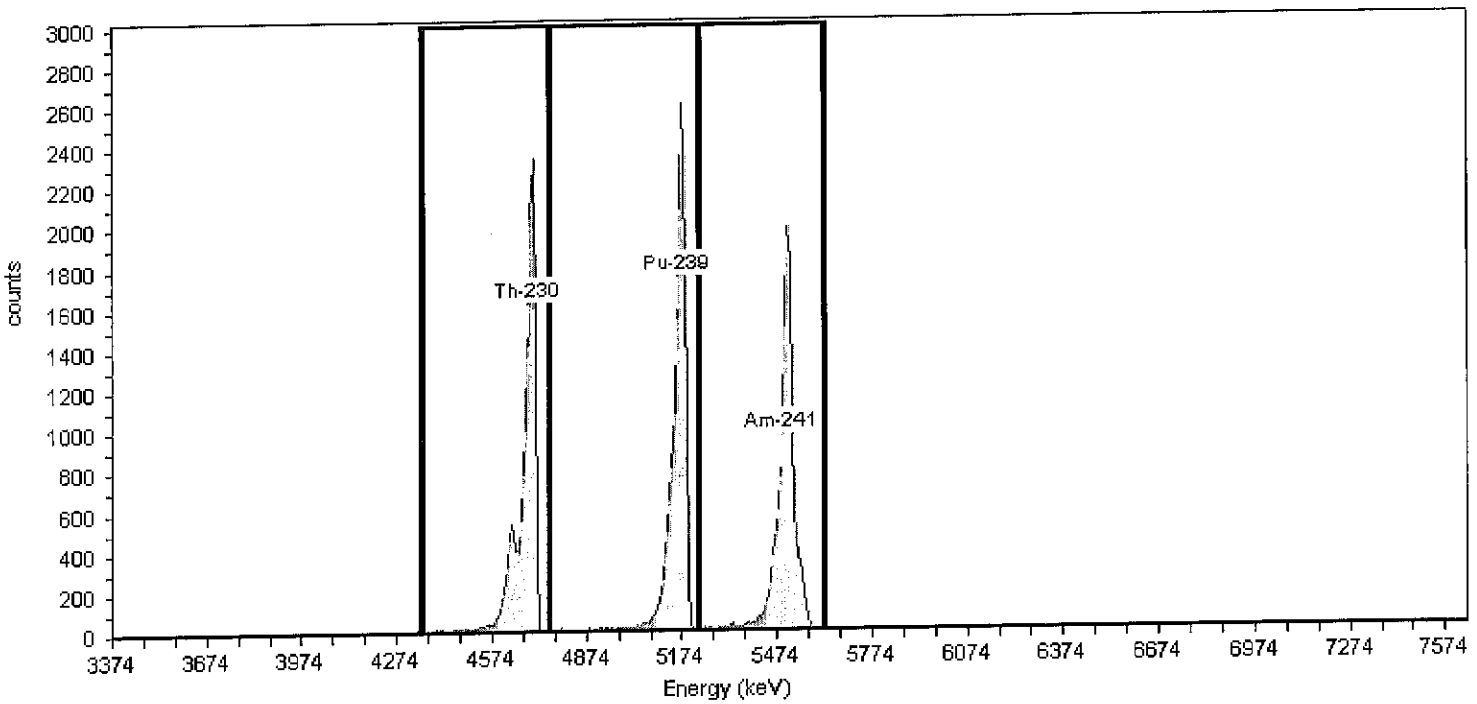
Certificate ID: 82237-334
Prepared by: Analytics

Certification Date: 6/1/2010 12:00:00PM
Description:

Acquisition

Detector: AV128 , SN: 49-179C6
Acquisition Start Date: 6/3/2011 12:54:45PM
Live Time: 140.00 min.
Real Time: 140.15 min.
Efficiency: 26.92% +/- 0.37% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	13,328.00	95.20
Pu-239	240	5.16	186	249	14,413.00	102.95
Am-241	284	5.49	249	303	12,713.00	90.81

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Alpha-Spectroscopy Calibration Report

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
1:07:49PM 7/25/2011

Calibration

Name: June2011_AV128_ICV
Description:
Detector: AV128

Calibration Date: 6/10/2011 3:00:38PM
Analyst: 60040

Source Info

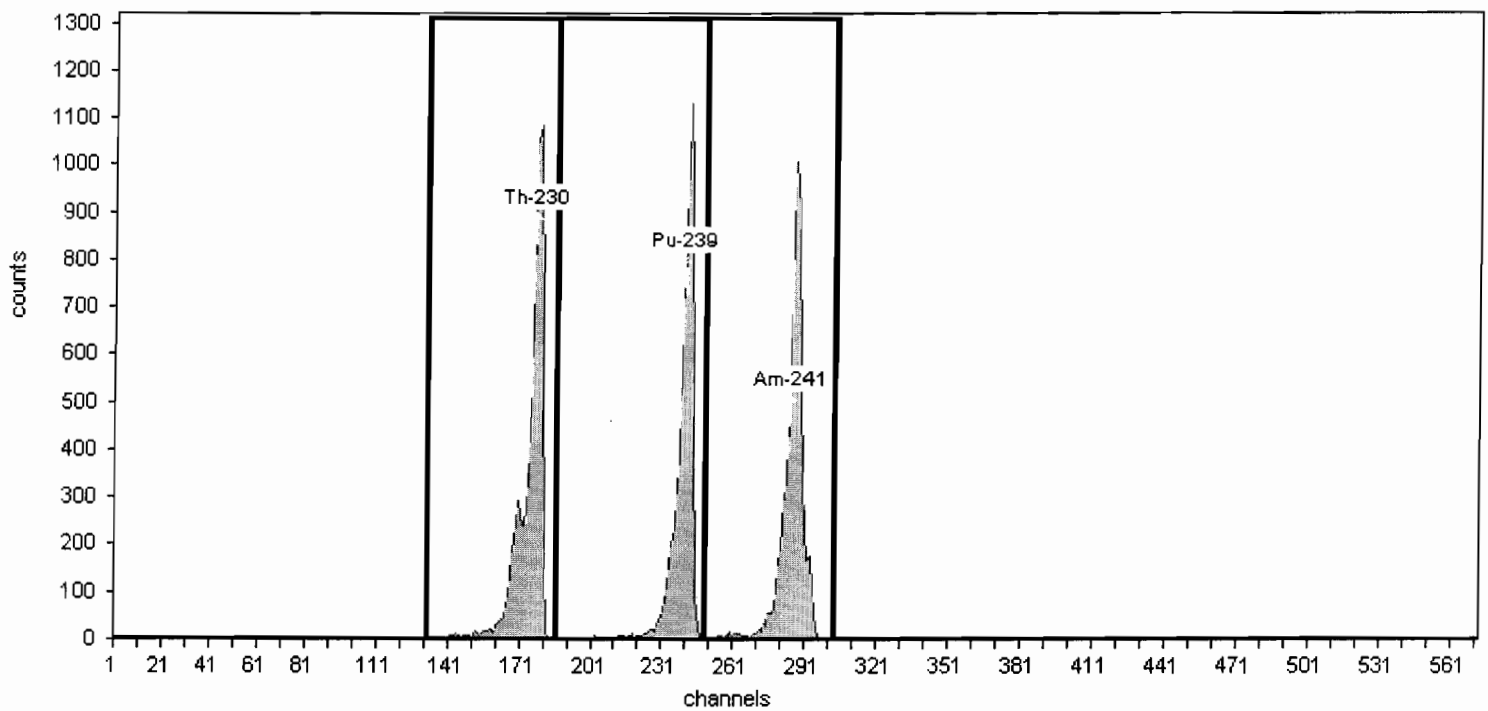
Certificate ID: 82236-334
Prepared by: Analytics

Certification Date: 6/2/2010 12:00:00PM
Description:

Acquisition

Detector: AV128 , SN: 49-179C6
Acquisition Start Date: 6/5/2011 7:15:44AM
Live Time: 60.00 min.
Real Time: 60.05 min.
Efficiency: 27.37% +/- 0.43% TPU(2 sigma)

Energy Calibration Equation:
Gain = 7.4575 keV / Ch
Offset = 3,366.95 keV
Quadratic = 0.0000 keV / Ch^2



General Analysis

Method: Manual (ROI)
Algorithm: Linear

Initial Calibration: No
Shelf: 1

Nuclide Activity Summary

Nuclide	Peak Channel	Peak Energy MeV	ROI Start Channel	ROI End Channel	Gross Counts	Net Count Rate (cpm)
Th-230	177	4.69	132	186	7,054.00	117.57
Pu-239	240	5.16	186	249	6,556.00	109.27
Am-241	284	5.49	249	303	6,745.00	112.42

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 140415

Guterl Steel

Lot #: F2J250431

Karl VanKeuren

Shaw Environmental & Infrastru
Attn: Accounts Payable
PO Box 98519
Baton Rouge, LA 70884

TESTAMERICA LABORATORIES, INC.

Lynn Fussner
Project Manager

November 8, 2012

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

Case Narrative
LOT NUMBER: F2J250431-

This report contains the analytical results for the 22 samples received under chain of custody by TestAmerica in St. Louis on October 25, 2012. These samples are associated with your Guterl Steel project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all DoD QSM 4.2 requirements for which accreditations are held by TestAmerica in St. Louis except as permitted or accepted by the client and/or site specific documentation. In addition, the test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica in St. Louis. **TestAmerica St. Louis' Florida certification number is E87689.** Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium and carbon-14, unless requested wet weight by the client.

Observations/Nonconformances
Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Certification Statement:
I certify that this image, and all data packages produced from this image, accurately represent the data and is in compliance with the SAP requirements, both technically and for completeness, other than the conditions detailed above or in the sample data package case narrative. The data, contained in this electronic image and computer-readable EDD, have been authorized by the lab manager, or the manager's designee.

The following clean-up methods for Organic analyses may have been used on samples in this data set. Specific methods employed are documented on the batch extraction logs.

Method 3600C: Cleanup
Method 3620C: Florisil Cleanup
Method 3630C: Silica Gel Cleanup
Method 3640A: Gel-Permeation Cleanup
Method 3650B: Acid-Base Partition Cleanup
Method 3660B: Sulfur Cleanup
Method 3665A: Sulfuric Acid/Permanganate Cleanup

Isotopic Uranium by Alpha Spectroscopy (EML A-01-R MOD)

The sample aliquot was reduced due to high activity from historical data. The Uranium samples (F2J250431-010 and -011) did not meet the CRDL due to the samples high activity above the MDC.

Affected Samples:
F2J250431 (1): A04BMW704DD0005
F2J250431 (2): A04DMW710D0005
F2J250431 (3): A04DMW708DD0005
F2J250431 (4): A04DMW710DD0005
F2J250431 (5): A04DMW713D0005
F2J250431 (6): A04DMW604D0005
F2J250431 (7): DUPLICATE 03
F2J250431 (8): A04DMW709DD0005
F2J250431 (9): A04BMW707DD0005
F2J250431 (10): A04BMW605D0005
F2J250431 (11): A04BMW260005

The sample aliquot was reduced due to high activity from historical data. The Uranium spike recovery for F2J250431-007S and -007D are outside the upper control limit. The samples associated with the batch were re-extracted. The re-extracted Uranium samples (F2J250431-017S and -017D) have spike recoveries outside the upper control limit due to sample matrix interference.

Affected Samples:
F2J250431 (12): A04BMW704DD0005
F2J250431 (13): A04DMW710D0005
F2J250431 (14): A04DMW708DD0005
F2J250431 (15): A04DMW710DD0005
F2J250431 (16): A04DMW713D0005
F2J250431 (17): A04DMW604D0005
F2J250431 (18): DUPLICATE 03
F2J250431 (19): A04DMW709DD0005
F2J250431 (20): A04BMW707DD0005
F2J250431 (22): A04BMW260005

The sample aliquot was reduced due to high activity from historical data. There was also insufficient sample to perform the sample at the requested 1000mL. The Uranium sample (F2J250431-021) did not meet the CRDL due to the sample's high activity which is greater than the MDC.

Affected Samples:
F2J250431 (21): A04BMW605D0005

There were no other nonconformances or observations noted with any analysis on this lot.

METHODS SUMMARY

F2J250431

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Isotopic Uranium by Alpha Spectroscopy	EML A-01-R MOD	
ICP-MS (6020A)	SW846 6020A	

References:

EML "ENVIRONMENTAL MEASUREMENTS LABORATORY PROCEDURES MANUAL" HASL-300 28TH EDITION, VOLUME I and II DEPARTMENT OF ENERGY

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F2J250431

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MW4MT	001	A04BMW704DD0005	10/22/12	10:30
MW4M5	002	A04DMW710D0005	10/22/12	12:50
MW4M6	003	A04DMW708DD0005	10/22/12	15:15
MW4M7	004	A04DMW710DD0005	10/22/12	16:40
MW4M9	005	A04DMW713D0005	10/23/12	13:30
MW4NA	006	A04DMW604D0005	10/23/12	15:05
MW4NC	007	DUPLICATE 03	10/23/12	
MW4ND	008	A04DMW709DD0005	10/23/12	16:40
MW4NE	009	A04BMW707DD0005	10/23/12	17:50
MW4NF	010	A04BMW605D0005	10/24/12	10:15
MW4NG	011	A04BMW260005	10/24/12	12:45
MW4NH	012	A04BMW704DD0005	10/22/12	10:30
MW4NJ	013	A04DMW710D0005	10/22/12	12:50
MW4NK	014	A04DMW708DD0005	10/22/12	15:15
MW4NL	015	A04DMW710DD0005	10/22/12	16:40
MW4NM	016	A04DMW713D0005	10/23/12	13:30
MW4NQ	017	A04DMW604D0005	10/23/12	15:05
MW4NR	018	DUPLICATE 03	10/23/12	
MW4NT	019	A04DMW709DD0005	10/23/12	16:40
MW4NV	020	A04BMW707DD0005	10/23/12	17:50
MW4NW	021	A04BMW605D0005	10/24/12	10:15
MW4N0	022	A04BMW260005	10/24/12	12:45

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW704DD0005

TOTAL Metals

Lot-Sample #...: F2J250431-001 Matrix.....: WATER
Date Sampled...: 10/22/12 10:30 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300080						
Uranium	72.4	1	ug/L	SW846 6020A	10/26-10/31/12	MW4MT1AA
		Dilution Factor: 1		Analysis Time..: 03:01		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0005

TOTAL Metals

Lot-Sample #...: F2J250431-002 Matrix.....: WATER
Date Sampled...: 10/22/12 12:50 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300080						
Uranium	66.0	1	ug/L	SW846 6020A	10/26-10/31/12	MW4M51AA
		Dilution Factor: 1		Analysis Time..: 03:08		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0005

TOTAL Metals

Lot-Sample #...: F2J250431-003 Matrix.....: WATER
Date Sampled...: 10/22/12 15:15 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300080						
Uranium	20.0	1	ug/L	SW846 6020A	10/26-10/31/12	MW4M61AA
		Dilution Factor: 1		Analysis Time..: 03:15		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0005

TOTAL Metals

Lot-Sample #...: F2J250431-004 Matrix.....: WATER
Date Sampled...: 10/22/12 16:40 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300080						
Uranium	28.6	1	ug/L	SW846 6020A	10/26-10/31/12	MW4M71AA
		Dilution Factor: 1		Analysis Time..: 03:22		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0005

TOTAL Metals

Lot-Sample #...: F2J250431-005 **Matrix.....:** WATER
Date Sampled...: 10/23/12 13:30 **Date Received..:** 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300080						
Uranium	ND	1	ug/L	SW846 6020A	10/26-10/31/12	MW4M91AA
		Dilution Factor: 1		Analysis Time..: 03:29		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604D0005

TOTAL Metals

Lot-Sample #...: F2J250431-006 Matrix.....: WATER
Date Sampled...: 10/23/12 15:05 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300080						
Uranium	112	1	ug/L	SW846 6020A	10/26-10/31/12	MW4NA1AA
		Dilution Factor: 1		Analysis Time..: 03:36		

Shaw Environmental & Infrastructure Inc

Client Sample ID: DUPLICATE 03

TOTAL Metals

Lot-Sample #...: F2J250431-007 Matrix.....: WATER
Date Sampled...: 10/23/12 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300080						
Uranium	111	1	ug/L	SW846 6020A	10/26-10/31/12	MW4NC1AA
		Dilution Factor: 1		Analysis Time..: 04:24		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0005

TOTAL Metals

Lot-Sample #...: F2J250431-008 **Matrix.....:** WATER
Date Sampled...: 10/23/12 16:40 **Date Received..:** 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300080						
Uranium	**85.9**	1	**ug/L**	**SW846 6020A**	**10/26-10/31/12**	**MW4ND1AA**
		Dilution Factor: 1		Analysis Time..: 04:31		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0005

TOTAL Metals

Lot-Sample #...: F2J250431-009 Matrix.....: WATER
Date Sampled...: 10/23/12 17:50 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300080						
Uranium	9.4	1	ug/L	SW846 6020A	10/26-10/31/12	MW4NE1AA
		Dilution Factor: 1		Analysis Time..: 04:38		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0005

TOTAL Metals

Lot-Sample #...: F2J250431-010 Matrix.....: WATER
Date Sampled...: 10/24/12 10:15 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300080						
Uranium	**270**	**1**	**ug/L**	**SW846 6020A**	**10/26-10/31/12**	**MW4NF1AA**
		Dilution Factor: 1		Analysis Time..: 04:44		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260005

TOTAL Metals

Lot-Sample #...: F2J250431-011 Matrix.....: WATER
Date Sampled...: 10/24/12 12:45 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300080						
Uranium	243	1	ug/L	SW846 6020A	10/26-11/02/12	MW4NG1AA
		Dilution Factor: 1		Analysis Time..: 19:56		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW704DD0005

DISSOLVED Metals

Lot-Sample #...: F2J250431-012 Matrix.....: WATER
Date Sampled...: 10/22/12 10:30 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300077						
Uranium	73.4	1	ug/L	SW846 6020A	10/26-10/31/12	MW4NH1AC
		Dilution Factor: 1		Analysis Time..: 00:36		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0005

DISSOLVED Metals

Lot-Sample #...: F2J250431-013 Matrix.....: WATER
Date Sampled...: 10/22/12 12:50 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300077						
Uranium	66.8	1	ug/L	SW846 6020A	10/26-10/31/12	MW4NJ1AC
		Dilution Factor: 1		Analysis Time..: 00:43		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0005

DISSOLVED Metals

Lot-Sample #...: F2J250431-014 Matrix.....: WATER
Date Sampled...: 10/22/12 15:15 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300077						
Uranium	20.1	1	ug/L	SW846 6020A	10/26-10/31/12	MW4NK1AC
		Dilution Factor: 1		Analysis Time..: 00:50		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0005

DISSOLVED Metals

Lot-Sample #...: F2J250431-015 Matrix.....: WATER
Date Sampled...: 10/22/12 16:40 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300077						
Uranium	28.3	1	ug/L	SW846 6020A	10/26-10/31/12	MW4NL1AC
		Dilution Factor: 1		Analysis Time..: 00:57		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0005

DISSOLVED Metals

Lot-Sample #...: F2J250431-016 **Matrix.....:** WATER
Date Sampled...: 10/23/12 13:30 **Date Received..:** 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300077						
Uranium	ND	1	ug/L	SW846 6020A	10/26-10/31/12	MW4NM1AC
		Dilution Factor: 1		Analysis Time..: 01:04		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604D0005

DISSOLVED Metals

Lot-Sample #...: F2J250431-017 Matrix.....: WATER
Date Sampled...: 10/23/12 15:05 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300077						
Uranium	111	1	ug/L	SW846 6020A	10/26-10/31/12	MW4NQ1AC
		Dilution Factor: 1		Analysis Time..: 01:11		

Shaw Environmental & Infrastructure Inc

Client Sample ID: DUPLICATE 03

DISSOLVED Metals

Lot-Sample #...: F2J250431-018 Matrix.....: WATER
Date Sampled...: 10/23/12 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300077						
Uranium	114	1	ug/L	SW846 6020A	10/26-10/31/12	MW4NR1AC
		Dilution Factor: 1		Analysis Time..: 01:59		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0005

DISSOLVED Metals

Lot-Sample #...: F2J250431-019 Matrix.....: WATER
Date Sampled...: 10/23/12 16:40 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300077						
Uranium	83.8	1	ug/L	SW846 6020A	10/26-10/31/12	MW4NT1AC
		Dilution Factor: 1		Analysis Time..: 02:06		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0005

DISSOLVED Metals

Lot-Sample #...: F2J250431-020 Matrix.....: WATER
Date Sampled...: 10/23/12 17:50 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300077						
Uranium	8.4	1	ug/L	SW846 6020A	10/26-10/31/12	MW4NV1AC
		Dilution Factor: 1		Analysis Time..: 02:13		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0005

DISSOLVED Metals

Lot-Sample #...: F2J250431-021 Matrix.....: WATER
Date Sampled...: 10/24/12 10:15 Date Received..: 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300077						
Uranium	266	1	ug/L	SW846 6020A	10/26-10/31/12	MW4NW1AC
		Dilution Factor: 1		Analysis Time..: 02:20		

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260005

DISSOLVED Metals

Lot-Sample #...: F2J250431-022 **Matrix.....:** WATER
Date Sampled...: 10/24/12 12:45 **Date Received..:** 10/25/12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2300077						
Uranium	**260**	1	**ug/L**	**SW846 6020A**	**10/26-10/31/12**	**MW4N01AC**
		Dilution Factor: 1		Analysis Time..: 02:27		

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F2J250431 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F2J260000-080 **Prep Batch #...:** 2300080						
Uranium	ND	1	ug/L	SW846 6020A	10/26-10/31/12	MW5HM1AA
		Dilution Factor: 1				
		Analysis Time..: 02:47				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

DISSOLVED Metals

Client Lot #...: F2J250431 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F2J260000-077 **Prep Batch #...:** 2300077						
Uranium	ND	1	ug/L	SW846 6020A	10/26-10/31/12	MW5HH1AA
		Dilution Factor: 1				
		Analysis Time..: 00:23				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2J250431 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F2J260000-080 **Prep Batch #...:** 2300080					
Uranium	99	(80 - 120)	SW846 6020A	10/26-10/31/12	MW5HM1AC
		Dilution Factor: 1		Analysis Time..: 02:54	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

DISSOLVED Metals

Client Lot #...: F2J250431 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F2J260000-077 **Prep Batch #...:** 2300077					
Uranium	98	(80 - 120)	SW846 6020A	10/26-10/31/12	MW5HH1AC
		Dilution Factor: 1		Analysis Time..: 00:30	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F2J250431 **Matrix.....:** WATER
Date Sampled...: 10/23/12 15:05 **Date Received..:** 10/25/12

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F2J250431-006 **Prep Batch #...:** 2300080							
Uranium	106	(80 - 120)			SW846 6020A	10/26-10/31/12	MW4NA1AE
	105	(80 - 120)	0.72	(0-20)	SW846 6020A	10/26-10/31/12	MW4NA1AF
		Dilution Factor: 1					
		Analysis Time..: 03:49					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

DISSOLVED Metals

Client Lot #...: F2J250431 **Matrix.....:** WATER
Date Sampled...: 10/23/12 15:05 **Date Received..:** 10/25/12

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F2J250431-017 **Prep Batch #...:** 2300077							
Uranium	108	(80 - 120)			SW846 6020A	10/26-10/31/12	MW4NQ1AF
	108	(80 - 120)	0.07	(0-20)	SW846 6020A	10/26-10/31/12	MW4NQ1AG
		Dilution Factor: 1					
		Analysis Time..: 01:25					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW704DD0005

Radiochemistry

Lab Sample ID: F2J250431-001
Work Order: MW4MT
Matrix: WATER

Date Collected: 10/22/12 1030
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2300025	Yld % 73
Uranium 234	26.0		2.4	0.1	0.08	10/29/12	10/29/12
Uranium 235/236	0.95		0.24	0.10	0.04	10/29/12	10/29/12
Uranium 238	21.5		2.0	0.1	0.03	10/29/12	10/29/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0005

Radiochemistry

Lab Sample ID: F2J250431-002
Work Order: MW4M5
Matrix: WATER

Date Collected: 10/22/12 1250
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2300025	Yld % 75
Uranium 234	19.9		1.9	0.1	0.09	10/29/12	10/29/12
Uranium 235/236	1.13		0.26	0.10	0.07	10/29/12	10/29/12
Uranium 238	19.7		1.9	0.1	0.09	10/29/12	10/29/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0005

Radiochemistry

Lab Sample ID: F2J250431-003
Work Order: MW4M6
Matrix: WATER

Date Collected: 10/22/12 1515
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2300025	Yld % 80
Uranium 234	6.59		0.76	0.10	0.1	10/29/12	10/29/12
Uranium 235/236	0.29		0.12	0.10	0.07	10/29/12	10/29/12
Uranium 238	5.72		0.68	0.10	0.06	10/29/12	10/29/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0005

Radiochemistry

Lab Sample ID: F2J250431-004
Work Order: MW4M7
Matrix: WATER

Date Collected: 10/22/12 1640
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2300025	Yld % 82
Uranium 234	8.85		0.95	0.10	0.09	10/29/12	10/29/12
Uranium 235/236	0.36		0.14	0.10	0.09	10/29/12	10/29/12
Uranium 238	8.82		0.95	0.10	0.08	10/29/12	10/29/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0005

Radiochemistry

Lab Sample ID: F2J250431-005
Work Order: MW4M9
Matrix: WATER

Date Collected: 10/23/12 1330
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2300025		Yld % 77
Uranium 234	0.066		0.045	0.100	0.056	10/29/12	10/31/12
Uranium 235/236	0.014	U	0.025	0.100	0.044	10/29/12	10/31/12
Uranium 238	0.081		0.049	0.100	0.056	10/29/12	10/31/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604D0005

Radiochemistry

Lab Sample ID: F2J250431-006
Work Order: MW4NA
Matrix: WATER

Date Collected: 10/23/12 1505
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2300025	Yld % 68
Uranium 234	36.1		3.3	0.1	0.08	10/29/12	10/29/12
Uranium 235/236	1.65		0.35	0.10	0.04	10/29/12	10/29/12
Uranium 238	35.4		3.3	0.1	0.06	10/29/12	10/29/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: DUPLICATE 03

Radiochemistry

Lab Sample ID: F2J250431-007
Work Order: MW4NC
Matrix: WATER

Date Collected: 10/23/12 0000
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2300025	Yld % 69
Uranium 234	33.6		3.1	0.1	0.09	10/29/12	10/29/12
Uranium 235/236	2.08		0.38	0.10	0.09	10/29/12	10/29/12
Uranium 238	34.5		3.1	0.1	0.08	10/29/12	10/29/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0005

Radiochemistry

Lab Sample ID: F2J250431-008
Work Order: MW4ND
Matrix: WATER

Date Collected: 10/23/12 1640
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD			pCi/L		Batch # 2300025		Yld % 69
Uranium 234	27.6		2.6	0.1	0.07	10/29/12	10/29/12
Uranium 235/236	1.41		0.31	0.10	0.08	10/29/12	10/29/12
Uranium 238	27.8		2.6	0.1	0.07	10/29/12	10/29/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0005

Radiochemistry

Lab Sample ID: F2J250431-009
Work Order: MW4NE
Matrix: WATER

Date Collected: 10/23/12 1750
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2300025	Yld % 71
Uranium 234	14.7		1.5	0.1	0.06	10/29/12	10/29/12
Uranium 235/236	0.24		0.12	0.10	0.04	10/29/12	10/29/12
Uranium 238	3.32		0.48	0.10	0.03	10/29/12	10/29/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0005

Radiochemistry

Lab Sample ID: F2J250431-010
Work Order: MW4NF
Matrix: WATER

Date Collected: 10/24/12 1015
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2300025	Yld % 50
Uranium 234	79.7		7.0	0.1	0.1	10/29/12	10/29/12
Uranium 235/236	3.59		0.60	0.10	0.12	10/29/12	10/29/12
Uranium 238	79.1		7.0	0.1	0.1	10/29/12	10/29/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260005

Radiochemistry

Lab Sample ID: F2J250431-011
Work Order: MW4NG
Matrix: WATER

Date Collected: 10/24/12 1245
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2300025	Yld % 49
Uranium 234	77.3		6.9	0.1	0.1	10/29/12	10/29/12
Uranium 235/236	3.86		0.65	0.10	0.06	10/29/12	10/29/12
Uranium 238	76.9		6.9	0.1	0.09	10/29/12	10/29/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW704DD0005

Radiochemistry

Lab Sample ID: F2J250431-012
Work Order: MW4NH
Matrix: WATER

Date Collected: 10/22/12 1030
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2306013	Yld % 80
Uranium 234	27.9		2.5	0.1	0.05	11/01/12	11/05/12
Uranium 235/236	1.20		0.23	0.10	0.06	11/01/12	11/05/12
Uranium 238	22.6		2.0	0.1	0.05	11/01/12	11/05/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710D0005

Radiochemistry

Lab Sample ID: F2J250431-013
Work Order: MW4NJ
Matrix: WATER

Date Collected: 10/22/12 1250
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2306013	Yld % 78
Uranium 234	20.3		1.9	0.1	0.06	11/01/12	11/05/12
Uranium 235/236	1.07		0.22	0.10	0.05	11/01/12	11/05/12
Uranium 238	20.1		1.9	0.1	0.06	11/01/12	11/05/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW708DD0005

Radiochemistry

Lab Sample ID: F2J250431-014
Work Order: MW4NK
Matrix: WATER

Date Collected: 10/22/12 1515
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2306013	Yld % 81
Uranium 234	7.02		0.73	0.10	0.05	11/01/12	11/05/12
Uranium 235/236	0.35		0.11	0.10	0.06	11/01/12	11/05/12
Uranium 238	6.41		0.68	0.10	0.07	11/01/12	11/05/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW710DD0005

Radiochemistry

Lab Sample ID: F2J250431-015
Work Order: MW4NL
Matrix: WATER

Date Collected: 10/22/12 1640
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2306013	Yld % 87
Uranium 234	9.34		0.92	0.10	0.05	11/01/12	11/05/12
Uranium 235/236	0.47		0.13	0.10	0.02	11/01/12	11/05/12
Uranium 238	9.06		0.90	0.10	0.02	11/01/12	11/05/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW713D0005

Radiochemistry

Lab Sample ID: F2J250431-016
Work Order: MW4NM
Matrix: WATER

Date Collected: 10/23/12 1330
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				**pCi/L**		**Batch # 2306013**	**Yld % 83**
Uranium 234	0.046	U	0.046	0.100	0.067	11/01/12	11/05/12
Uranium 235/236	0.011	U	0.026	0.100	0.050	11/01/12	11/05/12
Uranium 238	0.020		0.023	0.100	0.018	11/01/12	11/05/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW604D0005

Radiochemistry

Lab Sample ID: F2J250431-017
Work Order: MW4NQ
Matrix: WATER

Date Collected: 10/23/12 1505
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2306013	Yld % 78
Uranium 234	32.2		2.9	0.1	0.06	11/01/12	11/05/12
Uranium 235/236	1.71		0.28	0.10	0.06	11/01/12	11/05/12
Uranium 238	32.6		2.9	0.1	0.06	11/01/12	11/05/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: DUPLICATE 03

Radiochemistry

Lab Sample ID: F2J250431-018
Work Order: MW4NR
Matrix: WATER

Date Collected: 10/23/12 0000
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2306013	Yld % 74
Uranium 234	34.7		3.1	0.1	0.06	11/01/12	11/05/12
Uranium 235/236	1.77		0.29	0.10	0.02	11/01/12	11/05/12
Uranium 238	34.3		3.0	0.1	0.05	11/01/12	11/05/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04DMW709DD0005

Radiochemistry

Lab Sample ID: F2J250431-019
Work Order: MW4NT
Matrix: WATER

Date Collected: 10/23/12 1640
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2306013	Yld % 80
Uranium 234	28.2		2.5	0.1	0.04	11/01/12	11/05/12
Uranium 235/236	1.26		0.23	0.10	0.02	11/01/12	11/05/12
Uranium 238	27.1		2.4	0.1	0.04	11/01/12	11/05/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW707DD0005

Radiochemistry

Lab Sample ID: F2J250431-020
Work Order: MW4NV
Matrix: WATER

Date Collected: 10/23/12 1750
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L		Batch # 2306013	Yld % 91
Uranium 234	12.2		1.2	0.1	0.07	11/01/12	11/05/12
Uranium 235/236	0.128		0.084	0.100	0.074	11/01/12	11/05/12
Uranium 238	2.49		0.38	0.10	0.08	11/01/12	11/05/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW605D0005

Radiochemistry

Lab Sample ID: F2J250431-021
Work Order: MW4NW
Matrix: WATER

Date Collected: 10/24/12 1015
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 2306013		Yld % 49
Uranium 234	85.2		7.4	0.1	0.1	11/01/12	11/05/12
Uranium 235/236	4.75		0.65	0.10	0.08	11/01/12	11/05/12
Uranium 238	84.0		7.3	0.1	0.09	11/01/12	11/05/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

Shaw Environmental & Infrastructure Inc

Client Sample ID: A04BMW260005

Radiochemistry

Lab Sample ID: F2J250431-022
Work Order: MW4N0
Matrix: WATER

Date Collected: 10/24/12 1245
Date Received: 10/25/12 0935

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date
Iso URANIUM (LONG CT) DOE A-01-R MOD				pCi/L	Batch # 2306013		Yld % 57
Uranium 234	69.8		6.1	0.1	0.03	11/01/12	11/05/12
Uranium 235/236	3.66		0.52	0.10	0.07	11/01/12	11/05/12
Uranium 238	70.5		6.1	0.1	0.06	11/01/12	11/05/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F2J250431
Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	MDC	Prep Date	Analysis Date	Lab Sample ID
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**Batch # 2300025**		**Yld % 98**		**F2J260000-025B**
Uranium 234	0.0024	U	0.0089	0.100	0.022		10/29/12	10/29/12
Uranium 235/236	0.010	U	0.015	0.100	0.014		10/29/12	10/29/12
Uranium 238	0.007	U	0.012	0.100	0.022		10/29/12	10/29/12
Iso URANIUM (LONG CT) DOE A-01-R MOD			**pCi/L**	**Batch # 2306013**		**Yld % 95**		**F2K010000-013B**
Uranium 234	0.007	U	0.017	0.100	0.032		11/01/12	11/05/12
Uranium 235/236	-0.003	U	0.011	0.100	0.031		11/01/12	11/05/12
Uranium 238	-0.020	U	0.021	0.100	0.050		11/01/12	11/05/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only
Bold results are greater than the MDC.
U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F2J250431
Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ+/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F2J260000-025C**
Uranium 234	3.27	3.30	0.37	0.03	90	101	(84 - 120)
Uranium 238	3.39	3.72	0.41	0.02	90	110	(83 - 121)
	Batch #:	2300025		Analysis Date:	10/29/12		
Iso URANIUM (LONG CT) DOE A-01-R MOD		**pCi/L**		**A-01-R MOD**			**F2K010000-013C**
Uranium 234	3.27	3.27	0.34	0.03	83	100	(84 - 120)
Uranium 238	3.39	3.35	0.35	0.02	83	99	(83 - 121)
	Batch #:	2306013		Analysis Date:	11/05/12		

NOTE(S):

MDC is determined by instrument performance only
Calculations are performed before rounding to avoid round-off error in calculated results

MATRIX SPIKE/MATRIX SPIKE DUPLICATE REPORT

Radiochemistry

Client Lot ID: F2J250431
Matrix: WATER

Date Sampled: 10/23/12 1505
Date Received: 10/25/12 0935

Parameter		Spike Amount	SPIKE Result		Total Uncert. (2 σ+/-)	Spike Yld	SAMPLE Result	Total Uncert. (2σ +/-)	QC Sample ID % Yld	%Rec	QC Control Limits
Iso URANIUM (LONG CT) DOE A					**pCi/L**		**A-01-R MOD**			**F2J250431-006**	
Uranium 234		6.53	41.0		3.7	65	36.1	3.3	68	74	(65 - 146)
	Spk2	6.53	41.3		3.8	65	36.1	3.3	68	79	(65 - 146)
									Precision:	0.8	%RPD
Uranium 238		6.78	41.8		3.8	65	35.4	3.3	68	94	(68 - 143)
	Spk2	6.77	42.3		3.8	65	35.4	3.3	68	101	(68 - 143)
									Precision:	1	%RPD
		Batch #:	2300025			Analysis date:	10/29/12				
Iso URANIUM (LONG CT) DOE A					**pCi/L**		**A-01-R MOD**			**F2J250431-017**	
Uranium 234		6.53	42.0	a	3.7	65	32.2	2.9	78	150	a (65 - 146)
	Spk2	6.53	41.6		3.7	65	32.2	2.9	78	144	(65 - 146)
									Precision:	0.9	%RPD
Uranium 238		6.77	40.8		3.6	65	32.6	2.9	78	121	(68 - 143)
	Spk2	6.78	43.0	a	3.8	65	32.6	2.9	78	153	a (68 - 143)
									Precision:	5	%RPD
		Batch #:	2306013			Analysis date:	11/05/12				

NOTE(S)

Data are incomplete without the case narrative.

Calculations are performed before rounding to avoid round-off error in calculated results

a Spiked analyte outside of stated QC limits.

F2J250431

CLIENT ANALYSIS SUMMARY

Storage Loc: R249-251,METS

Project Manager: LMF Quote #: 89251 SDG:

Date Received: 2012-10-25

Project: 140415 Guteri Steel

Analytical Due Date: 2012-11-06

PO#: 697886 Report to: Karl VanKeuren

Report Due Date: 2012-11-08

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: D Expanded Deliverable

#SMPS in LOT: 22 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
1	A04BMW704DD0005			2012-10-22 / 1030	MW4MT	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
2	A04DMW710D0005			2012-10-22 / 1250	MW4M5	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
3	A04DMW708DD0005			2012-10-22 / 1515	MW4M6	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
4	A04DMW710DD0005			2012-10-22 / 1640	MW4M7	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
5	A04DMW713D0005			2012-10-23 / 1330	MW4M9	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
6	A04DMW604D0005			2012-10-23 / 1505	MW4NA	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	ZV	RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06

F2J250431

CLIENT ANALYSIS SUMMARY

Storage Loc: R249-251,METS

Project Manager: LMF | Quote #: 89251 | SDG:

Project: 140415 | Guterl Steel

Date Received: 2012-10-25

Analytical Due Date: 2012-11-06

PO#: 697886 | Report to: Karl VanKeuren

Report Due Date: 2012-11-08

Client: 522706 Shaw Environmental & Infrastructure Inc

#SMPS In LOT: 22

Report Type: D Expanded Deliverable

EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium instead of 200.8

D	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
D	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
S	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
S	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
7	DUPLICATE 03			2012-10-23 / 0	MW4NC	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
8	A04DMW709DD0005			2012-10-23 / 1640	MW4ND	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
9	A04BMW707DD0005			2012-10-23 / 1750	MW4NE	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
10	A04BMW605D0005			2012-10-24 / 1015	MW4NF	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
11	A04BMW260005			2012-10-24 / 1245	MW4NG	WATER

SAMPLE COMMENTS:

	UX	I&	SW846	6020A	WATER, 6020 Total Uranium	GJ	METALS, TOTAL - 2% HCL	D4	DOD QSM V4.X	PROT: A	WRK LOC	06	
	XX	ZV		RAD SCREEN	WATER, RAD SCREEN, RAD SCREEN, Special L	RA	IN-HOUSE RAD SCREEN	01	STANDARD TEST SET	PROT: B	WRK LOC	06	
	XX	2M	EML	A-01-R MOD	WATER, A-01-R MOD, Iso U (L CT)	J2	Extraction Chromatography - Sequential Actinides	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I

F2J250431

CLIENT ANALYSIS SUMMARY

Storage Loc: R249-251,METS

Project Manager: LMF
Quote #: 89251
SDG:
Date Received: 2012-10-25

Project: 140415
Guterl Steel
Analytical Due Date: 2012-11-06

PO#: 697886
Report to: Karl VanKeuren
Report Due Date: 2012-11-08

Client: 522706 Shaw Environmental & Infrastructure Inc
#SMPS in LOT: 22
Report Type: D Expanded Deliverable
EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
12	A04BMW704DD0005			2012-10-22 / 1030	MW4NH	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
13	A04DMW710D0005			2012-10-22 / 1250	MW4NJ	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
14	A04DMW708DD0005			2012-10-22 / 1515	MW4NK	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
15	A04DMW710DD0005			2012-10-22 / 1640	MW4NL	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
16	A04DMW713D0005			2012-10-23 / 1330	MW4NM	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
17	A04DMW604D0005			2012-10-23 / 1505	MW4NQ	WATER

SAMPLE COMMENTS:

	UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
D	UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
D	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
S	UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06
S	XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
18	DUPLICATE 03			2012-10-23 / 0	MW4NR	WATER

SAMPLE COMMENTS:

F2J250431 CLIENT ANALYSIS SUMMARY

Storage Loc: R249-251,METS

Project Manager: LMF Quote #: 89251 SDG:

Date Received: 2012-10-25

Project: 140415 Guterl Steel

Analytical Due Date: 2012-11-06

PO#: 697886 Report to: Karl VanKeuren

Report Due Date: 2012-11-08

Client: 522706 Shaw Environmental & Infrastructure Inc

Report Type: D Expanded Deliverable

#SMPS in LOT: 22 EDD Code: 00

DoD QSM 4.1 please use 6020 for total uranium istead of 200.8

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
19	A04DMW709DD0005			2012-10-23 / 1640	MW4NT	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
20	A04BMW707DD0005			2012-10-23 / 1750	MW4NV	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
21	A04BMW605D0005			2012-10-24 / 1015	MW4NW	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06		

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
22	A04BMW260005			2012-10-24 / 1245	MW4N0	WATER

SAMPLE COMMENTS:

UX	I&	SW846 6020A	WATER, 6020 Dissolved Uranium	JX	METALS, FILTERED 2% HCL, DISSOLVED	D4	DOD QSM V4.X	PROT: A	WRK LOC	06		
XX	2M	EML A-01-R MOD	WATER, A-01-R MOD, Iso U Dissolved	H&	Extraction Chromatography, Sequential Actinides (Dissolved)	01	STANDARD TEST SET	PROT: A	WRK LOC	06		

Chain of Custody Record

CUR 262

Temperature on Receipt ____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

COC No. 22

Client	Project Manager	Date	Chain of Custody Number
SITAWS ENVIRONMENTAL + INFRASTRUCTURE	KARL VANFOSSEN PG, PMP	10/22, 23, 24/2012	
Address 5050 SECTION AVENUE	**Telephone Number (Area Code)/Fax Number** (513) 782-4745 (513) 782-4807	**Lab Number**	**Page** 1 of 2
City CINCINNATI	**State** OH	**Zip Code** 45212	**Site Contact** KEVIN CRONIN	**Lab Contact** LYNN FUSSNER
Project Name and Location (State) FORMER GUTERL SPECIALTY STEEL FUSRAP	**Carrier/Waybill Number**	
Contract/Purchase Order/Quote No.	

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: TOTAL U	TOTAL U (FILTERED)	ISOTOPIC U	ISOTOPIC U (FILTERED)	Special Instructions/ Conditions of Receipt
A04BMW704DD 0005	10/22/12	1030		X					X				X	X	X	X	(1 filtered, 1 non-filtered 2x LP, 2x 250p
A04DMW710D 0005		1250		X					X				X	X	X	X	
A04DMW708DD 0005		1515		X					X				X	X	X	X	
A04DMW710DD 0005		1640		X					X				X	X	X	X	
A04DMW713D 0005	10/23/12	1330		X					X				X	X	X	X	
A04DMW604D 0005		1505		X					X				X	X	X	X	
A04DMW604D 0005 MS		1505		X					X				X	X	X	X	
A04DMW604D 0005 MSD		1505		X					X				X	X	X	X	
DUPLICATE 03		—		X					X				X	X	X	X	
A04DMW709DD 0005		1640		X					X				X	X	X	X	
A04BMW707DD 0005		1750		X					X				X	X	X	X	SAMPLE NEED TO SPLIT FILTERED
A04BMW605D 0005	10/24/12	1015		X					X				X	X	X	X	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STANDARD

QC Requirements (Specify)

1. Relinquished By	Date	Time	1. Received By	Date	Time
Kevin Cronin	10/24/12	1340		10/24/12	1343
2. Relinquished By	**Date**	**Time**	**2. Received By**	**Date**	**Time**
	10/24/12	1640	Steven Coulton TAS12	10-25-12	0935
3. Relinquished By	**Date**	**Time**	**3. Received By**	**Date**	**Time**

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica St. Louis

[redacted]

Chain of Custody Record

CUR 262

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

COC No. 23

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
SHAW ENVIRONMENTAL + INFRASTRUCTURE	KARL VAN KEUREN PG, PMP	10/24/12	[illegible]

Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page
5050 SECTION AVENUE	(513) 782-4745 / (513) 782-4807		2 of 2

City	State	Zip Code	Site Contact	Lab Contact
CINCINNATI	OH	45212	KEVIN CRONIN	LYNN FUSSNER

Project Name and Location (State): FORMER GUTERL SPECIALTY STEEL FUSRAP

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Matrix: Aqueous	Matrix: Sed.	Matrix: Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	TOTAL U	TOTAL U (FILTERED)	ISOTOPIC U	ISOTOPIC U (FILTERED)	Special Instructions/ Conditions of Receipt
A04BMW26 0005	10/24/12	1245		X					X				X	X	X	X	(2xLP, 2x250p 1 filtered, 1 non)

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STANDARD

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Kevin Cronin	10/24/12	1340	1. Received By: [signature]	10/24/12	1343
2. Relinquished By: [signature]	10/24/12	1640	2. Received By: Steven Clayton TASTL	10-25-12	0935
3. Relinquished By:			3. Received By:		

Comments

TestAmerica St. Louis

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F2J250431

CUR Form #: 2 6 2

CONDITION UPON RECEIPT FORM

Client: Shaw

Quote No: 89251

COC/RFA No: 197318, 197321

Initiated By: SC Date: 10-25-12 Time: 0935

Shipping Information

Shipper: FedEx UPS DHL Courier Client Other: _____ Multiple Packages: Y N

Shipping # (s):*		Sample Temperature (s):**	
1. 4485 0262 6785	6.	1. ~~Ambient~~ 10-25-12 SC	6.
2. ~~6741~~ 10-25-12 SC	7.	2. 4	7.
3. 6796	8.	3. 2	8.
4.	9.	4.	9.
5.	10.	5.	10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	Y N	Are there custody seals present on the cooler?	8.	Y N	Are there custody seals present on bottles?
2.	Y N N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N N/A	Do custody seals on bottles appear to be tampered with?
3.	Y N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	Y N	Sample received with Chain of Custody?	11.	Y N N/A	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	Y N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	Y N	Sample received in proper containers?
6.	Y N	Was sample received broken?	13.	Y N N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	Y N	Is sample volume sufficient for analysis?	14.	Y N N/A	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

pH was incorrect for unfiltered LP for sample "A04DMW713 D0008 Added pH to correct per LF. Nitric Lot K26024.

Sample ending in 707DD0005 - Filtered metals bottle split open on arrival. Volume lost. LMP 10/26/12

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: [signature] Date: 10/26/12

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

APPENDIX D

Data Validation Reports
(Provided on same CD as Appendix A)

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 18, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H020470
Site Name: Guterl Steel
Samples Collected: 07/27/2011
3 Aqueous Samples and 3 Sludge Samples

Isotopic Thorium and Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
Sewer Location # 1 US-0001 Sludge	F1H020470-001	Sewer Location # 1 UW-0001 Aqueous DUP	F1H020470-002X
Sewer Location # 1 US-0001 Sludge DUP	F1H020470-001X	Sewer Location # 2 US-0002 Sludge	F1H020470-003
Sewer Location # 1 UW-0001 Aqueous	F1H020470-002	Sewer Location # 2 UW-0002 Aqueous	F1H020470-004

DUP- Laboratory Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium and isotopic thorium analytical data from aqueous and sludge samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site (Lockport Sewer Locations).

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy (EML A-01-R-MOD), according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are Th-228, Th-230, Th-232, U-234, U-235 and U-238. The sludge sample results are reported on a dry weight basis.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
X		Blank Results
X		Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
X		Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the isotopic thorium and isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site (Lockport Sewer Locations).

Based upon the Th-230 method blank result the Th-230 result for Sewer Location #1 UW-0001 is qualified as estimated (J).

The Th-228, Th-230 and Th-232 results for Sewer Location # 2 UW-0002 are qualified as non-detected estimated (UJ). The Th-229 tracer recovery is 32%.

The Th-230 result for Sewer Location #1 UW-0001 is qualified as estimated (J). The reported result is greater than the MDC and less than the two sigma uncertainty.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 07/27/2011. The condition upon receipt form indicates that aqueous radionuclide samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Solid method blank results associated with preparation batches 1223198 and 1223199 are summarized below.

Radionuclide	Sample ID	Conc pCi/g	Total Uncertainty pCi/g	MDA pCi/g	Z-Factor
Th-228	F1H110000-198B	-0.0009	0.0018	0.0166	-0.9991
Th-230	F1H110000-198B	0.0221	0.0181	0.0099	2.4428
Th-232	F1H110000-198B	0.0073	0.0103	0.0099	1.4117
U-234	F1H110000-199B	0.0106	0.0150	0.0224	1.4117
U-235	F1H110000-199B	0.0053	0.0105	0.0142	0.9991
U-238	F1H110000-199B	0.0042	0.0084	0.0114	0.9991

MDA- Minimal Detectable Activity

No sludge results are qualified based upon the positive Th-230 method blank results. Th-230 sludge results are at concentrations more than 10 X the Th-230 method blank results.

Aqueous method blank results associated with preparation batches 1227018 and 1227019 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
Th-228	F1H150000-018B	0.0000	0.0075	0.0202	0.000
Th-230	F1H150000-018B	0.0225	0.0260	0.0203	1.7275
Th-232	F1H150000-018B	0.0000	0.0075	0.0202	0.000
U-234	F1H150000-019B	0.0133	0.0218	0.0344	1.2170
U-235	F1H150000-019B	-0.0024	0.0047	0.0428	-0.9991
U-238	F1H150000-019B	0.0000	0.0076	0.0205	0.0000

MDA- Minimal Detectable Activity

Using professional judgment the Th-230 result for Sewer Location # 1 UW-0001 is qualified as estimated (J). The reported positive Th-230 result is 0.026pCi/L +/- 0.030pci/L. Statistically this result is equal to the positive method blank result. Both the positive sample result and positive method blank results are less than the laboratory reporting limit 0.10 pCi/L.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer	Tracer Recovery
Sewer Location # 2 UW-0002	Th-229	32%

The Th-228, Th-230 and Th-232 results for Sewer Location # 2 UW-0002 are qualified as non-detected estimated (UJ).

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batches 1223198, 1227018, 122319 and 1227019 are summarized below. The laboratory did not analyze a LCSD. The laboratory did analyze a laboratory duplicate pair for each isotope in each matrix.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

All LCS recoveries are within the QAPP acceptance criteria and the laboratory derived acceptance criteria. U-235, Th-228 and Th-232 are not LCS spiked isotopes.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No MS/MSDs were analyzed. The laboratory analyzed a LCS and laboratory duplicate samples for each sample matrix.

No results are qualified due to the absence of MS/MSD results.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H020470.

No results are qualified based upon the absence of field duplicate results.

Laboratory Duplicates

The laboratory analyzed sludge sample Sewer Location #1 US-0001 (F1H020470-001) as the laboratory duplicate pair for analytical batches 1223198 and 1223199. Results are summarized below.

Analyte	Sewer Location #1 US-0001			Sewer Location #1 US-0001 DUP		
	Result pCi/g	TPU	MDA	Result pCi/g	TPU	MDA
Th-228	0.270	0.073	0.031	0.220	0.066	0.031
Th-230	0.448	0.096	0.020	0.271	0.073	0.020
Th-232	0.224	0.065	0.021	0.220	0.065	0.021
U-234	3.55	0.387	0.027	3.15	0.354	0.020
U-235	0.201	0.067	0.014	0.195	0.067	0.025
U-238	3.72	0.401	0.011	3.33	0.370	0.020

TPU – Total Propagated Uncertainty

No sludge results are qualified based upon the laboratory duplicate precision.

The laboratory analyzed aqueous sample Sewer Location #1 UW-0001(F1H020470-002) as the laboratory duplicate pair for analytical batches 1227018 and 1227019. Results are summarized below.

Analyte	Sewer Location #1 UW-0001			Sewer Location #1 UW-0001 DUP		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
Th-228	-0.002 U	0.020	0.058	0.007 U	0.028	0.062
Th-230	0.026	0.030	0.023	0.018 U	0.026	0.025
Th-232	0.009 U	0.017	0.023	0.009 U	0.018	0.025
U-234	10.9	1.09	0.038	10.9	1.10	0.023
U-235	0.61	0.166	0.047	0.49	0.151	0.029
U-238	10.4	1.05	0.044	11.2	1.13	0.023

TPU – Total Propagated Uncertainty

No aqueous results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
Sewer Location #1 UW-0001	Th-230	0.026	0.030	0.023

The Th-230 result for Sewer Location #1 UW-0001 is qualified as estimated (J).

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks for the field samples are properly identified, well defined and adequately resolved.

No results are qualified due to spectral resolution.

Calculations

The U-232 tracer recovery for Lockport Sewer Location #1 UW-0001 DUP (F1H020470-002 DUP) Batch 1227019

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 377
U-232 Tracer Background Counts: 1.25
U-232 Tracer net counts: 375.75
Count Time: 240 minutes
Detector Efficiency: 28.11%

U-232 Tracer recovered = (375.75)/(240)(0.0.2811) = 5.44 DPM
U-232 Tracer % Recovery = (5.44 DPM/7.155 DPM) * 100 = 77.8%. The laboratory reported 77.8%.

The Th-229 tracer recovery for Lockport Sewer Location #1 US-0001 (F1H020470-001) Batch 1223198

Th-229 Tracer concentration: 63.40 DPM/mL (DPM = disintegrations/minute)
Th-229 Tracer volume: 0.10 mL
Th-229 Tracer added: 6.340 DPM
Th-229 Tracer Gross Counts: 331
Th-229 Tracer Background Counts: 0.500
Th-229 Tracer net counts: 330.50
Count Time: 240 minutes
Detector Efficiency: 26.63%

Th-229 Tracer recovered = (330.50)/(240)(0.2663) = 5.171 DPM
Th-229 Tracer % Recovery = (5.171 DPM/6.34 DPM) * 100 = 81.6%. The laboratory reported 81.8%.

The U-234 concentration for Lockport Sewer Location #1 UW-0001 DUP (F1H020470-002 DUP) Batch 1227019

U-234 gross counts: 1265
U-234 background counts: 0.000
U-234 net counts: 1265
Count time: 240 minutes
Detector Efficiency: 28.11%
Tracer Recovery: 77.85%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (1265)/(2.22)(1.000)(240)(0.2811)(0.7785) = 10.85 pCi/L. The laboratory reported 10.87 pCi/L

The Th-230 concentration for Lockport Sewer Location #1 US-0001 (F1H020470-001) Batch 1223198

Th-230 gross counts: 104
Th-230 background counts: 0.250
Th-230 net counts: 103.75
Count time: 240 minutes
Detector Efficiency: 26.63%
Tracer Recovery: 81.85%
Sample mass: 2.001 grams
1 picocurie = 2.22 counts/minute

Th-230 Concentration: = (103.75)/(2.22)(2.000)(240)(0.2663)(0.8185) = 0.447 pCi/g. The laboratory reported 0.448 pCi/g

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 Thorium and Uranium Isotope results

Guterl Specialty Steel
F1H020470

Table 1 – Isotopic Thorium and Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
Sewer Location # 1 US-0001 Sludge	Sludge	A
Sewer Location # 1 US-0001 Sludge DUP	Sludge	A
Sewer Location # 1 UW-0001 Aqueous	Aqueous	J^1 J^2
Sewer Location # 1 UW-0001 Aqueous DUP	Aqueous	A
Sewer Location # 2 US-0002 Sludge	Sludge	A
Sewer Location # 2 UW-0002 Aqueous	Aqueous	J^3

A - Accept all data without qualification.

J^1 - The Th-230 result is qualified as estimated (J) due to positive Th-230 method blank results.

J^2 - The Th-230 result is qualified as estimated (J). The reported Th-230 result is greater than the MDC and less than the 2 sigma uncertainty.

J^3 - The Th-228, Th-230 and Th-232 results are qualified as non-detected estimated (UJ). The Th-239 tracer recovery is 32%.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H090481
Site Name: Guterl Steel
Samples Collected: 08/04/2011
8 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04DMW240001 Tot	F1H090481-001	A04DMW240001 Diss	F1H090481-005
A04AMW230001 Tot	F1H090481-002	A04AMW230001 Diss	F1H090481-006
A04DMW713D0001 Tot	F1H090481-003	A04DMW713D0001 Diss	F1H090481-007
A04BMW190001 Tot	F1H090481-004	A04BMW190001 Diss	F1H090481-008

Tot- Total Diss- Dissolved (field filtered)

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in

conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

All isotopic uranium results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

The condition upon receipt form states that the COC did not list the bottles for the filtered fractions.

The laboratory used an incorrect sample ID on the report forms. The laboratory has used the sample ID A04DMW230001. The COC does not list this sample. The correct sample ID is A04AMW230001. This validation has used the ID that is listed on the COC, A04AMW230001 Tot and A04AMW230001 Diss.

Sample Preservation and Holding Times

Samples were collected on 08/04/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.
No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1228169 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H170000-169B	0.013	0.022	0.035	1.2171
U-235	F1H170000-169B	-0.0024	0.0047	0.043	-0.9991
U-238	F1H170000-169B	-0.0038	0.0053	0.040	-1.4117

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R).

All tracer recoveries were within the acceptance criteria. No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1228169 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 100% and 99% respectively. U-235 is not a spiked isotope. All LCS recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H090481.

No results are qualified based upon the absence of field replicate results.

Laboratory Duplicates

Guterl steel sample A04AMW220001 Tot (F1H090496-02) associated with preparation batch 1228169 was analyzed as the laboratory duplicate sample. Results are summarized below.

Analyte	A04AMW220001 Tot			A04AMW220001 Tot DUP		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	24.34	2.33	0.034	24.30	2.30	0.062
U-235	1.03	0.27	0.043	1.27	0.293	0.040
U-238	24.83	2.37	0.034	23.20	2.21	0.032

TPU – Total Propagated Uncertainty

All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Calculations

The U-232 tracer recovery for A04DMW240001 Tot (F1H090481-001)

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer net counts: 320
Count Time: 240 minutes
Detector Efficiency: 27.75%

U-232 Tracer recovered = (320)/(240)(0.2775) = 4.804 DPM
U-232 Tracer % Recovery = (4.804 DPM/7.155 DPM) * 100 = 67.14%. The laboratory reported 67.145%.

The U-238 concentration for A04DMW240001 Tot (F1H090481-001)

U-238 net counts: 1254
Count time: 240 minutes

Detector Efficiency: 27.75%
Tracer Recovery: 67.15%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute
U-238 Concentration: = (1254)/(2.22)(1.000)(240)(0.2775)(0.6715) = 12.6 pCi/L. The laboratory reported 12.6 pCi/L

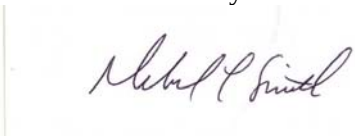
Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H090481

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04DMW240001 Tot	Aqueous	A
A04AMW230001 Tot	Aqueous	A
A04DMW713D0001 Tot	Aqueous	A
A04BMW190001 Tot	Aqueous	A
A04DMW240001 Diss	Aqueous	A
A04AMW230001 Diss	Aqueous	A
A04DMW713D0001 Diss	Aqueous	A
A04BMW190001 Diss	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 12, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H090481
Site Name: Guterl Steel
Samples Collected: 08/04/2011
8 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04DMW240001 Tot	F1H090481-001	A04DMW240001 Diss	F1H090481-005
A04AMW230001 Tot	F1H090481-002	A04AMW230001 Diss	F1H090481-006
A04DMW713D0001 Tot	F1H090481-003	A04DMW713D0001 Diss	F1H090481-007
A04BMW190001 Tot	F1H090481-004	A04BMW190001 Diss	F1H090481-008

Tot- Total Diss- Dissolved (field filtered)

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	No	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
X		ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

The ICP-MS serial dilution % difference is 18.4%. Uranium results for A04DMW240001 Tot, A04AMW230001 Tot, A04DMW713D0001 Tot, A04BMW190001Tot, A04DMW240001 Diss, A04AMW230001 Diss, A04DMW713D0001 Diss and A04BMW190001 Diss are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased low.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total results are at concentrations greater than the dissolved sample results.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

The condition upon receipt form states that the COC did not list the bottles for the filtered fractions.

The laboratory used an incorrect sample ID on the report forms. The laboratory has used the sample ID A04DMW230001. The COC does not list this sample. The correct sample ID is A04AMW230001. This validation has used the ID that is listed on the COC, A04AMW230001 Tot and A04AMW230001 Diss.

Sample Preservation and Holding Times

Samples were collected on 08/04/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time ICP-MS analysis is 180 days. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery is 94.4%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04AMW220001 Tot was the MS/MSD pair associated with preparation batch 1222061. These sample results were reported in laboratory data package F1H090496. The MS/MSD recoveries are 105.2% and 108.2% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04AMW220001 Tot, reported in laboratory data package F1H090496, was the MS/MSD pair associated with preparation batch 1222061. The laboratory duplicate RPD is 2.6%

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H090481.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Serial dilution sample A04AMW220001 Tot is associated with preparation batch 1222061. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
Uranium	73.6	87.2	18.4	J

The uranium results for A04DMW240001 Tot, A04AMW230001 Tot, A04DMW713D0001 Tot, A04BMW190001Tot, A04DMW240001 Diss, A04AMW230001 Diss, A04DMW713D0001 Diss and A04BMW190001 Diss are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased low.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution. The laboratory reported results between the method detection limit (MDL) and reporting limit (RL) as estimated (J).

All field sample results are at concentrations greater than the RL.

All total and dissolve fraction results agree within 20%.

Calculations

Sample A04AMW22001, reported in laboratory data package F1H090496, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 73.6 ug/L
MS uranium concentration: 1130 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1130 ug/L – 73.6 ug/L)/ 1000 ug/L)) * 100 = 105.7%. The laboratory reported 105.2%.

Serial Dilution:
Sample uranium concentration: 73.6 ug/L
Serial dilution concentration of the 5X dilution: 87.2 ug/L
Serial Dilution % Difference = Absolute value ((73.6 ug/L-87.2 ug/L))/ (73.6 ug/L))* 100 = 18.5%. The laboratory reported 18.4%.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

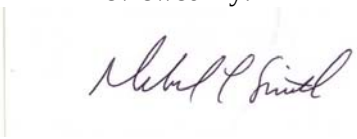
Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

295 Lower Flying Point Road Freeport ME 04032
Phone: (207) 865-1256 ☎ Fax: (207) 865-1256 Electronic Mail: KestrelET@comcast.net

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H090481

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04DMW240001 Tot	Aqueous	J[1]
A04AMW230001 Tot	Aqueous	J[1]
A04DMW713D0001 Tot	Aqueous	J[1]
A04BMW190001 Tot	Aqueous	J[1]
A04DMW240001 Diss	Aqueous	J[1]
A04AMW230001 Diss	Aqueous	J[1]
A04DMW713D0001 Diss	Aqueous	J[1]
A04BMW190001 Diss	Aqueous	J[1]

A - Accept all data.

J[1]- The uranium result is qualified as estimated (J). The ICP-MS serial dilution %D exceeds 10%. The reported result may be biased low.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 04, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H090496
Site Name: Guterl Steel
Samples Collected: 08/05/2011
6 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04AMW603D0001 Tot	F1H090496-001	A04AMW603D0001 Diss	F1H090499-004
A04AMW220001 Tot	F1H090496-002	A04AMW220001 Diss	F1H090496-005
A04AMW220001 DUP	F1H090496-002X	A04AMW220001 DUP	F1H090496-005X
A04BMW180001 Tot	F1H090496-003	A04BMW180001 Diss	F1H090496-006

Tot- Total Diss- Dissolved (field filtered) DUP-Lab Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in

conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

All isotopic uranium results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/05/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1228169 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H170000-169B	0.013	0.022	0.035	1.2171
U-235	F1H170000-169B	-0.0024	0.0047	0.043	-0.9991
U-238	F1H170000-169B	-0.0038	0.0053	0.040	-1.4117

MDA- Minimal Detectable Activity

Aqueous method blank results associated with preparation batch 1220942 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H170000-042B	-0.006	0.007	0.047	0.047
U-235	F1H170000-042B	-0.002	0.005	0.046	0.046
U-238	F1H170000-042B	0.020	0.028	0.043	0.043

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R).

All tracer recoveries were within the acceptance criteria. No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1228169 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 100% and 99% respectively. U-235 is not a spiked isotope. All LCS recoveries are within the QAPP acceptance criteria; 73-131%.

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1229042 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 99.7% and 103% respectively. U-235 is not a spiked isotope. All LCS recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H090496.

No results are qualified based upon the absence of field replicate results.

Laboratory Duplicates

Guterl steel sample A04AMW220001Tot associated with preparation batch 1228169 was analyzed as the laboratory duplicate sample. Results are summarized below.

Analyte	A04AMW220001 Tot			A04AMW220001 Tot DUP		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	24.34	2.33	0.034	24.30	2.30	0.062
U-235	1.03	0.27	0.043	1.27	0.293	0.040
U-238	24.83	2.37	0.034	23.20	2.21	0.032

TPU – Total Propagated Uncertainty

All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Guterl steel sample A04AMW220001 Dissolved associated with preparation batch 1220942 was analyzed as the laboratory duplicate sample. Results are summarized below.

Analyte	A04AMW220001 Dissolved			A04AMW220001 Dissolved DUP		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	21.58	2.06	0.088	23.09	2.18	0.058
U-235	1.05	0.26	0.037	1.22	0.28	0.062
U-238	21.20	2.03	0.030	22.69	2.15	0.069

TPU – Total Propagated Uncertainty

All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

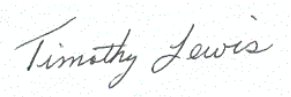
Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

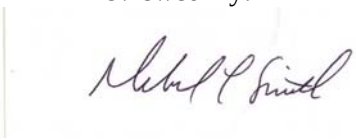
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H090496

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04AMW603D0001 Tot	Aqueous	A
A04AMW220001 Tot	Aqueous	A
A04AMW220001 DUP	Aqueous	A
A04BMW180001 Tot	Aqueous	A
A04AMW603D0001 Diss	Aqueous	A
A04AMW220001 Diss	Aqueous	A
A04AMW220001 DUP	Aqueous	A
A04BMW180001 Diss	Aqueous	A

A - Accept all data.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 04, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H090496
Site Name: Guterl Steel
Samples Collected: 08/05/2011
6 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04AMW603D0001 Tot	F1H090496-001	A04AMW603D0001 Diss	F1H090496-004
A04AMW220001 Tot	F1H090496-002	A04AMW220001 Diss	F1H090496-005
A04BMW180001 Tot	F1H090496-003	A04BMW180001 Diss	F1H090496-006

Tot- Total Diss- Dissolved (field filtered)

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
X		ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

The ICP-MS serial dilution % differences are 18.4% and 35.5%. Uranium results for A04AMW603D0001 Tot, A04AMW220001 Tot, A04BMW180001 Tot, A04AMW603D0001 Diss, A04AMW220001 Diss and A04BMW180001 Diss are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased low.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total results are at concentrations greater than the dissolved sample results.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/05/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery is 94.4%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04AMW220001 Tot was the MS/MSD pair associated with preparation batch 1222061. The MS/MSD recoveries are 105.2% and 108.2% respectively.

Sample A04AMW220001 Diss was the MS/MSD pair associated with preparation batch 1222062. The MS/MSD recoveries are 106.1% and 106.5% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04AMW220001 Tot was the MS/MSD pair associated with preparation batch 1222061. The RPD is 2.6%

Sample A04AMW220001 Diss was the MS/MSD pair associated with preparation batch 1222062. The RPD is 0.31%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H090496.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%. Two LCS samples were reported; one for preparation batch 1222061 and one for preparation batch 1222062.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Two serial dilution samples were analyzed. Serial dilution sample A04AMW220001 Tot is associated with preparation batch 1222061. Serial dilution sample A04AMW220001 Diss is associated with preparation batch 1222062. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
Uranium	73.6	87.2	18.4	J
Uranium	65.1	88.3	35.6	J

Uranium results for A04AMW603D0001 Tot, A04AMW220001 Tot, A04BMW180001 Tot, A04AMW603D0001 Diss, A04AMW220001 Diss and A04BMW180001 Diss are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased low.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution. The laboratory reported results between the method detection limit (MDL) and reporting limit (RL) as estimated (J).

All field sample results are at concentrations greater than the RL.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H090496

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04AMW603D0001 Tot	Aqueous	J[1]
A04AMW220001 Tot	Aqueous	J[1]
A04BMW180001 Tot	Aqueous	J[1]
A04AMW603D0001 Diss	Aqueous	J[1]
A04AMW220001 Diss	Aqueous	J[1]
A04BMW180001 Diss	Aqueous	J[1]

A - Accept all data.

J[1]- The uranium result is qualified as estimated (J). The ICP-MS serial dilution %D exceeds 10%. The reported result may be biased low.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

September 30, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H090504
Site Name: Guterl Steel
Samples Collected: 08/08/2011
10 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A02MW110001 Tot	F1H090504-001	A02MW110001 Diss	F1H090504-006
A02MW090001 Tot	F1H090504-002	A02MW090001 Diss	F1H090504-007
A02MW080001 Tot	F1H090504-003	A02MW080001 Diss	F1H090504-008
SEEP 01 Tot	F1H090504-004	SEEP 01 Diss	F1H090504-009
SEEP 02 Tot	F1H090504-005	SEEP 02 Diss	F1H090504-0010

Tot- Total Diss- Dissolved (field filtered)

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-*

Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004 and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
X		Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The U-232 tracer recovery for sample A02MW080001 Total is 37.4%. The U-234and U-238 results for A02MW080001 Total are qualified as estimated (J) and the U-235 result for A02MW08001 Total is qualified as non-detected estimated (UJ).

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/08/2011. According to the COC, samples were received on ice at 2° C. The temperature requirement is 4° C$\pm$ 2° C. No results are qualified based upon this deviation.

The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H170000-042B	-0.006	0.007	0.047	0.047
U-235	F1H170000-042B	-0.002	0.005	0.046	0.046
U-238	F1H170000-042B	0.020	0.028	0.043	0.043

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). The U-232 tracer recovery for sample A02MW080001 Total is 37.4%. The U-234 and U-238 results for A02MW080001 Total are qualified as estimated (J). The U-235 result for A02MW080001 Total is qualified as non-detected estimated (UJ).

All other tracer recoveries were within the laboratory derived acceptance criteria. No other results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries were 99.7% and 103% respectively. U-235 is not a spiked isotope.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H090504.

No results are qualified based upon the absence of field replicate results.

Laboratory Duplicates

Guterl steel sample A04AMW220001 Dissolved (F1H090496-005) reported in laboratory data package F1H090496 was analyzed as the laboratory duplicate sample. Results are summarized below.

Analyte	A04AMW220001 Dissolved			A04AMW220001 Dissolved DUP		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	21.58	2.06	0.088	23.09	2.18	0.058
U-235	1.05	0.26	0.037	1.22	0.28	0.062
U-238	21.20	2.03	0.030	22.69	2.15	0.069

TPU – Total Propagated Uncertainty

All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ) based upon tracer recoveries. No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

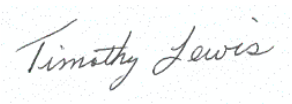
Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

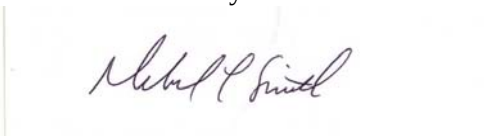
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

295 Lower Flying Point Road 🖃 Freeport ME 04032
Phone: (207) 865-1256 ☎ Fax: (207) 865-1256🖳 Electronic Mail: KestrelET@comcast.net

Guterl Specialty Steel
F1H090504

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A02MW110001 Tot	Aqueous	A
A02MW090001 Tot	Aqueous	A
A02MW080001 Tot	Aqueous	J^1 J^2
SEEP 01 Tot	Aqueous	A
SEEP 02 Tot	Aqueous	A
A02MW110001 Diss	Aqueous	A
A02MW090001 Diss	Aqueous	A
A02MW080001 Diss	Aqueous	A
SEEP 01 Diss	Aqueous	A
SEEP 02 Diss	Aqueous	A

A - Accept all data.

J^1- The U-234 and U-238 results are qualified as estimated (J). The U-232 tracer recovery is less than 40%.

J^2- The U-235 result is qualified as non-detected estimated (UJ). The U-232 tracer recovery is less than 40%.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

September 30, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H090504
Site Name: Guterl Steel
Samples Collected: 08/08/2011
10 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A02MW110001 Tot	F1H090504-001	A02MW110001 Diss	F1H090504-006
A02MW090001 Tot	F1H090504-002	A02MW090001 Diss	F1H090504-007
A02MW080001 Tot	F1H090504-003	A02MW080001 Diss	F1H090504-008
SEEP 01 Tot	F1H090504-004	SEEP 01 Diss	F1H090504-009
SEEP 02 Tot	F1H090504-005	SEEP 02 Diss	F1H090504-010

Tot- Total Diss- Dissolved (field filtered)

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 6020A (acid digestion) Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
X		ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

The ICP-MS serial dilution % difference is 35.5%. Uranium results for A02MW110001 Total, A02MW090001 Total, A02MW080001 Total, SEEP 01 Total, SEEP 02 Total, A02MW110001 Dissolved, A02MW090001 Dissolved, A02MW080001 Dissolved, SEEP 01 Dissolved and SEEP 02 Dissolved are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased low.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total results are detected at concentrations greater than the dissolved sample results.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/08/2011. According to the COC, samples were received on ice at 2° C. The temperature requirement is 4° C $\pm$ 2° C. No results are qualified based upon sample receipt temperatures.

The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery is 94.4%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	LOQ	Blank Conc
None					

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

The MS/MSD sample that was analyzed for total and dissolved uranium was reported in laboratory data package F1H090496. The Shaw sample ID is A04AMW220001 Dissolved. The MS/MSD recoveries were 106.1% and 106.5% respectively and the duplicate relative percent difference is 0.3%. The QAPP acceptance criteria are recoveries between 75-125% and RPDs $\leq$ 30%.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance %RPD for laboratory duplicate samples is $\leq$ 30%.

The MS/MSD sample that was analyzed for total and dissolved uranium was reported in laboratory data package F1H090496. The Shaw sample ID is A04AMW220001 Dissolved. The MS/MSD duplicate relative percent difference is 0.3%. The QAPP acceptance criterion are RPDs $\leq$ 30%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H090504.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP and ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04AMW220001 Dissolved reported in laboratory data package F1H090496 was analyzed as the ICP-MS serial dilution sample ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
Uranium	65.1	88.3	35.6	J

Uranium results for A02MW110001 Total, A02MW090001 Total, A02MW080001 Total, SEEP 01 Total, SEEP 02 Total, A02MW110001 Dissolved, A02MW090001 Dissolved, A02MW080001 Dissolved, SEEP 01 Dissolved and SEEP 02 Dissolved are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased low.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution. The laboratory reported results between the method detection limit (MDL) and reporting limit (RL) as estimated (J).

All field sample results are at concentrations greater than the RL.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H090504

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A02MW110001 Tot	Aqueous	J[1]
A02MW090001 Tot	Aqueous	J[1]
A02MW080001 Tot	Aqueous	J[1]
SEEP 01 Tot	Aqueous	J[1]
SEEP 02 Tot	Aqueous	J[1]
A02MW110001 Diss	Aqueous	J[1]
A02MW090001 Diss	Aqueous	J[1]
A02MW080001 Diss	Aqueous	J[1]
SEEP 01 Diss	Aqueous	J[1]
SEEP 02 Diss	Aqueous	J[1]

A - Accept all data.

J[1]- The uranium result is qualified as estimated (J). The ICP-MS serial dilution %D exceeds 10%. The reported result may be biased low.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 08, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H100419
Site Name: Guterl Steel
Samples Collected: 08/09/2011
6 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
MW705D0001 Tot	F1H100419-001	MW705D0001 Diss	F1H100419-004
MW705DD0001 Tot	F1H100419-002	MW705DD0001 Diss	F1H100419-005
A04DMW711D0001 Tot	F1H100419-003	A04DMW711D0001 Diss	F1H100419-006

Tot- Total Diss- Dissolved (field filtered) DUP-Lab Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

All isotopic uranium results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/09/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1220942 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H170000-042B	-0.006	0.007	0.047	0.047
U-235	F1H170000-042B	-0.002	0.005	0.046	0.046
U-238	F1H170000-042B	0.020	0.028	0.043	0.043

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R).

All tracer recoveries were within the acceptance criteria. No other results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1229042 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 99.7% and 103% respectively. U-235 is not a spiked isotope. All LCS recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H100419.

No results are qualified based upon the absence of field replicate results.

Laboratory Duplicates

Guterl steel sample A04AMW220001 Dissolved associated with preparation batch 1220942 was analyzed as the laboratory duplicate sample. Results are summarized below.

Analyte	A04AMW220001 Dissolved			A04AMW220001 Dissolved DUP		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	21.58	2.06	0.088	23.09	2.18	0.058
U-235	1.05	0.26	0.037	1.22	0.28	0.062
U-238	21.20	2.03	0.030	22.69	2.15	0.069

TPU – Total Propagated Uncertainty

All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H100419

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
MW705D0001 Tot	Aqueous	A
MW705DD0001 Tot	Aqueous	A
A04DMW711D0001 Tot	Aqueous	A
MW705D0001 Diss	Aqueous	A
MW705DD0001 Diss	Aqueous	A
A04DMW711D0001 Diss	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 07, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H100419
Site Name: Guterl Steel
Samples Collected: 08/09/2011
6 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
MW705D0001 Tot	F1H100419-001	MW705D0001 Diss	F1H100419-004
MW705DD0001 Tot	F1H100419-002	MW705DD0001 Diss	F1H100419-005
A04DMW711D0001 Tot	F1H100419-003	A04DMW711D0001 Diss	F1H100419-006

Tot- Total Diss- Dissolved (field filtered) FDUP- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
X		Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The laboratory has reported positive results between the method detection limit (MDL) and RL. The uranium results for MW705D0001 and MW705DD0001Diss are qualified as estimated (J). The reported results are between the MDL and RL.

All other field sample results are detected at concentrations greater than the RL. All total results are at concentrations greater than the dissolved sample results.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/09/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recoveries were 97.4% and 93.7%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample MW705D0001 Tot was analyzed as the MS/MSD pair associated with preparation batch 1223087. The MS/MSD recoveries are 112.4% and 113% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample MW705D0001 Tot was analyzed as the MS/MSD pair associated with preparation batch 1223087. The MS/MSD RPD is 0.5%

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H100419.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample MW705D0001Tot was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The uranium results for MW705D0001Tot and MW705DD0001Diss are qualified as estimated (J). The reported results are between the MDL and RL.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

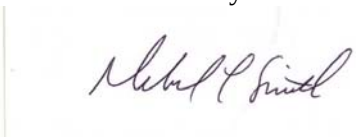
Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H100419

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
MW705D0001 Tot	Aqueous	J[1]
MW705DD0001 Tot	Aqueous	A
A04DMW711D0001 Tot	Aqueous	A
MW705D0001 Diss	Aqueous	A
MW705DD0001 Diss	Aqueous	J[1]
A04DMW711D0001 Diss	Aqueous	A

A - Accept all data.

J[1]- The uranium result is qualified as estimated (J). The reported result is between the MDL and RL.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H110460
Site Name: Guterl Steel
Samples Collected: 08/10/2011
14 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04MW604D0001 Diss	F1H110460-001	A04MW604D0001 Tot	F1H110460-008
A04DMW709DD0001 Diss	F1H110460-002	A04DMW709D0001 Tot	F1H110460-009
A04BMW605D0001 Diss FD#1	F1H110460-003	A04BMW605D0001 Tot FD#3	F1H110460-010
A04BMW260001 Diss	F1H110460-004	A04BMW260001 Tot	F1H110460-011
A04BMW9000 Diss FD#1	F1H110460-005	A04BMW9000 Tot FD#3	F1H110460-012
A04BMW9001 Diss FD#2	F1H110460-006	A04BMW9001 Tot FD#4	F1H110460-013
A04DMW704DD0001 Diss FD#2	F1H110460-007	A04DMW704DD0001 Tot FD#4	F1H110460-014

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL)

Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
X		Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	X	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The U-234, U-235 and U-238 results for A04BMW605D0001 Diss, A04BMW9000 Diss and A04BMW9000 Tot are qualified as estimated (J). The U-232 tracer recoveries for these samples are less than 40%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/10/2011. The condition upon receipt form indicates that aqueous metal samples were not properly preserved. The laboratory noted that the total and dissolved fractions for samples A04DMW709DD0001 and A04MW604D0001 were received at pH 7. The laboratory acidified the samples to a pH < 2. Samples sat for more than 24 hours at pH 2 before preparation.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1228169 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H190000-145B	0.005	0.015	0.032	0.727
U-235	F1H190000-145B	0.000	0.009	0.024	0.000
U-238	F1H190000-145B	0.005	0.015	0.032	0.727

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries

less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
A04BMW605D0001 Diss	37%
A04BMW9000 Diss	35%
A04BMW9000 Tot	38%

The U-234, U-235 and U-238 results for A04BMW605D0001 Diss, A04BMW9000 Diss and A04BMW9000 Tot are qualified as estimated (J).

Laboratory Control Samples

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1231145 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 109% and 103% respectively. The U-234 and U-238 LCSD recoveries are 95.2% and 101% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Four field duplicate pairs are reported in laboratory data package F1H110460; A04BMW605D0001 Diss/A04BMW9000 Diss, A04BMW9001 Diss/A04DMW704DD0001 Diss, A04BMW605D0001 Tot/A04BMW9000 Tot and A04BMW704DD0001 Tot/A04BMW9001 Tot. The field duplicate RPDs are less than 50%.

No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The laboratory analyzed a LCS/LCSD pair rather than a laboratory duplicate sample. Results are summarized below.

Analyte	F1H190000-145C LCS			F1H190000-145L LCS		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	3.55	0.47	0.02	3.11	0.40	0.02
U-235	0.12	0.076	0.052	0.20	0.088	0.025
U-238	3.48	0.46	0.06	3.41	0.43	0.02

TPU – Total Propagated Uncertainty

U-235 is not present in the LCS/LCSD spike solution. All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Calculations

The U-232 tracer recovery for A04DMW704DD0001 Diss (F1H110460-007)

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer net counts: 370.25
Count Time: 240 minutes
Detector Efficiency: 29.30%

U-232 Tracer recovered = (370.25)/(240)(0.2930) = 5.265 DPM
U-232 Tracer % Recovery = (5.265 DPM/7.155 DPM) * 100 = 73.58%. The laboratory reported 73.61%.

The U-234 concentration for A04DMW704DD0001 Diss (F1H110460-007)

U-234 gross counts: 1237
U-234 background counts: 1.500
U-234 net counts: 1235.5
Count time: 240 minutes
Detector Efficiency: 29.30%
Tracer Recovery: 73.61%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (1235.5)/(2.22)(1.000)(240)(0.2930)(0.7361) = 10.75 pCi/L. The laboratory reported 10.77 pCi/L

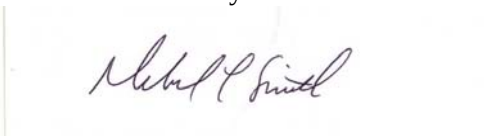
Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

295 Lower Flying Point Road Freeport ME 04032
Phone: (207) 865-1256 ☎ Fax: (207) 865-1256 Electronic Mail: KestrelET@comcast.net

Guterl Specialty Steel
F1H110460

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04MW604D0001 Diss	Aqueous	A
A04DMW709DD0001 Diss	Aqueous	A
A04BMW605D0001 Diss FD#1	Aqueous	J[1]
A04BMW260001 Diss	Aqueous	A
A04BMW9000 Diss FD#1	Aqueous	J[1]
A04BMW9001 Diss FD#2	Aqueous	A
A04DMW704DD0001 Diss FD#2	Aqueous	A
A04MW604D0001 Tot	Aqueous	A
A04DMW709D0001 Tot	Aqueous	A
A04BMW605D0001 Tot FD#3	Aqueous	A
A04BMW260001 Tot	Aqueous	A
A04BMW9000 Tot FD#3	Aqueous	J[1]
A04BMW9001 Tot FD#4	Aqueous	A
A04DMW704DD0001 Tot FD#4	Aqueous	A

A - Accept all data without qualification.

J[1]- The U-234, U-235 and U-238 results are qualified as estimated (J). The U-232 tracer recovery is less than 40%.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H110460
Site Name: Guterl Steel
Samples Collected: 08/10/2011
14 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04MW604D0001 Diss	F1H110460-001	A04MW604D0001 Tot	F1H110460-008
A04DMW709DD0001 Diss	F1H110460-002	A04DMW709D0001 Tot	F1H110460-009
A04BMW605D0001 Diss FD#1	F1H110460-003	A04BMW605D0001 Tot FD#3	F1H110460-010
A04BMW260001 Diss	F1H110460-004	A04BMW260001 Tot	F1H110460-011
A04BMW9000 Diss FD#1	F1H110460-005	A04BMW9000 Tot FD#3	F1H110460-012
A04BMW9001 Diss FD#2	F1H110460-006	A04BMW9001 Tot FD#4	F1H110460-013
A04DMW704DD0001 Diss FD#2	F1H110460-007	A04DMW704DD0001 Tot FD#4	F1H110460-014

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved

uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	X	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

All results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/10/2011. The condition upon receipt form indicates that aqueous metal samples were not properly preserved. The laboratory noted that the total and dissolved fractions for samples A04DMW709DD0001 and A04MW604D0001 were received at pH 7. The laboratory acidified the samples to a pH < 2. Samples sat for more than 24 hours at pH 2 before preparation.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was 96.8%

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04MW604D0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1224017. The MS/MSD recoveries are 102.5% and 102.3% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04MW604D0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1224017. The MS/MSD RPD is 0.2%

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Four field duplicate pairs are reported in laboratory data package F1H110460; A04BMW605D0001 Diss/A04BMW9000 Diss, A04BMW9001 Diss/A04DMW704DD0001 Diss, A04BMW605D0001 Tot/A04BMW9000 Tot and A04BMW704DD0001Tot/A04BMW9001Tot. The field duplicate RPDs are 0.1%, 2.2%, 1.9% and 5.0% respectively.

No results are qualified based upon the field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04MW604D0001 Diss was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

Calculations

Sample A04MW604D0001 Diss, reported in laboratory data package F1H110460, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 101 ug/L
MS uranium concentration: 1130 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1130 ug/L – 101 ug/L)/ 1000 ug/L)) * 100 = 102.9%. The laboratory reported 102.5%.

Serial Dilution:
Sample uranium concentration: 101 ug/L
Serial dilution concentration of the 5X dilution: 101 ug/L
Serial Dilution % Difference = Absolute value ((101 ug/L-101 ug/L))/ (101 ug/L))* 100 = 0.1%. The laboratory reported 0.12%.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

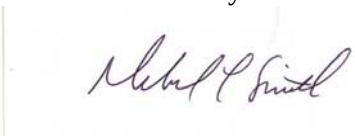
Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H110460

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04MW604D0001 Diss	Aqueous	A
A04DMW709DD0001 Diss	Aqueous	A
A04BMW605D0001 Diss FD#1	Aqueous	A
A04BMW260001 Diss	Aqueous	A
A04BMW9000 Diss FD#1	Aqueous	A
A04BMW9001 Diss FD#2	Aqueous	A
A04DMW704DD0001 Diss FD#2	Aqueous	A
A04MW604D0001 Tot	Aqueous	A
A04DMW709D0001 Tot	Aqueous	A
A04BMW605D0001 Tot FD#3	Aqueous	A
A04BMW260001 Tot	Aqueous	A
A04BMW9000 Tot FD#3	Aqueous	A
A04BMW9001 Tot FD#4	Aqueous	A
A04DMW704DD0001 Tot FD#4	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H120447
Site Name: Guterl Steel
Samples Collected: 08/11/2011
10 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04MW602D0001 Diss	F1H120447-001	A04MW602D0001 Tot	F1H120447-006
A04MW702DD0001 Diss	F1H120447-002	A04MW702DD0001 Tot	F1H120447-007
A03AMW13D0001 Diss	F1H120447-003	A03AMW13D0001 Tot	F1H120447-008
A04DMW708DD0001 Diss FD	F1H120447-004	A04DMW708DD0001 Tot FD	F1H120447-009
A04DMW9002 Diss FD	F1H120447-005	A04DMW9002 Tot FD	F1H120447-010

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	X	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

All isotopic uranium results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/11/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1231165 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H190000-165B	0.013	0.021	0.034	1.217
U-235	F1H190000-165B	0.009	0.018	0.025	0.999
U-238	F1H190000-165B	-0.004	0.005	0.039	-1.412

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1231165 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 91% and 98% respectively. The U-234 and U-238 LCSD recoveries are 100% and 106% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Two field duplicate pairs are reported in laboratory data package F1H120447; A04DMW708DD0001 Tot/A04DMW9002 Tot and A04DMW708DD0001 Diss/A04DMW9002 Diss. The field duplicate RPDs are less than 50%.

No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The U-232 tracer recoveries for these samples are less than 40%.

Analyte	F1H190000-165C			F1H190000-165L		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	2.97	0.40	0.048	3.27	0.44	0.046
U-235	0.14	0.077	0.027	0.11	0.069	0.029
U-238	3.32	0.43	0.037	3.60	0.46	0.023

TPU – Total Propagated Uncertainty

U-235 is not present in the LCS/LCSD spike solution. All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Calculations

The U-232 tracer recovery for A04MW602D0001 Diss (F1H120447-001)

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 245
U-232 Tracer Background Counts: 0.00
U-232 Tracer net counts: 245
Count Time: 240 minutes
Detector Efficiency: 27.40%
U-232 Tracer recovered = (245)/(240)(0.2740) = 3.726 DPM
U-232 Tracer % Recovery = (3.726 DPM/7.155 DPM) * 100 = 52.07%. The laboratory reported 52.09%.

The U-238 concentration for A04MW602D0001 Diss (F1H120447-001)
U-238 gross counts: 2605
U-238 background counts: 0.25

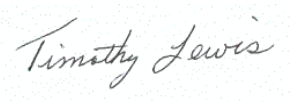
U-238 net counts: 2604.75
Count time: 240 minutes
Detector Efficiency: 27.40%
Tracer Recovery: 52.09%
Sample volume: 0.930 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (2604.75)/(2.22)(0.930)(240)(0.2740)(0.5209) = 36.83 pCi/L. The laboratory reported 36.82 pCi/L

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

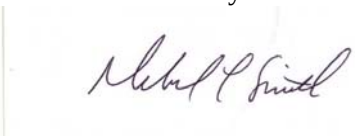
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H120447

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04MW602D0001 Diss	Aqueous	A
A04MW702DD0001 Diss	Aqueous	A
A03AMW13D0001 Diss	Aqueous	A
A04DMW708DD0001 Diss FD	Aqueous	A
A04DMW9002 Diss FD	Aqueous	A
A04MW602D0001 Tot	Aqueous	A
A04MW702DD0001 Tot	Aqueous	A
A03AMW13D0001 Tot	Aqueous	A
A04DMW708DD0001 Tot FD	Aqueous	A
A04DMW9002 Tot FD	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H120447
Site Name: Guterl Steel
Samples Collected: 08/11/2011
10 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04MW602D0001 Diss	F1H120447-001	A04MW602D0001 Tot	F1H120447-006
A04MW702DD0001 Diss	F1H120447-002	A04MW702DD0001 Tot	F1H120447-007
A03AMW13D0001 Diss	F1H120447-003	A03AMW13D0001 Tot	F1H120447-008
A04DMW708DD0001 Diss FD	F1H120447-004	A04DMW708DD0001 Tot FD	F1H120447-009
A04DMW9002 Diss FD	F1H120447-005	A04DMW9002 Tot FD	F1H120447-010

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data*

Review (OSWER 9240.1-45 and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	No	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	X	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

All results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/11/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was 96.8%

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the MS/MSD pair associated with preparation batch 1227138. The MS/MSD recoveries are 106.9% and 108.6% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the MS/MSD pair associated with preparation batch 1227138. The MS/MSD RPD is 1.42%

No results are qualified based upon laboratory duplicate precision.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

Two field duplicate pairs are reported in laboratory data package F1H120447; A04DMW708DD0001 Tot/A04DMW9002 Tot and A04DMW708DD0001 Diss/A04DMW9002 Diss. The field duplicate RPDs are 0.4% and 0.9% respectively.

No results are qualified based upon the field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

Calculations

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 112 ug/L
MS uranium concentration: 1180 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1180 ug/L – 112 ug/L)/ 1000 ug/L)) * 100 = 106.8%. The laboratory reported 106.9%.

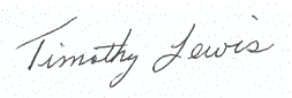
Serial Dilution:
Sample uranium concentration: 112 ug/L
Serial dilution concentration of the 5X dilution: 21.6 ug/L * 5 = 108 ug/L
Serial Dilution % Difference = Absolute value ((112 ug/L-108 ug/L))/ (112 ug/L))* 100 = 3.5%. The laboratory reported 3.4%.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

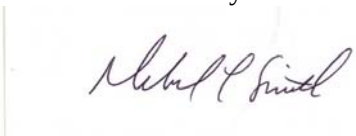
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H120447

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04MW602D0001 Diss	Aqueous	A
A04MW702DD0001 Diss	Aqueous	A
A03AMW13D0001 Diss	Aqueous	A
A04DMW708DD0001 Diss FD	Aqueous	A
A04DMW9002 Diss FD	Aqueous	A
A04MW602D0001 Tot	Aqueous	A
A04MW702DD0001 Tot	Aqueous	A
A03AMW13D0001 Tot	Aqueous	A
A04DMW708DD0001 Tot FD	Aqueous	A
A04DMW9002 Tot FD	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H130407
Site Name: Guterl Steel
Samples Collected: 08/12/2011
10 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04BMW250001 Tot FD	F1H130407-001	A04BMW250001 Diss FD	F1H130407-006
A02MW060001 Tot	F1H130407-002	A02MW060001 Diss	F1H130407-007
A02MW100001 Tot	F1H130407-003	A02MW100001 Diss	F1H130407-008
A02MW070001 Tot	F1H130407-004	A02MW070001 Diss	F1H130407-009
A04BMW9003 Tot FD	F1H130407-005	A04BMW9003 Diss FD	F1H130407-010

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in

conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
X		Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	X	Matrix Spike Results
	X	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The U-234, U-235 and U-238 results for A04BMW250001 Tot and A04BMW250001 Diss are qualified as estimated (J). The U-232 tracer recoveries for these samples are less than 40%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/12/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1231165 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H190000-165B	0.013	0.021	0.034	1.217
U-235	F1H190000-165B	0.009	0.018	0.025	0.999
U-238	F1H190000-165B	-0.004	0.005	0.039	-1.412

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
A04BMW250001 Tot	38.8%
A04BMW250001 Diss	36.6%

The U-234, U-235 and U-238 results for A04BMW250001 Tot and A04BMW250001 Diss are qualified as estimated (J).

Laboratory Control Samples

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1231165 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 91% and 98% respectively. The U-234 and U-238 LCSD recoveries are 100% and 106% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Two field duplicate pairs are reported in laboratory data package F1H130407; A04BMW250001 Tot/A04BMW9003 Tot and A04BMW250001 Diss/A04BMW9003 Diss. The field duplicate RPDs are less than 50%.

No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The U-232 tracer recoveries for these samples are less than 40%.

Analyte	F1H190000-165C			F1H190000-165L		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	2.97	0.40	0.048	3.27	0.44	0.046
U-235	0.14	0.077	0.027	0.11	0.069	0.029
U-238	3.32	0.43	0.037	3.60	0.46	0.023

TPU – Total Propagated Uncertainty

U-235 is not present in the LCS/LCSD spike solution. All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Calculations

The U-232 tracer recovery for A02MW060001 Diss (F1H130407-007)

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 329
U-232 Tracer Background Counts: 0.25
U-232 Tracer net counts: 328.75
Count Time: 240 minutes
Detector Efficiency: 27.08%
U-232 Tracer recovered = (328.75)/(240)(0.2708) = 5.058 DPM
U-232 Tracer % Recovery = (5.058 DPM/7.155 DPM) * 100 = 70.70%. The laboratory reported 70.70%.

The U-238 concentration for A02MW060001 Diss (F1H130407-007)
U-238 gross counts: 106
U-238 background counts: 0.25

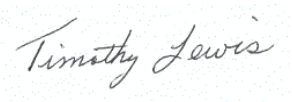
U-238 net counts: 105.75
Count time: 240 minutes
Detector Efficiency: 27.08%
Tracer Recovery: 70.71%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (105.75)/(2.22)(1.000)(240)(0.2708)(0.7071) = 1.036 pCi/L. The laboratory reported 1.036 pCi/L

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

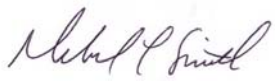
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H130407

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04BMW250001 Tot FD	Aqueous	J[1]
A02MW060001 Tot	Aqueous	A
A02MW100001 Tot	Aqueous	A
A02MW070001 Tot	Aqueous	A
A04BMW9003 Tot FD	Aqueous	A
A04BMW250001 Diss FD	Aqueous	J[1]
A02MW060001 Diss	Aqueous	A
A02MW100001 Diss	Aqueous	A
A02MW070001 Diss	Aqueous	A
A04BMW9003 Diss FD	Aqueous	A

A - Accept all data without qualification.

J[1]- The U-234, U-235 and U-238 results are qualified as estimated (J). The U-232 tracer recovery is less than 40%.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H130407
Site Name: Guterl Steel
Samples Collected: 08/12/2011
10 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04BMW250001 Tot FD	F1H130407-001	A04BMW250001 Diss FD	F1H130407-006
A02MW060001 Tot	F1H130407-002	A02MW060001 Diss	F1H130407-007
A02MW100001 Tot	F1H130407-003	A02MW100001 Diss	F1H130407-008
A02MW070001 Tot	F1H130407-004	A02MW070001 Diss	F1H130407-009
A04BMW9003 Tot FD	F1H130407-005	A04BMW9003 Diss FD	F1H130407-010

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data*

Review (OSWER 9240.1-45 and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	No	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	X	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

All results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/12/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was 96.8%

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the MS/MSD pair associated with preparation batch 1227138 for data package F1H130407. The MS/MSD recoveries are 106.9% and 108.6% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the MS/MSD pair associated with preparation batch 1227138 for data package F1H130407. The MS/MSD RPD is 1.42%

No results are qualified based upon laboratory duplicate precision.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

Two field duplicate pairs are reported in laboratory data package F1H130407; A04BMW250001 Tot/A04BMW9003 Tot and A04BMW250001 Diss/A04BMW9003 Diss. The field duplicate RPDs are 0.6% and 1.7% respectively.

No results are qualified based upon the field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the ICP-MS serial dilution sample for data package F1H130407. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

Calculations

Sample A04MW602D0001 Diss, reported in laboratory data package F1H120447, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 112 ug/L
MS uranium concentration: 1180 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1180 ug/L – 112 ug/L)/ 1000 ug/L)) * 100 = 106.8%. The laboratory reported 106.9%.

Serial Dilution:
Sample uranium concentration: 112 ug/L
Serial dilution concentration of the 5X dilution: 21.6 ug/L * 5 = 108 ug/L
Serial Dilution % Difference = Absolute value ((112 ug/L-108 ug/L))/ (112 ug/L))*100 = 3.5%. The laboratory reported 3.4%.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H130407

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04BMW250001 Tot FD	Aqueous	A
A02MW060001 Tot	Aqueous	A
A02MW100001 Tot	Aqueous	A
A02MW070001 Tot	Aqueous	A
A04BMW9003 Tot FD	Aqueous	A
A04BMW250001 Diss FD	Aqueous	A
A02MW060001 Diss	Aqueous	A
A02MW100001 Diss	Aqueous	A
A02MW070001 Diss	Aqueous	A
A04BMW9003 Diss FD	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H160430
Site Name: Guterl Steel
Samples Collected: 08/15/2011
4 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04BMW706D0001 Diss	F1H160430-001	A04BMW706D0001 Tot	F1H160430-003
A04DMW710D0001 Diss	F1H160430-002	A04DMW710D0001 Tot	F1H160430-004

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

Using professional judgment the U-234 results for A04DMW710D0001 Diss and A04DMW710D0001 Tot are qualified as estimated (J). These results are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L
U-234	A04DMW710D0001 Diss	24.0	2.33	0.065
U-234	A04DMW710D0001 Tot	19.1	1.87	0.033

MDA- Minimal Detectable Activity

The result for the dissolved fraction of sample A04DMW710D0001 is significantly greater than the total fraction.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample cooler. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/15/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1234168 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H220000-168B	0.019	0.027	0.040	1.4117
U-235	F1H220000-168B	-0.002	0.005	0.043	-0.9991
U-238	F1H220000-168B	-0.002	0.004	0.035	-0.9991

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1234168 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 95% and 100% respectively. The U-234 and U-238 LCSD recoveries are 95.3% and 95.3% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H160430. No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The laboratory analyzed a LCS/LCSD pair rather than a laboratory duplicate sample. Results are summarized below.

Analyte	F1H220000-168C			F1H220000-168L		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	3.09	0.40	0.046	3.11	0.41	0.054
U-235	0.13	0.071	0.026	0.16	0.083	0.052
U-238	3.39	0.43	0.041	3.23	0.42	0.042

TPU – Total Propagated Uncertainty

U-235 is not present in the LCS/LCSD spike solution. All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Calculations

The U-232 tracer recovery for A04BMW706D0001 Tot (F1H160430-003)

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 280.0
U-232 Tracer Background Counts: 1.25
U-232 Tracer net counts: 278.75
Count Time: 240 minutes
Detector Efficiency: 28.11%

U-232 Tracer recovered = (278.75)/(240)(0.2811) = 4.13 DPM

U-232 Tracer % Recovery = (4.13 DPM/7.155 DPM) * 100 = 57.75%. The laboratory reported 57.76%.

The U-238 concentration for A04BMW706D0001 Tot (F1H160430-003)

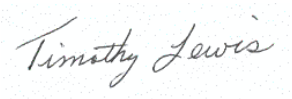
U-238 gross counts: 42
U-238 background counts: 0.500
U-238 net counts: 41.5
Count time: 240 minutes
Detector Efficiency: 28.11%
Tracer Recovery: 57.76%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (41.5)/(2.22)(1.000)(240)(0.2811)(0.5776) = 0.48 pCi/L. The laboratory reported 0.48 pCi/L

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

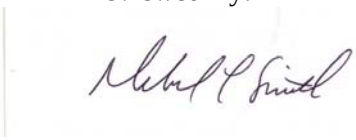
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H160430

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04BMW706D0001 Diss	Aqueous	A
A04DMW710D0001 Diss	Aqueous	J[1]
A04BMW706D0001 Tot	Aqueous	A
A04DMW710D0001 Tot	Aqueous	J[1]

A - Accept all data without qualification.

J[1]- The U-234 results are qualified as estimated (J). The U-234 concentration for the dissolved fraction is significantly greater than the total U-234 concentration for that fraction.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H160430
Site Name: Guterl Steel
Samples Collected: 08/15/2011
4 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04BMW706D0001 Diss	F1H160430-001	A04BMW706D0001 Tot	F1H160430-003
A04DMW710D0001 Diss	F1H160430-002	A04DMW710D0001 Tot	F1H160430-004

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

All results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/15/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was is 99.7%

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04BMW706D0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1229103. The MS/MSD recoveries are 111.5% and 111.7% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04BMW706D0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1229103. The MS/MSD RPD is 0.1%

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H160430.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04BMW706D0001 Diss was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below. The uranium result for A04BMW706D0001 Diss is 1.7 ug/L. The uranium sample concentration is less than 2X the reporting limit (RL). The uranium concentration is sample A04BMW706D0001 Diss is too low to evaluate the serial dilution results.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%.

Calculations

Sample A04BMW706D0001 Diss, reported in laboratory data package F1H160430, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 1.7 ug/L
MS uranium concentration: 1120 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1120 ug/L – 1.7 ug/L)/ 1000 ug/L)) * 100 = 111.8%. The laboratory reported 111.5%.

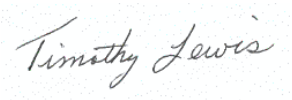
Serial Dilution:
Sample uranium concentration: 1.7 ug/L
Serial dilution concentration of the 5X dilution: 1.8 ug/L
The serial dilution% difference is not calculated because the sample concentration is not greater than 50X the IDL.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

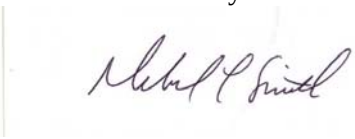
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H160430

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04BMW706D0001 Diss	Aqueous	A
A04DMW710D0001 Diss	Aqueous	A
A04BMW706D0001 Tot	Aqueous	A
A04DMW710D0001 Tot	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H170425
Site Name: Guterl Steel
Samples Collected: 08/15/2011 and 08/16/2011
12 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A03MW606D0001 Diss	F1H170425-001	A03MW606D0001 Tot	F1H170425-007
A03MW14D0001 Diss	F1H170425-002	A03MW14D0001 Tot	F1H170425-008
A03MW14D0001 Diss LDUP	F1H170425-002X	A03MW606DR0001 Tot	F1H170425-009
A03MW606DR0001 Diss	F1H170425-003	A03MW15D0001 Tot	F1H170425-010
A03MW15D0001 Diss	F1H170425-004	A03MW17D0001 Tot	F1H170425-011
A03MW17D0001 Diss	F1H170425-005	A04CMW711DD0001 Tot	F1H170425-012
A04CMW711DD0001 Diss	F1H170425-006		

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate LDUP- Laboratory Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by*

EIChroM ® Separation Resins (STL-RC-240). The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
X		Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The laboratory narrative noted that samples A03MW14D0001 Diss, A04CMW711DD0001 Diss, and A03MW17D0001 Tot had U-232 tracer recoveries below 30%. The laboratory re-extracted and re-analyzed these samples. The U-232 tracer recoveries met the laboratory acceptance criteria for the re-analyses. Due to limited sample volume 250 mLs of sample were extracted for A03MW14D0001 Diss, A04CMW711DD0001 Diss, and A03MW17D0001 Tot. The minimum detectable concentrations (MDCs) were elevated because of the smaller sample volumes.

The U-234, U-235 and U-238 results for A03MW606D0001 Diss, A03MW606DR0001 Diss and A03MW606D0001 Tot are qualified as estimated (J). The U-234 and U-238 results for A04CMW711DD0001 Tot are qualified as estimated (J) and the U-235 result for A04CMW711DD0001 Tot is qualified as non-detected estimated (UJ). The U-232 tracer recoveries are below 40%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/15/2011 and 08/16/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1234168 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H220000-168B	0.019	0.027	0.040	1.4117
U-235	F1H220000-168B	-0.002	0.005	0.043	-0.9991
U-238	F1H220000-168B	-0.002	0.004	0.035	-0.9991

MDA- Minimal Detectable Activity

Aqueous method blank results associated with preparation batch 1238036 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H260000-036B	-0.002	0.017	0.051	-0.218
U-235	F1H260000-036B	0.007	0.019	0.045	0.727
U-238	F1H260000-036B	-0.004	0.005	0.040	-1.412

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
A03MW606D0001 Diss	38.5%
A03MW606DR0001 Diss	36.6%
A03MW606D0001 Tot	36.6%
A04CMW711DD0001 Tot	30.8%

The U-234, U-235 and U-238 results for A03MW606D0001 Diss, A03MW606DR0001 Diss and A03MW606D0001 Tot are qualified as estimated (J). The U-234 and U-238 results for A04CMW711DD0001 Tot are qualified as estimated (J) and the U-235 result for A04CMW711DD0001 Tot is qualified as non-detected estimated (UJ).

Laboratory Control Samples

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1234168 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 95% and 100% respectively. The U-234 and U-238 LCSD recoveries are 95.3% and 95.3% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

The laboratory reported LCS results and laboratory duplicate results for preparation batch 1238036. LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1238036 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 97.5% and 110% respectively. U-235 is not a spiked isotope. All LCS recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS/LCSD recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H170425.

No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The laboratory analyzed a LCS/LCSD pair rather than a laboratory duplicate sample for batch 1234168. Results are summarized below.

Analyte	F1H220000-168C			F1H220000-168L		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	3.09	0.40	0.046	3.11	0.41	0.054
U-235	0.13	0.071	0.026	0.16	0.083	0.052
U-238	3.39	0.43	0.041	3.23	0.42	0.042

TPU – Total Propagated Uncertainty

U-235 is not present in the LCS/LCSD spike solution. All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Sample A03MW14D0001 Diss was analyzed as the laboratory duplicate sample for batch 1238036. Results are summarized below.

Analyte	A03MW14D0001 Diss			A03MW14D0001 Diss LDUP		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	2.49	0.82	0.39	2.35	0.64	0.25
U-235	-0.038	0.054	0.40	0.049	0.097	0.13
U-238	2.09	0.74	0.32	1.96	0.58	0.23

All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Samples A03MW14D0001 Diss, A04CMW711DD0001 Diss, and A03MW17D0001 Tot were re-extracted because of low U-232 tracer recoveries. Due to limited sample volumes for the re-extractions only 250 mLs of sample were extracted for A03MW14D0001 Diss, A04CMW711DD0001 Diss and A03MW17D0001 Tot. The minimum detectable concentrations (MDCs) were elevated because of the smaller sample volumes.

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Calculations

The U-232 tracer recovery for A03MW14D0001Tot (F1H170425-008) Batch 1234168

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 192
U-232 Tracer Background Counts: 0.250
U-232 Tracer net counts: 191.75
Count Time: 240 minutes
Detector Efficiency: 26.58%

U-232 Tracer recovered = (191.75)/(240)(0.2658) = 3.006 DPM
U-232 Tracer % Recovery = (3.006 DPM/7.155 DPM) * 100 = 42.01%. The laboratory reported 42.03%.

The U-238 concentration for A03MW14D0001Tot (F1H170425-008) Batch 1234168

U-238 gross counts: 124
U-238 background counts: 0.000
U-238 net counts: 124
Count time: 240 minutes
Detector Efficiency: 26.58%
Tracer Recovery: 42.03%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (124)/(2.22)(1.000)(240)(0.2658)(0.4203) = 2.08 pCi/L. The laboratory reported 2.08 pCi/L

The U-232 tracer recovery for A03MW14D0001 Diss (F1H170425-002) Batch 1238036

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 212
U-232 Tracer Background Counts: 0.000
U-232 Tracer net counts: 212.00
Count Time: 240 minutes
Detector Efficiency: 26.58%

U-232 Tracer recovered = (212.00)/(240)(0.2658) = 3.323 DPM
U-232 Tracer % Recovery = (3.323 DPM/7.155 DPM) * 100 = 46.44%. The laboratory reported 46.47%.

The U-238 concentration for A03MW14D0001 Diss (F1H170425-002) Batch 1238036

U-238 gross counts: 35
U-238 background counts: 0.500
U-238 net counts: 34.50
Count time: 240 minutes
Detector Efficiency: 26.58%
Tracer Recovery: 46.47%
Sample volume: 0.250 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (34.50)/(2.22)(0.250)(240)(0.2658)(0.4647) = 2.09 pCi/L. The laboratory reported 2.09 pCi/L

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H170425

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A03MW606D0001 Diss	Aqueous	J[1]
A03MW14D0001 Diss	Aqueous	A
A03MW14D0001 Diss LDUP	Aqueous	A
A03MW606DR0001 Diss	Aqueous	J[1]
A03MW15D0001 Diss	Aqueous	A
A03MW17D0001 Diss	Aqueous	A
A04CMW711DD0001 Diss	Aqueous	A
A03MW606D0001 Tot	Aqueous	J[1]
A03MW14D0001 Tot	Aqueous	A
A03MW606DR0001 Tot	Aqueous	A
A03MW15D0001 Tot	Aqueous	A
A03MW17D0001 Tot	Aqueous	A
A04CMW711DD0001 Tot	Aqueous	J[2] J[3]

A - Accept all data without qualification.

J[1]- The U-234, U-235 and U-238 results are qualified as estimated (J). The U-232 tracer recovery is less than 40%.

J[2]- The U-235 result is qualified as non-detected estimated (UJ). The U-232 tracer recovery is less than 40%. The laboratory reported the result as non-detected (U).

J[3]- The U-234 and U-238 results are qualified as estimated (J). The U-232 tracer recovery is less than 40%.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 20, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H170425
Site Name: Guterl Steel
Samples Collected: 08/15/2011 and 08/16/2011
12 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A03MW606D0001 Diss	F1H170425-001	A03MW606D0001 Tot	F1H170425-007
A03MW14D0001 Diss	F1H170425-002	A03MW14D0001 Tot	F1H170425-008
A03MW606DR0001 Diss	F1H170425-003	A03MW606DR0001 Tot	F1H170425-009
A03MW15D0001 Diss	F1H170425-004	A03MW15D0001 Tot	F1H170425-010
A03MW17D0001 Diss	F1H170425-005	A03MW17D0001 Tot	F1H170425-011
A04CMW711DD0001 Diss	F1H170425-006	A04CMW711DD0001 Tot	F1H170425-012

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data*

Review (OSWER 9240.1-45 and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%, except for A04CMW711DD0001 Diss and A04CMW711DD0001 Tot. The uranium results are 2.9 ug/L and 1.7 ug/L respectively. Both results are greater than 5X the MDL (0.23 ug/L). Using professional judgment the uranium results for A04CMW711DD0001 Diss and A04CMW711DD0001 Tot are qualified as estimated (J).

All other results are accepted without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/15/2011 and 08/16/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was is 99.7%

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04BMW706D0001 Diss, reported in laboratory data package F1H160430, was analyzed as the MS/MSD pair associated with preparation batch 1229103. The MS/MSD recoveries are 111.5% and 111.7% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04BMW706D0001 Diss, reported in laboratory data package F1H160430, was analyzed as the MS/MSD pair associated with preparation batch 1229103. The MS/MSD RPD is 0.1%

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H170425.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04BMW706D0001 Diss, reported in laboratory data package F1H160430, was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below. The uranium result for A04BMW706D0001 Diss is 1.7ug/L. The uranium sample concentration is less than 2X the reporting limit (RL). The uranium concentration is sample A04BMW706D0001 Diss is too low to evaluate the serial dilution results.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All field sample results are detected at concentrations greater than the RL. All total and dissolved results agree within 20%, except for A04CMW711DD0001 Diss and A04CMW711DD0001 Tot. The uranium results are 2.9 ug/L and 1.7 ug/L respectively. Both results are greater than 5X the MDL. Using professional judgment the uranium results for A04CMW711DD0001 Diss and A04CMW711DD0001 Tot are qualified as estimated (J).

Calculations

Sample A04BMW706D0001 Diss, reported in laboratory data package F1H160430, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 1.7 ug/L
MS uranium concentration: 1120 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1120 ug/L – 1.7 ug/L)/ 1000 ug/L)) * 100 = 111.8%. The laboratory reported 111.5%.

Serial Dilution:
Sample uranium concentration: 1.7 ug/L
Serial dilution concentration of the 5X dilution: 1.8 ug/L
The serial dilution% difference is not calculated because the sample concentration is not greater than 50X the IDL.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

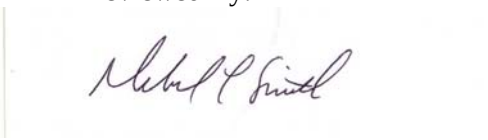
Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

295 Lower Flying Point Road Freeport ME 04032
Phone: (207) 865-1256 Fax: (207) 865-1256 Electronic Mail: KestrelET@comcast.net

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H170425

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A03MW606D0001 Diss	Aqueous	A
A03MW14D0001 Diss	Aqueous	A
A03MW606DR0001 Diss	Aqueous	A
A03MW15D0001 Diss	Aqueous	A
A03MW17D0001 Diss	Aqueous	A
A04CMW711DD0001 Diss	Aqueous	J^1
A03MW606D0001 Tot	Aqueous	A
A03MW14D0001 Tot	Aqueous	A
A03MW606DR0001 Tot	Aqueous	A
A03MW15D0001 Tot	Aqueous	A
A03MW17D0001 Tot	Aqueous	A
A04CMW711DD0001 Tot	Aqueous	J^1

A - Accept all data without qualification.

J^1 – The uranium result is qualified as estimated (J). The dissolved result is greater than the total result, both results are greater than 5X the MDL, and the % difference exceeds 20%.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H190431
Site Name: Guterl Steel
Samples Collected: 08/18/2011
12 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04DMW710DD0001 Diss	F1H190431-001	A04DMW710DD0001 Tot	F1H190431-007
A04DFB710DD0001 Diss	F1H190431-002	A04DFB710DD0001 Tot	F1H190431-008
A04DMW712DD0001 Diss	F1H190431-003	A04DMW712DD0001 Tot	F1H190431-009
A04AMW610D0001 Diss	F1H190431-004	A04AMW610D0001 Tot	F1H190431-011
A04AMW200001 Diss	F1H190431-005	A04AMW200001 Tot	F1H190431-012
A04AMW210001 Diss	F1H190431-006	A04AMW210001 Tot	F1H190431-013

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The laboratory used an incorrect sample identity. The laboratory used the client sample ID A04AM2100001 Diss rather than the client ID on the chain of custody, A04AMW210001 Diss. This validation uses the client ID as reported on the chain of custody, A04AMW210001 Diss.

All results are reported without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.
The laboratory used an incorrect sample identity. The laboratory used the client sample ID A04AM2100001 Diss rather than the client ID on the chain of custody, A04AMW210001 Diss. This validation uses the client ID as reported on the chain of custody, A04AMW210001 Diss.

Sample Preservation and Holding Times

Samples were collected on 08/18/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1235027 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H230000-027B	0.025	0.034	0.053	1.452
U-235	F1H230000-027B	-0.003	0.005	0.047	-0.999
U-238	F1H230000-027B	0.006	0.017	0.037	0.727

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1235027 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 87.6% and 98.0% respectively. The U-234 and U-238 LCSD recoveries are 94.7% and 100% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS/LCSD recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H190431. No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The laboratory analyzed a LCS/LCSD pair rather than a laboratory duplicate sample for batch 1235027. Results are summarized below.

Analyte	F1H230000-027C			F1H230000-027L		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	2.86	0.388	0.037	3.09	0.407	0.046
U-235	0.262	0.105	0.027	0.216	0.094	0.027
U-238	3.32	0.431	0.048	3.39	0.434	0.036

TPU – Total Propagated Uncertainty

U-235 is not present in the LCS/LCSD spike solution. All difference factors are below the control limits. No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks for the field samples are properly identified, well defined and adequately resolved. The spectra for LCS/LCSDs F1H230000-027C and F1H230000-027L were resolved manually. The full width half maximums for F1H230000-027C were almost twice those reported for the field samples. The LCS/LCSD recoveries were within the acceptance criteria and the U-232 tracer recoveries were 84.9% and 87.4% respectively.

No results are qualified due to spectral resolution.

Calculations

The U-232 tracer recovery for A04DMW712DD0001 Diss (F1H190431-003) Batch 1235027

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 274
U-232 Tracer Background Counts: 1.500

U-232 Tracer net counts: 272.50
Count Time: 240 minutes
Detector Efficiency: 27.67%

U-232 Tracer recovered = (272.50)/(240)(0.2767) = 4.103 DPM
U-232 Tracer % Recovery = (4.103 DPM/7.155 DPM) * 100 = 57.35%. The laboratory reported 57.37%.

The U-234 concentration for A04DMW712DD0001 Diss (F1H190431-003) Batch 1235027

U-234 gross counts: 1184
U-234 background counts: 1.250
U-234 net counts: 1182.75
Count time: 240 minutes
Detector Efficiency: 27.67%
Tracer Recovery: 57.37%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (1182.75)/(2.22)(1.000)(240)(0.2767)(0.5737) = 13.98 pCi/L. The laboratory reported 14.0 pCi/L

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H190431

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04DMW710DD0001 Diss	Aqueous	A
A04DFB710DD0001 Diss	Aqueous	A
A04DMW712DD0001 Diss	Aqueous	A
A04AMW610D0001 Diss	Aqueous	A
A04AMW200001 Diss	Aqueous	A
A04AMW210001 Diss	Aqueous	A
A04DMW710DD0001 Tot	Aqueous	A
A04DFB710DD0001 Tot	Aqueous	A
A04DMW712DD0001 Tot	Aqueous	A
A04AMW610D0001 Tot	Aqueous	A
A04AMW200001 Tot	Aqueous	A
A04AMW210001 Tot	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 21, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H190431
Site Name: Guterl Steel
Samples Collected: 08/18/2011
12 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04DMW710DD0001 Diss	F1H190431-001	A04DMW710DD0001 Tot	F1H190431-007
A04DFB710DD0001 Diss	F1H190431-002	A04DFB710DD0001 Tot	F1H190431-008
A04DMW712DD0001 Diss	F1H190431-003	A04DMW712DD0001 Tot	F1H190431-009
A04AMW610D0001 Diss	F1H190431-004	A04AMW610D0001 Tot	F1H190431-011
A04AMW200001 Diss	F1H190431-005	A04AMW200001 Tot	F1H190431-012
A04AMW210001 Diss	F1H190431-006	A04AMW210001 Tot	F1H190431-013

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data*

Review (OSWER 9240.1-45 and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
X		Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

The laboratory used an incorrect sample identity. The laboratory used the client sample ID A04AM2100001 Diss rather than the client ID on the chain of custody, A04AMW210001 Diss. This validation uses the client ID as reported on the chain of custody, A04AMW210001 Diss.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The uranium result for A04DFB710DD0001 Diss is qualified as estimated (J). The reported result is between the method detection limit (MDL) and RL.

All other results are accepted without qualification. All total and dissolved results agree within 20%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

The laboratory used an incorrect sample identity. The laboratory used the client sample ID A04AM2100001 Diss rather than the client ID on the chain of custody, A04AMW210001 Diss. This validation uses the client ID as reported on the chain of custody, A04AMW210001 Diss.

Sample Preservation and Holding Times

Samples were collected on 08/18/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was is 98.7%

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04DMW710DD0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1234135. The MS/MSD recoveries are 105% and 102% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A04DMW710DD0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1234135. The MS/MSD RPD is 2.9%

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H190431.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04DMW710DD0001 Diss was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The uranium result for A04DFB710DD0001 Diss is qualified as estimated (J). The reported result is between the method detection limit (MDL) and RL.

All other results are accepted without qualification. All total and dissolved results agree within 20%.

Calculations

Sample A04DMW710D0001 Diss, reported in laboratory data package F1H190431, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 67.0 ug/L
MS uranium concentration: 1120 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1120 ug/L – 67.0 ug/L)/ 1000 ug/L)) * 100 = 105.3%. The laboratory reported 105.0%.

Serial Dilution:
Sample uranium concentration: 67.0 ug/L
Serial dilution concentration of the 5X dilution: 62.7 ug/L
ICP-MS Serial Dilution Percent Difference = ((67.0-62.7)/(67.0) * 100 = 6.41%. The laboratory reported 6.31%.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

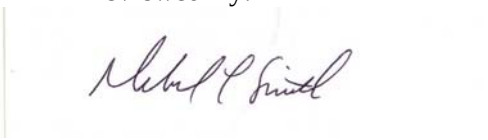
Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

295 Lower Flying Point Road Freeport ME 04032
Phone: (207) 865-1256 Fax: (207) 865-1256 Electronic Mail: KestrelET@comcast.net

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H190431

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04DMW710DD0001 Diss	Aqueous	A
A04DFB710DD0001 Diss	Aqueous	J[1]
A04DMW712DD0001 Diss	Aqueous	A
A04AMW610D0001 Diss	Aqueous	A
A04AMW200001 Diss	Aqueous	A
A04AMW210001 Diss	Aqueous	A
A04DMW710DD0001 Tot	Aqueous	A
A04DFB710DD0001 Tot	Aqueous	A
A04DMW712DD0001 Tot	Aqueous	A
A04AMW610D0001 Tot	Aqueous	A
A04AMW200001 Tot	Aqueous	A
A04AMW210001 Tot	Aqueous	A

A - Accept all data without qualification.

J[1]- The uranium result is qualified as estimated (J). The reported result is between the MDL and RL.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 03, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H230407
Site Name: Guterl Steel
Samples Collected: 08/22/2011
8 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A02MW600D0001 Diss	F1H230407-001	A02MW600D0001 Tot	F1H230407-006
A02MW50001 Diss	F1H230407-002	A02MW50001 Tot	F1H230407-007
A02MW120001 Diss	F1H230407-003	A02MW120001 Tot	F1H230407-008
A02MW30001 Diss	F1H230407-004	A02MW30001 Tot	F1H230407-009

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in

conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The laboratory used an incorrect sample identity. The laboratory used the client sample ID A02M600D0001 Tot rather than the client ID on the chain of custody, A02MW600D0001 Tot. This validation used the client ID as reported on the chain of custody, A02MW600D0001 Tot.

The laboratory condition upon receipt form noted that the sample label on the sample container for A02MW600D0001 read A05BMW600D0001. The laboratory and this validation memo used A02MW600D0001 as the sample ID.

The laboratory condition upon receipt form noted that the sample label on the sample containers for the matrix spike and matrix spike duplicate (MS/MSD) had an A03 sample prefix rather than A02. The A02 prefix is correct and the laboratory and the validation memo used the A02 prefix for the MS/MSD samples; A02MW50001MS/MSD total and dissolved fractions.

All results are reported without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

The laboratory used an incorrect sample identity. The laboratory used the client sample ID A02M600D0001 Tot rather than the client ID on the chain of custody, A02MW600D0001 Tot. This validation used the client ID as reported on the chain of custody, A02MW600D0001 Tot.

The laboratory condition upon receipt form noted that the sample label on the sample container for A02MW600D0001 read A05BMW600D0001. The laboratory and this validation memo used A02MW600D0001 as the sample ID.

The laboratory condition upon receipt form noted that the sample label on the sample containers for the matrix spike and matrix spike duplicate (MS/MSD) had an A03 sample prefix rather than A02. The A02 prefix is correct and the laboratory and the validation memo used the A02 prefix for the MS/MSD samples; A02MW50001MS/MSD total and dissolved fractions.

Sample Preservation and Holding Times

Samples were collected on 08/22/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1236047 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H240000-047B	0.015	0.032	0.059	0.961
U-235	F1H240000-047B	-0.003	0.005	0.049	-0.999
U-238	F1H240000-047B	-0.004	0.006	0.046	-1.412

MDA- Minimal Detectable Activity

Aqueous method blank results associated with preparation batch 1236152 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H240000-152B	-0.007	0.008	0.057	-1.728
U-235	F1H240000-152B	0.000	0.012	0.032	0.000
U-238	F1H240000-152B	0.010	0.036	0.077	0.534

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1236047 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 95.2% and 102% respectively. The U-234 and U-238 LCSD recoveries are 95.5% and 99.2% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

LCS/LCSD recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1236152 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 100% and 100% respectively. The U-234 and U-238 LCSD recoveries are 104% and 120% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 73-131%.

No results are qualified based upon the LCS/LCSD recoveries.

Matrix Spike Sample Results

No matrix spike samples were analyzed. Recoveries are evaluated from the chemical tracer recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H230407.

No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The laboratory analyzed a LCS/LCSD pair rather than a laboratory duplicate sample for batch 1236047. Results are summarized below.

Analyte	F1H240000-047C			F1H240000-047L		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	3.11	0.416	0.044	3.12	0.411	0.051
U-235	0.164	0.085	0.047	0.237	0.100	0.045
U-238	3.47	0.449	0.038	3.36	0.434	0.051

TPU – Total Propagated Uncertainty

The laboratory analyzed a LCS/LCSD pair rather than a laboratory duplicate sample for batch 1236152. Results are summarized below.

Analyte	F1H240000-152C			F1H240000-152L		
	Result pCi/L	**TPU**	**MDA**	**Result pCi/L**	**TPU**	**MDA**
U-234	3.27	0.424	0.063	3.41	0.434	0.056
U-235	0.111	0.070	0.058	0.180	0.086	0.052
U-238	3.40	0.435	0.047	4.09	0.495	0.053

TPU – Total Propagated Uncertainty

U-235 is not present in the LCS/LCSD spike solution. The U-238 laboratory duplicate Z factor is 2.068 and the relative percent difference (RPD) is 18.2%. The QAPP RPD acceptance criteria for the laboratory duplicate is the RPD < 40%.

No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks are properly identified, well defined and adequately resolved.

Calculations

The U-232 tracer recovery for A02MW120001 Diss (F1H230407-003) Batch 1236047

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 358
U-232 Tracer Background Counts: 0.000
U-232 Tracer net counts: 358.00
Count Time: 240 minutes
Detector Efficiency: 26.58%

U-232 Tracer recovered = (358.00)/(240)(0.2658) = 5.612 DPM
U-232 Tracer % Recovery = (5.612 DPM/7.155 DPM) * 100 = 78.44%. The laboratory reported 78.48%.

The U-234 concentration for A02MW120001 Diss (F1H230407-003) Batch 1236047

U-234 gross counts: 119
U-234 background counts: 1.000
U-234 net counts: 118
Count time: 240 minutes
Detector Efficiency: 26.58%
Tracer Recovery: 78.48%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (118.00)/(2.22)(1.000)(240)(0.2658)(0.7848) = 1.06 pCi/L. The laboratory reported 1.06 pCi/L

The U-232 tracer recovery for A02MW120001 Tot (F1H230407-008) Batch 1236152

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 355
U-232 Tracer Background Counts: 0.500
U-232 Tracer net counts: 354.50
Count Time: 240 minutes
Detector Efficiency: 27.22%

U-232 Tracer recovered = (354.50)/(240)(0.2722) = 5.426 DPM
U-232 Tracer % Recovery = (5.426 DPM/7.155 DPM) * 100 = 75.84%. The laboratory reported 75.87%.

The U-238 concentration for A02MW120001 Tot (F1H230407-008) Batch 1236152

U-238 gross counts: 158
U-238 background counts: 0.250
U-238 net counts: 157.75

Count time: 240 minutes
Detector Efficiency: 27.22%
Tracer Recovery: 75.87%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (157.75)/(2.22)(1.000)(240)(0.2722)(0.7587) = 1.43 pCi/L. The laboratory reported 1.43 pCi/L

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H230407

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A02MW600D0001 Diss	Aqueous	A
A02MW50001 Diss	Aqueous	A
A02MW120001 Diss	Aqueous	A
A02MW30001 Diss	Aqueous	A
A02MW600D0001 Tot	Aqueous	A
A02MW50001 Tot	Aqueous	A
A02MW120001 Tot	Aqueous	A
A02MW30001 Tot	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 24, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H230407
Site Name: Guterl Steel
Samples Collected: 08/22/2011
8 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A02MW600D0001 Diss	F1H230407-001	A02MW600D0001 Tot	F1H230407-006
A02MW50001 Diss	F1H230407-002	A02MW50001 Tot	F1H230407-007
A02MW120001 Diss	F1H230407-003	A02MW120001 Tot	F1H230407-008
A02MW30001 Diss	F1H230407-004	A02MW30001 Tot	F1H230407-009

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

The laboratory used an incorrect sample identity. The laboratory used the client sample ID A02M600D0001 Tot rather than the client ID on the chain of custody, A02MW600D0001 Tot. This validation used the client ID as reported on the chain of custody, A02MW600D0001 Tot.

The laboratory condition upon receipt form noted that the sample label on the sample container for A02MW600D0001 read A05BMW600D0001. The laboratory and this validation memo used A02MW600D0001 as the sample ID.

The laboratory condition upon receipt form noted that the sample label on the sample containers for the matrix spike and matrix spike duplicate (MS/MSD) had an A03 sample prefix rather than A02. The A02 prefix is correct and the laboratory and the validation memo used the A02 prefix for the MS/MSD samples; A02MW50001MS/MSD total and dissolved fractions.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All results are accepted without qualification. All total and dissolved results agree within 20%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

The laboratory used an incorrect sample identity. The laboratory used the client sample ID A02M600D0001 Tot rather than the client ID on the chain of custody, A02MW600D0001 Tot. This validation used the client ID as reported on the chain of custody, A02MW600D0001 Tot.

The laboratory condition upon receipt form noted that the sample label on the sample container for A02MW600D0001 read A05BMW600D0001. The laboratory and this validation memo used A02MW600D0001 as the sample ID.

The laboratory condition upon receipt form noted that the sample label on the sample containers for the matrix spike and matrix spike duplicate (MS/MSD) had an A03 sample prefix rather than A02. The A02 prefix is correct and the laboratory and the validation memo used the A02 prefix for the MS/MSD samples; A02MW50001MS/MSD total and dissolved fractions.

Sample Preservation and Holding Times

Samples were collected on 08/22/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection

limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was is 98.7%
No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A02MW50001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1236076. The MS/MSD recoveries are 98.4% and 98.8% respectively.

Sample A02MW50001 Tot was analyzed as the MS/MSD pair associated with preparation batch 1236076. The MS/MSD recoveries are 97.3% and 95.8% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is ≤ 30%.

Sample A02MW50001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1236076. The MS/MSD RPD is 0.4%.

Sample A02MW50001 Tot was analyzed as the MS/MSD pair associated with preparation batch 1236076. The MS/MSD RPD is 1.5%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H230407.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A02MW50001 Diss was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon ICP-MS serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All results are accepted without qualification. All total and dissolved results agree within 20%.

Calculations

Sample A02MW50001 Diss, reported in laboratory data package F1H230407, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 6.2 ug/L
MS uranium concentration: 991 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((991 ug/L – 6.2 ug/L)/ 1000 ug/L)) * 100 = 98.5%. The laboratory reported 98.8%.

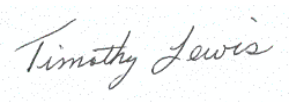
Serial Dilution:
Sample uranium concentration: 6.2 ug/L
Serial dilution concentration of the 5X dilution: 6.1 ug/L
ICP-MS Serial Dilution Percent Difference = ((6.2-6.1)/(6.2) * 100 = 1.6%. The laboratory reported 0.91%. The sample concentration is too low to evaluate the ICP-MS serial dilution results.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

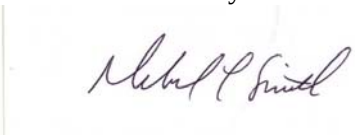
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H230407

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A02MW600D0001 Diss	Aqueous	A
A02MW50001 Diss	Aqueous	A
A02MW120001 Diss	Aqueous	A
A02MW30001 Diss	Aqueous	A
A02MW600D0001 Tot	Aqueous	A
A02MW50001 Tot	Aqueous	A
A02MW120001 Tot	Aqueous	A
A02MW30001 Tot	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 21, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H230464
Site Name: Guterl Steel
Samples Collected: 08/19/2011
12 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A03MW607D0001 Tot	F1H230464-001	A03MW607D0001 Diss	F1H230464-009
A03MW703DD0001 Tot	F1H230464-002	A03MW703DD0001 Diss	F1H230464-010
A03MW16D0001 Tot (FD)	F1H230464-003	A03MW16D0001 Diss (FD)	F1H230464-011
A02MW40001 Tot	F1H230464-004	A02MW40001 Diss	F1H230464-012
A03MW9004 Tot (FD)	F1H230464-005	A03MW9004 Diss (FD)	F1H230464-013
A04AMW701DD0001 Tot	F1H230464-006	A04AMW701DD0001 Diss	F1H230464-014

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	X	Matrix Spike Results
	X	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The laboratory used an incorrect sample ID. The laboratory used a sample ID of A03MW607D001 Tot (F1H230464-001) rather than A03MW607D0001 Tot; the sample ID on the chain of custody. The validation used the A03MW607D0001 Tot ID.

All isotopic uranium results are reported without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates were recorded for all field samples. Sampling times were not recorded for sample A03MW9004. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

The laboratory used an incorrect sample ID. The laboratory used a sample ID of A03MW607D001 Tot (F1H230464-001) rather than A03MW607D0001 Tot; the sample ID on the chain of custody. The validation used the A03MW607D0001 Tot ID.

Sample Preservation and Holding Times

Samples were collected on 08/19/2011. The condition upon receipt form indicates that all aqueous metal samples were properly preserved except for A03MW607D0001 Tot and A03MW703DD0001. The laboratory noted that these samples were received at a pH of 7. The laboratory added sufficient nitric acid to lower the pH to < 2. The pH was adjusted on 08/23/2011 and the samples were prepared for analysis on 08/26/2011.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1238042 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H260000-042B	0.007	0.027	0.060	0.493
U-235	F1H260000-042B	-0.0027	0.0055	0.050	-0.999
U-238	F1H260000-042B	0.009	0.026	0.056	0.664

MDA- Minimal Detectable Activity

Aqueous method blank results associated with preparation batch 1238069 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H260000-069B	0.021	0.029	0.045	1.452
U-235	F1H260000-069B	0.004	0.019	0.047	0.471
U-238	F1H260000-069B	0.004	0.015	0.038	0.471

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1238042 are summarized below. The laboratory did not analyze a LCSD because a MS/MSD pair was analyzed.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 97.2% and 94.4% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 75-131%.

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 1238069 are summarized below. The laboratory did not analyze a LCSD because a MS/MSD pair was analyzed.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 93.8% and 99.2% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 75-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

Guterl Steel sample A03MW703DD0001 Tot (F1H230464-002) was analyzed as the batch 1238042 MS/MSD pair. All MS/MSD recoveries were within the QAPP acceptance criteria, 59-150%. U-235 is not part of the MS/MSD spike solution.

Guterl Steel sample A03MW703DD0001 Diss (F1H230464-10)) was analyzed as the batch 1238069 MS/MSD pair. All MS/MSD recoveries were within the QAPP acceptance criteria, 59-150%. U-235 is not part of the MS/MSD spike solution.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Samples A03MW16D0001Tot and A03MW9004 Tot are a field duplicate pair. Results are summarized below.

Analyte	A03MW16D0001 Tot			A03MW9004 Tot		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	8.8	1.0	0.09	8.38	0.95	0.08
U-235	0.44	0.18	0.08	0.42	0.16	0.08
U-238	9.7	1.1	0.07	8.88	0.99	0.06

TPU – Total Propagated Uncertainty

Samples A03MW16D0001Diss and A03MW9004 Diss are a field duplicate pair. Results are summarized below.

Analyte	A03MW16D0001 Diss			A03MW9004 Diss		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	8.9	1.0	0.06	9.2	1.0	0.06
U-235	0.45	0.18	0.05	0.58	0.20	0.04
U-238	10.2	1.1	0.04	10.1	1.1	0.08

TPU – Total Propagated Uncertainty

No results are qualified based upon the field duplicate results.

Laboratory Duplicates

The MS/MSD results are evaluated as laboratory duplicate samples.
The laboratory analyzed sample A03MW703DD0001 Tot (F1H230464-2) as the laboratory MS/MSD pair for analytical batch 1238042. Results are summarized below.

Analyte	A03MW703DD0001 Tot MS			A03MW703DD0001 Tot MSD		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	3.588	0.3495	0.077	3.119	0.430	0.067
U-235	0.180	0.101	0.071	0.135	0.081	0.052
U-238	3.338	0.471	0.073	3.135	0.340	0.025

TPU – Total Propagated Uncertainty

The laboratory analyzed sample A03MW703DD0001 Diss (F1H230464-10) as the laboratory MS/MSD pair for analytical batch 1238069. Results are summarized below.

Analyte	A03MW703DD0001 Diss MS			A03MW703DD0001 Diss MSD		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	3.115	0.450	0.057	2.712	0.397	0.062
U-235	0.130	0.085	0.061	0.090	0.069	0.064
U-238	3.176	0.455	0.049	2.837	0.408	0.051

TPU – Total Propagated Uncertainty

No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks for the field samples are properly identified, well defined and adequately resolved.

No results are qualified due to spectral resolution.

Calculations

The U-232 tracer recovery for A03MW16D0001 Tot (F1H230464-003) Batch 1238042

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 234
U-232 Tracer Background Counts: 1.250
U-232 Tracer net counts: 232.75
Count Time: 240 minutes
Detector Efficiency: 26.42%

U-232 Tracer recovered = (232.75)/(240)(0.2642) = 3.671 DPM
U-232 Tracer % Recovery = (3.671 DPM/7.155 DPM) * 100 = 51.30%. The laboratory reported 51.33%.

The U-234 concentration for A03MW16D0001 Tot (F1H230464-003) Batch 1238042

U-234 gross counts: 634
U-234 background counts: 1.250
U-234 net counts: 632.75
Count time: 240 minutes
Detector Efficiency: 26.42%
Tracer Recovery: 51.33%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (632.75)/(2.22)(1.000)(240)(0.2642)(0.5130) = 8.76 pCi/L. The laboratory reported 8.77 pCi/L.

The U-232 tracer recovery for A03MW703DD0001 Diss MS (F1H230464-010S) Batch 1238069

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 334
U-232 Tracer Background Counts: 0.75
U-232 Tracer net counts: 333.25

Count Time: 240 minutes
Detector Efficiency: 28.11%

U-232 Tracer recovered = (333.25)/(240)(0.2811) = 4.940 DPM
U-232 Tracer % Recovery = (4.940 DPM/7.155 DPM) * 100 = 69.03%. The laboratory reported 69.07%.

The U-238 concentration for A03MW703DD0001 Diss MS (F1H230464-010S) Batch 1238069

U-238 gross counts: 294
U-238 background counts: 0.500
U-238 net counts: 293.50
Count time: 240 minutes
Detector Efficiency: 28.11%
Tracer Recovery: 69.07%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute
CPM = Counts/minute

U-238 Concentration: = (293.50)/(2.22)(1.000)(240)(0.2811)(0.6907) = 2.837 pCi/L. The laboratory reported 2.837 pCi/L.

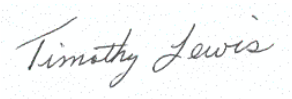
Matrix spike added: (75.26CPM/ml)(0.10 mL)(1.0 pCi/2.22 CPM)(1.000 Liters) = 3.39 pCi/L

Matrix Spike % Recovery : (Concentration measured)/(Calculated Concentration) * 100 = (2.837 pCi/L)/(3.39 pCi/L) * 100 = 83.7%. The laboratory reported the MS recovery 83.7%.

Table 1 summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

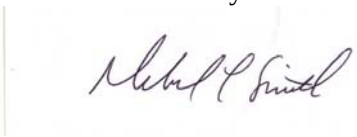
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H230464

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A03MW607D0001 Tot	Aqueous	A
A03MW703DD0001 Tot	Aqueous	A
A03MW16D0001 Tot (FD)	Aqueous	A
A02MW40001 Tot	Aqueous	A
A03MW9004 Tot (FD)	Aqueous	A
A04AMW701DD0001 Tot	Aqueous	A
A03MW607D0001 Diss	Aqueous	A
A03MW703DD0001 Diss	Aqueous	A
A03MW16D0001 Diss (FD)	Aqueous	A
A02MW40001 Diss	Aqueous	A
A03MW9004 Diss (FD)	Aqueous	A
A04AMW701DD0001 Diss	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 21, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H230464
Site Name: Guterl Steel
Samples Collected: 08/19/2011
12 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A03MW607D0001 Tot	F1H230464-001	A03MW607D0001 Diss	F1H230464-009
A03MW703DD0001 Tot	F1H230464-002	A03MW703DD0001 Diss	F1H230464-010
A03MW16D0001 Tot (FD)	F1H230464-003	A03MW16D0001 Diss (FD)	F1H230464-011
A02MW40001 Tot	F1H230464-004	A02MW40001 Diss	F1H230464-012
A03MW9004 Tot (FD)	F1H230464-005	A03MW9004 Diss (FD)	F1H230464-013
A04AMW701DD0001 Tot	F1H230464-006	A04AMW701DD0001 Diss	F1H230464-014

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data*

Review (OSWER 9240.1-45 and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	X	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
X		Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Samples were collected on 08/19/2011. The condition upon receipt form indicates that all aqueous metal samples were properly preserved except for A03MW607D0001 Tot and A03MW703DD0001. The laboratory noted that these samples were received at a pH of 7. The laboratory added sufficient nitric acid to lower the pH to < 2. The pH was adjusted on 08/23/2011 and the sample was prepared for analysis on 08/24/2011.

The laboratory used an incorrect sample ID. The laboratory used a sample ID of A03MW607D001 Tot (F1H230464-001) rather than A03MW607D0001 Tot; the sample ID on the chain of custody. The validation used the A03MW607D0001 Tot ID.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The uranium result for A03MW703DD0001 Tot is qualified as estimated (J). The reported result is between the method detection limit (MDL) and RL.

All total and dissolved results agree within 20%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates were recorded for all field samples. Sampling times were not recorded for sample A03MW9004. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

The laboratory used an incorrect sample ID. The laboratory used a sample ID of A03MW607D001 Tot (F1H230464-001) rather than A03MW607D0001 Tot; the sample ID on the chain of custody. The validation used the A03MW607D0001 Tot ID.

Sample Preservation and Holding Times

Samples were collected on 08/19/2011. The condition upon receipt form indicates that all aqueous metal samples were properly preserved except for A03MW607D0001 Tot and A03MW703DD0001. The laboratory noted that these samples were received at a pH of 7. The laboratory added sufficient nitric acid to lower the pH to < 2. The pH was adjusted on 08/23/2011 and the samples were prepared for analysis on 08/24/2011.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was 98.7%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A03MW703DD0001 Tot was analyzed as the MS/MSD pair associated with preparation batch 1236077. The MS/MSD recoveries are 109% and 109% respectively.

Sample A03MW703DD0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1236077. The MS/MSD recoveries are 103% and 101% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is ≤ 30%.

Sample A03MW703DD0001 Tot was analyzed as the MS/MSD pair associated with preparation batch 1236077. The MS/MSD relative percent difference is 0.46%.

Sample A03MW703DD0001 Diss was analyzed as the MS/MSD pair associated with preparation batch 1236077. The MS/MSD relative percent difference is 1.3%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Samples A03MW16D0001/A03MW9004 total and dissolved fractions are two field duplicate pairs. The field duplicate RPDs are less than 50%. The RPDs are 3.1% and 1.8% respectively.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10%, results are qualified as estimated (J).

Sample A03MW703DD0001 Tot was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
Uranium	0.28	1.2 U	NC	None

The uranium sample concentration is less than 50X the IDL. The concentration is too low to evaluate the serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All total and dissolved results agree within 20%.

The uranium result for A03MW703DD0001 Tot is qualified as estimated (J). The reported result is between the MDL and RL.

Calculations

Sample A03MW703DD0001 Tot, reported in laboratory data package F1H230464, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 0.28 ug/L
MS uranium concentration: 1090 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1090 ug/L – 0.28 ug/L)/ 1000 ug/L)) * 100 = 109%. The laboratory reported 109.4%.

Serial Dilution:
Sample uranium concentration: 0.28 ug/L
Serial dilution concentration of the 5X dilution: 1.2 ug/L (U)
ICP-MS Serial Dilution Percent Difference = Not Calculated. The ICP-MS serial dilution result is reported as non-detected (U) at 1.2 ug/L. The uranium IDL is 0.23 ug/L.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

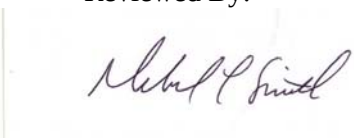
Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H230464

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A03MW607D0001 Tot	Aqueous	A
A03MW703DD0001 Tot	Aqueous	J[1]
A03MW16D0001 Tot (FD)	Aqueous	A
A02MW40001 Tot	Aqueous	A
A03MW9004 Tot (FD)	Aqueous	A
A04AMW701DD0001 Tot	Aqueous	A
A03MW607D0001 Diss	Aqueous	A
A03MW703DD0001 Diss	Aqueous	A
A03MW16D0001 Diss (FD)	Aqueous	A
A02MW40001 Diss	Aqueous	A
A03MW9004 Diss (FD)	Aqueous	A
A04AMW701DD0001 Diss	Aqueous	A

A - Accept all data without qualification.

J[1]- The uranium result is qualified as estimated (J). The reported result is between the MDL and RL.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 21, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H240450
Site Name: Guterl Steel
Samples Collected: 08/23/2011
6 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A02MW9005 Tot	F1H240450-001	A02MW9005 Diss	F1H240450-006
A02MW010001 Tot	F1H240450-002	A02MW010001 Diss	F1H240450-007
A02MW020001 Tot	F1H240450-003	A02MW020001 Diss	F1H240450-008

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in

conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	X	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

All results are reported without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/23/2011. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 1238069 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F1H260000-069B	0.021	0.029	0.045	1.452
U-235	F1H260000-069B	0.004	0.019	0.047	0.471
U-238	F1H260000-069B	0.004	0.015	0.038	0.471

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch

1238069 are summarized below. The laboratory did not analyze a LCSD because a MS/MSD pair was analyzed.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 93.8% and 99.2% respectively. U-235 is not a spiked isotope. All LCS/LCSD recoveries are within the QAPP acceptance criteria; 75-131%.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

Guterl Steel sample A03MW703DD0001 Diss (F1H230464-10) reported in laboratory data package F1H230464) was analyzed as the batch 1238069 MS/MSD pair. All MS/MSD recoveries were within the QAPP acceptance criteria, 59-150%. U-235 is not part of the MS/MSD spike solution.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H240450.

No results are qualified based upon the absence of field duplicate results.

Laboratory Duplicates

The laboratory analyzed sample A03MW703DD0001 Diss (F1H230464-10) reported in laboratory data package F1H230464) as the laboratory MS/MSD pair for analytical batch 1238069. Results are summarized below.

Analyte	A03MW703DD0001 Diss MS			A03MW703DD0001 Diss MSD		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	3.115	0.450	0.057	2.712	0.397	0.062
U-235	0.130	0.085	0.061	0.090	0.069	0.064
U-238	3.176	0.455	0.049	2.837	0.408	0.051

TPU – Total Propagated Uncertainty

No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks for the field samples are properly identified, well defined and adequately resolved.

No results are qualified due to spectral resolution.

Calculations

The U-232 tracer recovery for A02MW9005 Tot (F1H240450-001) Batch 1238069

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 308
U-232 Tracer Background Counts: 1.500
U-232 Tracer net counts: 306.50
Count Time: 240 minutes
Detector Efficiency: 26.47%

U-232 Tracer recovered = (306.50)/(240)(0.2647) = 4.824 DPM
U-232 Tracer % Recovery = (4.824 DPM/7.155 DPM) * 100 = 67.42%. The laboratory reported 67.46%.

The U-234 concentration for A02MW9005 Tot (F1H240450-001) Batch 1238069

U-234 gross counts: 1039
U-234 background counts: 1.750
U-234 net counts: 137.25
Count time: 240 minutes
Detector Efficiency: 26.47%
Tracer Recovery: 67.46%
Sample volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (1037.25)/(2.22)(1.000)(240)(0.2647)(0.6745) = 10.90 pCi/L. The laboratory reported 10.90 pCi/L

Table 1 summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F1H240450

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A02MW9005 Tot	Aqueous	A
A02MW010001 Tot	Aqueous	A
A02MW020001 Tot	Aqueous	A
A02MW9005 Diss	Aqueous	A
A02MW010001 Diss	Aqueous	A
A02MW020001 Diss	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 14, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1H240450
Site Name: Guterl Steel
Samples Collected: 08/23/2011
7 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A02MW9005 Tot	F1H240450-001	A02MW9005 Diss	F1H240450-005
A02MW010001 Tot	F1H240450-002	A02MW010001 Diss	F1H240450-006
A02MW020001 Tot	F1H240450-003	A02MW020001 Diss	F1H240450-007
A04BMW707DD0001	F1H240450-004		

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
X		ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

The condition upon receipt form indicates that all aqueous metal samples were properly preserved except for A04BMW707DD0001 Tot. The laboratory noted that this sample was received at an improper pH. The laboratory added sufficient nitric acid to lower the pH to < 2. The pH was adjusted on 08/24/2011 and the sample was prepared for analysis on 08/25/2011.

The ICP-MS serial dilution % difference was 20.3%. Uranium results for A02MW9005 Tot, A02MW010001 Tot, A02MW020001 Tot, A02MW9005 Diss, A02MW010001 Diss and A02MW020001 Diss are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased high. Sample A04BMW707DD0001 Tot was analyzed at a 5 X dilution. Using professional judgment the uranium result for A04BMW707DD0001 Tot was not qualified.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

Sample A04BMW707DD0001 Tot was analyzed at a 5X dilution.

All results are accepted without qualification. All total and dissolved results agree within 20%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates were recorded for all field samples. Sampling times were not recorded for samples A02MW9005 Total and Dissolved and A04BMW707DD0001. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/23/2011. The condition upon receipt form indicates that all aqueous metal samples were properly preserved except for A04BMW707DD0001 Tot. The laboratory noted that this sample was received at an improper pH. The laboratory added sufficient nitric acid to lower the pH to < 2. The pH was adjusted on 08/24/2011 and the sample was prepared for analysis on 08/25/2011.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recoveries were 102.7% and 98.0%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A02MW9005 Tot was analyzed as the MS/MSD pair associated with preparation batch 1237036. The MS/MSD recoveries are 109% and 107% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample A02MW9005 Tot was analyzed as the MS/MSD pair associated with preparation batch 1237036. The MS/MSD RPD is 2.0%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1H240450.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample A02MW9005 Tot was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
Uranium	40.1	31.9	20.3%	J+

Uranium results for A02MW9005 Tot, A02MW010001 Tot, A02MW020001 Tot, A02MW9005 Diss, A02MW010001 Diss and A02MW020001 Diss are qualified as estimated (J). Matrix interferences are indicated. The reported results may be biased high. Sample A04BMW707DD0001 Tot was analyzed at a 5 X dilution. Using professional judgment the uranium result for A04BMW707DD0001 Tot was not qualified.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All total and dissolved results agree within 20%.

Sample A04BMW707DD0001 Tot was analyzed at a 5X dilution.

Calculations

Sample A02MW9005 Tot, reported in laboratory data package F1H240450, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 40.1 ug/L
MS uranium concentration: 1130 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1130 ug/L – 40.1 ug/L)/ 1000 ug/L)) * 100 = 109%. The laboratory reported 109.2%.

Serial Dilution:
Sample uranium concentration: 40.1 ug/L
Serial dilution concentration of the 5X dilution: 31.9 ug/L
ICP-MS Serial Dilution Percent Difference = ((40.1-31.9)/(40.1) * 100 = 20.4%. The laboratory reported 20.3%. The uranium IDL is 0.23 ug/L.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1H240450

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A02MW9005 Tot	Aqueous	J[1]
A02MW010001 Tot	Aqueous	J[1]
A02MW020001 Tot	Aqueous	J[1]
A04BMW707DD0001	Aqueous	A
A02MW9005 Diss	Aqueous	J[1]
A02MW010001 Diss	Aqueous	J[1]
A02MW020001 Diss	Aqueous	J[1]

A - Accept all data without qualification.

J[1]- The uranium result is qualified as estimated (J). The ICP-MS serial dilution %D exceeds 10%. The reported result may be biased high.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 19, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1I010435
Site Name: Guterl Steel
Samples Collected: 08/31/2011
2 Aqueous Samples and 2 Solid Samples

Isotopic Thorium and Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
AQUEOUS IDW	F1I010435-001	NON-AQUEOUS IDW	F1I010435-002
AQUEOUS IDW DUP	F1I010435-001X	NON-AQUEOUS IDW DUP	F1I010435-002X

DUP- Laboratory Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium and isotopic thorium analytical data from aqueous and solid samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy (EML A-01-R-MOD), according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are Th-228, Th-230, Th-232, U-234, U-235 and U-238. The solid sample results are reported on a dry weight basis.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in

conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
X		Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the isotopic thorium and isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Using professional judgment the Th-230 results for AQUEOUS IDW and AQUEOUS IDW DUP are qualified as estimated (J). These Th-230 results are summarized below. Statistically these results are equal to the positive method blank result. Both the positive sample results and positive method blank results are less than the laboratory reporting limit 0.10 pCi/L.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 08/31/2011. The condition upon receipt form indicates that aqueous radionuclide samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Solid method blank results associated with preparation batches 1249210 and 1249211 are summarized below.

Radionuclide	Sample ID	Conc pCi/g	Total Uncertainty pCi/g	MDC pCi/g	Z-Factor
Th-228	F1I060000-210B	0.024	0.021	0.025	2.2251
Th-230	F1I060000-210B	0.021	0.020	0.023	2.0952
Th-232	F1I060000-210B	-0.001	0.002	0.018	-0.9991
U-234	F1I060000-211B	-0.0009	0.0086	0.026	-0.2182
U-235	F1I060000-211B	-0.0023	0.0033	0.025	-1.4117
U-238	F1I060000-211B	0.008	0.011	0.010	1.4117

MDC- Minimal Detectable Concentration

All method blank results are reported as non-detected (U).

Aqueous method blank results associated with preparation batches 1251056 and 1251057 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDC pCi/L	Z-Factor
Th-228	F1I080000-056B	0.012	0.023	0.041	1.0399
Th-230	F1I080000-056B	0.085	0.053	0.036	3.2027
Th-232	F1I080000-056B	-0.0020	0.0039	0.036	-0.9991
U-234	F1I080000-057B	0.058	0.050	0.059	2.3300
U-235	F1I080000-057B	-0.0053	0.0076	0.057	-1.4117
U-238	F1I080000-057B	0.017	0.024	0.023	1.4117

MDC- Minimal Detectable Concentration

Using professional judgment the Th-230 results for AQUEOUS IDW and AQUEOUS IDW DUP are qualified as estimated (J). These Th-230 results are summarized below

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDC pCi/L
Th-230	AQUEOUS IDW	0.077	0.050	0.036
Th-230	AQUEOUS IDW DUP	0.098	0.064	0.045

Statistically these results are equal to the positive method blank result. Both the positive sample results and positive method blank results are less than the laboratory reporting limit 0.10 pCi/L.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batches 1249210, 1249211, 1251056 and 1251057 are summarized below. The laboratory did not analyze a LCSD. The laboratory did analyze a laboratory duplicate pair for each isotope in each matrix.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

All LCS recoveries are within the QAPP acceptance criteria and the laboratory derived acceptance criteria. U-235, Th-228 and Th-232 are not LCS spiked isotopes.

No results are qualified based upon the LCS recoveries.

Matrix Spike Sample Results

No MS/MSDs were analyzed. The laboratory analyzed a LCS and laboratory duplicate samples for each sample matrix.

No results are qualified due to the absence of MS/MSD results.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1I010435.

No results are qualified based upon the absence of field duplicate results.

Laboratory Duplicates

The laboratory analyzed aqueous sample AQUEOUS IDW (F1I010435-001) as the laboratory duplicate pair for analytical batches 1251056 and 1251057. Results are summarized below.

Analyte	AQUEOUS IDW			AQUEOUS IDW DUP		
	Result pCi/L	TPU	MDC	Result pCi/L	TPU	MDC
Th-228	0.022 U	0.028	0.036	0.037 U	0.040	0.045
Th-230	0.077 J	0.050	0.036	0.098 J	0.064	0.045
Th-232	0.028 U	0.032	0.039	0.017 U	0.029	0.045
U-234	0.102	0.062	0.054	0.093	0.063	0.052
U-235	0.011 U	0.021	0.029	0.003 U	0.027	0.072
U-238	0.082	0.054	0.038	0.088	0.063	0.062

TPU – Total Propagated Uncertainty

No aqueous results are qualified based upon the laboratory duplicate precision.

The laboratory analyzed solid sample NON-AQUEOUS IDW (F1I010435-002) as the laboratory duplicate pair for analytical batches 1249210 and 1249211. Results are summarized below.

Analyte	NON-AQUEOUS IDW			NON-AQUEOUS IDW DUP		
	Result pCi/g	TPU	MDC	Result pCi/g	TPU	MDC
Th-228	0.355	0.105	0.048	0.318	0.096	0.048
Th-230	0.400	0.111	0.030	0.379	0.130	0.029
Th-232	0.259	0.088	0.032	0.244	0.081	0.029
U-234	0.337	0.079	0.021	0.303	0.073	0.017
U-235	0.009 U	0.014	0.023	0.014	0.016	0.013
U-238	0.322	0.077	0.011	0.417	0.087	0.010

TPU – Total Propagated Uncertainty

No solid results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks for the field samples are properly identified, well defined and adequately resolved.

No results are qualified due to spectral resolution.

Calculations

The U-232 tracer recovery for NON-AQUEOUS IDW (F1I010435-002) Batch 1249211

U-232 Tracer concentration: 71.55 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.155 DPM
U-232 Tracer Gross Counts: 405
U-232 Tracer Background Counts: 0.5000
U-232 Tracer net counts: 404.50
Count Time: 240 minutes
Detector Efficiency: 28.11%

U-232 Tracer recovered = (404.50)/(240)(0.0.2811) = 5.995 DPM

U-232 Tracer % Recovery = (5.995 DPM/7.155 DPM) * 100 = 83.8%. The laboratory reported 83.9%.

The Th-229 tracer recovery for AQUEOUS IDW (F1I010435-001) Batch 1251056

Th-229 Tracer concentration: 63.40 DPM/mL (DPM = disintegrations/minute)
Th-229 Tracer volume: 0.10 mL
Th-229 Tracer added: 6.340 DPM
Th-229 Tracer Gross Counts: 363
Th-229 Tracer Background Counts: 0.000
Th-229 Tracer net counts: 363
Count Time: 240 minutes
Detector Efficiency: 27.43%

Th-229 Tracer recovered = (363)/(240)(0.2743) = 5.514 DPM
Th-229 Tracer % Recovery = (5.514 DPM/6.34 DPM) * 100 = 87.0%. The laboratory reported 87.3%.

The U-234 concentration for NON-AQUEOUS IDW (F1I010435-002) Batch 1249211

U-234 gross counts: 85
U-234 background counts: 0.500
U-234 net counts: 84.5
Count time: 240 minutes
Detector Efficiency: 28.11%
Tracer Recovery: 83.87%
Sample Mass: 2.000 grams
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (84.5)/(2.22)(2.000)(240)(0.2811)(0.8378) = 0.337 pCi/g. The laboratory reported 0.337 pCi/g

The Th-230 concentration for LCS (F1I080000-056C) Batch 1251056

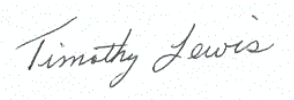
Th-230 gross counts: 292
Th-230 background counts: 0.500
Th-230 net counts: 291.50
Count time: 240 minutes
Detector Efficiency: 27.61%
Tracer Recovery: 89.11%
Sample Volume: 1.000 Liter
1 picocurie = 2.22 counts/minute

Th-230 Concentration: = (291.5)/(2.22)(1.000)(240)(0.2761)(0.89115) = 2.224 pCi/L. The laboratory reported 2.23 pCi/L. The laboratory spike concentration added is 2.37 pCi/L. The LCS calculated recovery is (2.22/2.37)* 100 = 93.6%. The laboratory reported the LCS Th-230 recovery at 94%.

Table 1summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 Thorium and Uranium Isotope results

Guterl Specialty Steel
F1I010435

Table 1 – Isotopic Thorium and Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
AQUEOUS IDW	Aqueous	J[1]
AQUEOUS IDW DUP	Aqueous	J[1]
NON-AQUEOUS IDW	Solid	A
NON-AQUEOUS IDW DUP	Solid	A

A - Accept all data without qualification.

J[1] - The Th-230 result is qualified as estimated (J) due to positive Th-230 method blank results.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 18, 2011

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F1I010435
Site Name: Guterl Steel
Samples Collected: 08/31/2011
3 Aqueous Samples

Total Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
AQUEOUS IDW	F1I010435-001	A04BMW707DD0001 Diss	F1I010435-004
A04BMW707DD0001 Tot	F1I010435-003		

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
X		Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The uranium result for AQUEOUS IDW is qualified as estimated (J). The reported result is between the method detection limit (MDL) and RL.

All total and dissolved results agree within 20%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

The COC noted that the A04BMW707DD0001 Tot sample bottle listed only total metals for analysis. This bottle was also logged in for total uranium.

Sample Preservation and Holding Times

Samples were collected on 08/31/2011. The condition upon receipt form indicates that all aqueous metal samples were properly preserved.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was 97.0%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample AQUEOUS IDW was analyzed as the MS/MSD pair associated with preparation batch 1249123. The MS/MSD recoveries are 106% and 107% respectively.

All MS/MSD recoveries were within the 75-125% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 30%.

Sample AQUEOUS IDW was analyzed as the MS/MSD pair associated with preparation batch 1249123. The MS/MSD relative percent difference is 1.0%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F1I010435.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-120%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. If the %D exceeds 10% results are qualified as estimated (J).

Sample AQUEOUS IDW was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
Uranium	0.28	1.2 U	NC	None

The uranium sample concentration is less than 50X the IDL. The concentration is too low to evaluate the serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The uranium result for AQUEOUS IDW is qualified as estimated (J). The reported result is between the method detection limit (MDL) and RL.

All total and dissolved results agree within 20%.

Calculations

Sample AQUEOUS IDW was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 0.28 ug/L
MS uranium concentration: 1060 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1060 ug/L – 0.28 ug/L)/ 1000 ug/L)) * 100 = 106%. The laboratory reported 105.6%.

Serial Dilution:
Sample uranium concentration: 0.28 ug/L
Serial dilution concentration of the 5X dilution: 1.2 ug/L (U)
ICP-MS Serial Dilution Percent Difference = Not Calculated. The ICP-MS serial dilution result is reported as non-detected (U) at 1.2 ug/L. The uranium IDL is 0.23 ug/L.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F1I010435

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
AQUEOUS IDW	Aqueous	J[1]
A04BMW707DD0001 Tot	Aqueous	A
A04BMW707DD0001 Diss	Aqueous	A

A - Accept all data without qualification.

J[1]- The uranium result is qualified as estimated (J). The reported result is between the MDL and RL.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

March 06, 2012

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F2B010413
Site Name: Guterl Steel
Samples Collected: 01/30/2012
8 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04DMW710D0002 Diss	F2B010413-001	A04DMW710D0002 Tot	F2B010413-005
A04DMW710DD0002 Diss	F2B010413-002	A04DMW710DD0002 Tot	F2B010413-006
A04DMW713D0002 Diss	F2B010413-003	A04DMW713D0002 Tot	F2B010413-007
A04DMW708DD0002 Diss	F2B010413-004	A04DMW708DD0002 Tot	F2B010413-008

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-*

Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004 and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	NA	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The minimal detectable concentrations (MDCs) are elevated for sample A04DMW708DD0002 Tot. As noted in the narrative "The Uranium sample did not meet the CRDL due to a reduced sample volume." The laboratory prepared 258.35 milliliters rather than 500 milliliters.

All isotopic uranium results are reported without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 01/30/2012. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 2033010 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F2B020000-010B	0.011	0.0205	0.037	1.028
U-235	F2B020000-010B	-0.0022	0.0044	0.040	-0.999
U-238	F2B020000-010B	-0.0018	0.0035	0.032	-0.999

MDA- Minimal Detectable Activity

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 2033010 are summarized below. The laboratory did analyze a LCSD because a MS/MSD pair was not analyzed.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 LCS/LCSD recoveries are 96.3% and 92.6% respectively. The U-238 LCS/LCSD recoveries are 104% and 93.2% respectively. U-235 is not a spiked isotope.

All LCS/LCSD recoveries are within the QAPP acceptance criteria.

Matrix Spike Sample Results

No MS/MSDs were analyzed. The laboratory analyzed a LCS/LCSD pair.

No results are qualified due to the absence of MS/MSD results.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F2B010413.

No results are qualified based upon the absence of field duplicate results.

Laboratory Duplicates

The LCS/LCSD results are evaluated as laboratory duplicate samples.

The laboratory analyzed samples F2B020000-010C/F2B020000-010L as the laboratory LCS/LCSD pair for analytical batch 2033010. Results are summarized below. U-235 is not a spiked isotope.

Analyte	F2B020000-010C			F2B020000-010L		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	3.153	0.405	0.0436	3.022	0.387	0.0417
U-235	0.173	0.082	0.0418	0.246	0.095	0.0238
U-238	3.533	0.323	0.0392	3.159	0.400	0.0509

TPU – Total Propagated Uncertainty

No results are qualified based upon the laboratory duplicate precision.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks for the field samples are properly identified, well defined and adequately resolved.

No results are qualified due to spectral resolution.

Calculations

The U-232 tracer recovery for A04DMW710D0002 Diss (F2B010413-001) Batch 2033010

U-232 Tracer concentration: 71.13 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.113 DPM
U-232 Tracer Gross Counts: 342.5
U-232 Tracer Background Counts: 0.500
U-232 Tracer net counts: 342
Count Time: 240 minutes
Detector Efficiency: 28.11%

U-232 Tracer recovered = (342.0)/(240)(0.2811) = 5.069 DPM

U-232 Tracer % Recovery = (5.069 DPM/7.113 DPM) * 100 = 71.27%. The laboratory reported 71.28%.

The U-234 concentration for A04DMW710D0002 Diss (F2B010413-001) Batch 2033010

U-234 gross counts: 925
U-234 background counts: 1.000
U-234 net counts: 924.0
Count time: 240 minutes
Detector Efficiency: 28.11%
Tracer Recovery: 71.28%
Sample volume: 0.500 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (925)/(2.22)(0.500)(240)(0.2811)(0.7128) = 17.33 pCi/L. The laboratory reported 17.34 pCi/L.

Total and dissolved results agree within 20%.

Table 1 summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F2B010413

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04DMW710D0002 Diss	Aqueous	A
A04DMW710DD0002 Diss	Aqueous	A
A04DMW713D0002 Diss	Aqueous	A
A04DMW708DD0002 Diss	Aqueous	A
A04DMW710D0002 Tot	Aqueous	A
A04DMW710DD0002 Tot	Aqueous	A
A04DMW713D0002 Tot	Aqueous	A
A04DMW708DD0002 Tot	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

March 08, 2012

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City, MO
Lab Work Order: F2B030480
Site Name: Guterl Steel
Samples Collected: 02/01/2012
14 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04BMW260002 Tot	F2B030480-001	A04BMW260002 Diss	F2B030480-008
A04BMW707DD0002 Tot	F2B030480-002	A04BMW707DD0002 Diss	F2B030480-009
A04BMW605D0002 Tot FD1	F2B030480-003	A04BMW605D0002 Diss FD2	F2B030480-010
A04DMW704DD0002 Tot	F2B030480-004	A04DMW704DD0002 Diss	F2B030480-011
A04BMW9006 Tot FD1	F2B030480-005	A04BMW9006 Diss FD2	F2B030480-012
A04DMW604D0002 Tot	F2B030480-006	A04DMW604D0002 Diss	F2B030480-013
A04DMW709DD0002 Tot	F2B030480-007	A04DMW709DD0002 Diss	F2B030480-014

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007,* the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	NA	Matrix Spike Results
	X	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution
X		Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The minimal detectable concentrations (MDCs) are elevated for samples A04BMW605D0002 Tot, A04BMW9006 Tot, A04BMW605D0002 Diss and A04BMW9006 Diss. As noted in the narrative "The Uranium sample did not meet the CRDL due to a reduced sample volume."

Using professional judgment the U-234 and U-238 results for A04BMW260002 Tot and A04BMW260002 Diss are qualified as estimated (J). These results are summarized below.

Analyte	A04BMW260002 Tot			A04BMW260002 Diss		
	Result pCi/L	**TPU**	**MDA**	**Result pCi/L**	**TPU**	**MDA**
U-234	39.7	3.7	0.1	48.4	4.5	0.1
U-238	38.3	3.6	0.05	48.4	4.5	0.1

The U-234 and U-238 results for the dissolved fractions are greater than the total fractions. The percent differences between the dissolved and total fractions exceed 20%.

Using professional judgment the U-234 results for A04BMW707DD0002 Tot and A04BMW707DD0002 Diss are qualified as estimated (J). These results are summarized below.

Analyte	A04DMW707DD0002 Tot			A04DMW707DD0002 Diss		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	7.76	0.98	0.08	14.5	1.6	0.1

The U-234 result for A04BMW707DD0002 Diss is nearly 2X the U-234 result for A04DMW707DD0002 Tot.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 02/01/2012. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time is 180 days. The analytical holding time was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Initial Calibration Verification Results

All criteria were met. All recoveries are within 95-105% of the initial calibrations.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 2038119 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F2B070000-119B	0.011	0.0208	0.038	1.028
U-235	F2B070000-119B	0.009	0.0178	0.024	0.999
U-238	F2B070000-119B	0.007	0.0142	0.019	0.999

MDA- Minimal Detectable Activity

Aqueous method blank results associated with preparation batch 2038127 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F2B070000-127B	0.0367	0.0332	0.020	2.226
U-235	F2B070000-127B	0.0092	0.0184	0.025	0.999
U-238	F2B070000-127B	0.0074	0.0148	0.020	0.999

MDA- Minimal Detectable Activity

The U-234 result for method blank F2B070000-127B is a positive result. The U-234 method blank result is significantly less than the sample concentrations.

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 2038119 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 100.4% and 104.0% respectively. U-235 is not a spiked isotope.

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 2038127 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 93.1% and 96.8% respectively. U-235 is not a spiked isotope.

All LCS recoveries are within the QAPP acceptance criteria.

Matrix Spike Sample Results

No MS/MSDs were analyzed. The laboratory analyzed laboratory duplicate pairs.

No results are qualified due to the absence of MS/MSD results.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Samples A04BMW605D0002 Tot and A04BMW9006 Tot are a field duplicate pair. Results are summarized below.

Analyte	A04BMW605D0002 Tot			A04BMW9006 Tot		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	87.3	7.9	0.2	101	9.2	0.2
U-235	3.59	0.75	0.09	5.3	1.0	0.2
U-238	91.0	8.3	0.1	99.8	9.1	0.2

TPU – Total Propagated Uncertainty

Samples A04BMW605D0002 Diss and A04BMW9006 Diss are a field duplicate pair. Results are summarized below.

Analyte	A04BMW605D0002 Diss			A04BMW9006 Diss		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	92.9	8.5	0.3	90.6	8.3	0.2
U-235	3.99	0.84	0.24	4.67	0.91	0.1
U-238	91.2	8.3	0.2	90.6	8.3	0.08

TPU – Total Propagated Uncertainty

No results are qualified based upon the field duplicate results. All relative percent differences (RPDs) are less than 40%.

Laboratory Duplicates

The laboratory analyzed sample A04DMW704DD0002 Tot (F2B030480-004) as the laboratory duplicate pair for analytical batch 2038119.

Analyte	A04DMW704DD0002 Tot			A04DMW704DD0002 Tot		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	29.8	2.8	0.03	25.9	2.4	0.07
U-235	1.2	0.28	0.08	1.26	0.27	0.03
U-238	23.8	2.3	0.07	21.5	2.0	0.09

TPU – Total Propagated Uncertainty

No results are qualified based upon the laboratory duplicate precision. The RPDs are less than 40%.

The laboratory analyzed sample A04DMW704DD0002 Diss (F2B030480-011) as the laboratory duplicate pair for analytical batch 2038127.

Analyte	A04DMW704DD0002 Diss			A04DMW704DD0002 Diss		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	26.3	2.5	0.08	30.0	2.8	0.09
U-235	1.15	0.27	0.04	1.26	0.29	0.08
U-238	22.6	2.1	0.06	24.1	2.3	0.08

TPU – Total Propagated Uncertainty

No results are qualified based upon the laboratory duplicate precision. The RPDs are less than 40%.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks for the field samples are properly identified, well defined and adequately resolved.

No results are qualified due to spectral resolution.

Calculations

The U-232 tracer recovery for A04BMW9006 Tot (F2B030480-005) Batch 2038119

U-232 Tracer concentration: 71.13 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.113 DPM
U-232 Tracer Gross Counts: 210
U-232 Tracer Background Counts: 1.75
U-232 Tracer net counts: 208.25
Count Time: 240 minutes
Detector Efficiency: 27.19%

U-232 Tracer recovered = (208.25)/(240)(0.2719) = 3.191 DPM
U-232 Tracer % Recovery = (3.191 DPM/7.113 DPM) * 100 = 44.86%. The laboratory reported 44.82%.

The U-234 concentration for A04BMW9006 Tot (F2B030480-005) Batch 2038119

U-234 gross counts: 3271
U-234 background counts: 0.5000
U-234 net counts: 3270.50
Count time: 240 minutes
Detector Efficiency: 27.19%
Tracer Recovery: 44.82%
Sample volume: 0.5003 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (3270.5)/(2.22)(0.5003)(240)(0.2719)(0.4482) = 100.6 pCi/L. The laboratory reported 100.9 pCi/L.

The U-232 tracer recovery for A04BMW9006 Diss (F2B030480-012) Batch 2038127

U-232 Tracer concentration: 71.13 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.113 DPM
U-232 Tracer Gross Counts: 223
U-232 Tracer Background Counts: 2.00
U-232 Tracer net counts: 221.00
Count Time: 240 minutes
Detector Efficiency: 27.86%

U-232 Tracer recovered = (221.00)/(240)(0.2786) = 3.305 DPM
U-232 Tracer % Recovery = (3.305 DPM/7.113 DPM) * 100 = 46.47%. The laboratory reported 44.42%.

The U-234 concentration for A04BMW9006 Diss (F2B030480-012) Batch 2038127

U-234 gross counts: 3115
U-234 background counts: 0.5000
U-234 net counts: 3114.50
Count time: 240 minutes
Detector Efficiency: 27.86%
Tracer Recovery: 46.42%
Sample volume: 0.5002 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (3114.5)/(2.22)(0.5002)(240)(0.2786)(0.4642) = 90.4 pCi/L. The laboratory reported 90.6 pCi/L.

Using professional judgment the U-234 and U-238 results for A04BMW260002 Tot and A04BMW260002 Diss are qualified as estimated (J). These results are summarized below.

Analyte	A04BMW260002 Tot			A04BMW260002 Diss		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	39.7	3.7	0.1	48.4	4.5	0.1
U-238	38.3	3.6	0.05	48.4	4.5	0.1

The U-234 and U-238 results for the dissolved fractions are greater than the total fractions. The percent differences between the dissolved and total fractions exceed 20%.

Using professional judgment the U-234 results for A04BMW707DD0002 Tot and A04BMW707DD0002 Diss are qualified as estimated (J). These results are summarized below.

Analyte	A04DMW707DD0002 Tot			A04DMW707DD0002 Diss		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	7.76	0.98	0.08	14.5	1.6	0.1

The U-234 result for A04BMW707DD0002 Diss is nearly 2X the U-234 result for A04DMW707DD0002 Tot.

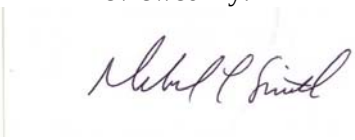
Table 1 summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F2B030480

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04BMW260002 Tot	Aqueous	J^1 J^2
A04BMW707DD0002 Tot	Aqueous	J^1
A04BMW605D0002 Tot FD 1	Aqueous	A
A04DMW704DD0002 Tot	Aqueous	A
A04BMW9006 Tot FD 1	Aqueous	A
A04DMW604D0002 Tot	Aqueous	A
A04DMW709DD0002 Tot	Aqueous	A
A04BMW260002 Diss	Aqueous	J^1 J^2
A04BMW707DD0002 Diss	Aqueous	J^1
A04BMW605D0002 Diss FD 2	Aqueous	A
A04DMW704DD0002 Diss	Aqueous	A
A04BMW9006 Diss FD 2	Aqueous	A
A04DMW604D0002 Diss	Aqueous	A
A04DMW709DD0002 Diss	Aqueous	A

A - Accept all data without qualification.

J^1 - Accept the U-234 result as estimated (J). The dissolved result is greater than the total result. The % difference between the dissolved and total result is greater than 20%.

J^2 - Accept the U-238 result as estimated (J). The dissolved result is greater than the total result. The % difference between the dissolved and total result is greater than 20%.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

March 09, 2012

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City MO
Lab Work Order: F2B010413
Site Name: Guterl Steel
Samples Collected: 01/30/2012
8 Aqueous Samples

Total and Dissolved Uranium

Samples Collected: (Client IDs)

Sample ID	Sample ID	Sample ID	Sample ID
A04DMW710D0002 Diss	F2B010413-001	A04DMW710D0002 Tot	F2B010413-005
A04DMW710DD0002 Diss	F2B010413-002	A04DMW710DD0002 Tot	F2B010413-006
A04DMW713D0002 Diss	F2B010413-003	A04DMW713D0002 Tot	F2B010413-007
A04DMW708DD0002 Diss	F2B010413-004	A04DMW708DD0002 Tot	F2B010413-008

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
X		ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
X		Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

The uranium results for A04DMW710D0002 Diss, A04DMW710DD0002 Diss, A04DMW713D0002 Diss, A04DMW708DD0002 Diss, A04DMW710D0002 Tot, A04DMW710DD0002 Tot, A04DMW713D0002 Tot and A04DMW708DD0002 Tot are qualified as estimated (J). The ICP-MS serial dilution % Difference is 11.2%. The reported results may be biased high.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The uranium result for A04DMW713D0002 Diss is qualified as estimated (J). The reported result is between the MDL (0.23 ug/L) and 2X the MDL.

All total and dissolved results agree within 20%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 01/30/2012. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery was is 97.3%

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04DMW710D0002 Diss was analyzed as the MS/MSD pair associated with preparation batch 2034044. The MS/MSD recoveries are 108.4% and 108.7% respectively.

All MS/MSD recoveries were within the 70-130% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 20%.

Sample A04DMW710D0002 Diss was analyzed as the MS/MSD pair associated with preparation batch 2034044. The MS/MSD RPD is 0.25%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

No field duplicate pair was reported in laboratory data package F2B010413.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 80-115%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. The IDL is 0.23 ug/L. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04DMW710D0002 Diss was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
Uranium	57.8	51.3	11.2%	J

All uranium results are qualified as estimated (J) based upon ICP-MS serial dilution results. The reported results may be biased high.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The uranium result for A04DMW713D0002 Diss is qualified as estimated (J). The reported result is between the MDL (0.23 ug/L) and 2X the MDL.

All total and dissolved results agree within 20%.

Calculations

Sample A04DMW710D0002 Diss, reported in laboratory data package F2B010413, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 57.8 ug/L
MS uranium concentration: 1140 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1140 ug/L – 57.8 ug/L)/ 1000 ug/L)) * 100 = 108.2%. The laboratory reported 108.4%.

Serial Dilution:
Sample uranium concentration: 57.8 ug/L
Serial dilution concentration of the 5X dilution: 51.3 ug/L
ICP-MS Serial Dilution Percent Difference = ((57.8-51.3)/(57.8) * 100 = 11.2%. The laboratory reported 11.2%.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F2B010413

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04DMW710D0002 Diss	Aqueous	J^1
A04DMW710DD0002 Diss	Aqueous	J^1
A04DMW713D0002 Diss	Aqueous	J^1 J^2
A04DMW708DD0002 Diss	Aqueous	J^1
A04DMW710D0002 Tot	Aqueous	J^1
A04DMW710DD0002 Tot	Aqueous	J^1
A04DMW713D0002 Tot	Aqueous	J^1
A04DMW708DD0002 Tot	Aqueous	J^1

A - Accept all data without qualification.

J^1 Accept the uranium result as estimated (J). The ICP-MS serial dilution % Difference exceeds 10%. The reported results may be biased high.

J^2 Accept the uranium result as estimated (J). The reported result is between the MDL and 2X the MDL.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

March 04, 2012

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City, MO
Lab Work Order: F2B030480
Site Name: Guterl Steel
Samples Collected: 02/01/2012
14 Aqueous Samples

Total and Dissolved Uranium

Sample ID	Sample ID	Sample ID	Sample ID
A04BMW260002 Tot	F2B030480-001	A04BMW260002 Diss	F2B030480-008
A04BMW707DD0002 Tot	F2B030480-002	A04BMW707DD0002 Diss	F2B030480-009
A04BMW605D0002 Tot FD1	F2B030480-003	A04BMW605D0002 Diss FD2	F2B030480-010
A04DMW704DD0002 Tot	F2B030480-004	A04DMW704DD0002 Diss	F2B030480-011
A04BMW9006 Tot FD1	F2B030480-005	A04BMW9006 Diss FD2	F2B030480-012
A04DMW604D0002 Tot	F2B030480-006	A04DMW604D0002 Diss	F2B030480-013
A04DMW709DD0002 Tot	F2B030480-007	A04DMW709DD0002 Diss	F2B030480-014

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September*

2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45 and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	NA	Field Duplicate Precision
X		ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

The uranium results for all samples are qualified as estimated (J). The ICP-MS serial dilution % Difference is 14.2%. The reported uranium results may be biased high.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All total and dissolved results agree within 20%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 02/01/2012. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration was 1.0 ug/L. The CRDL recovery was is 90.0%

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL) 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04DMW704DD0002 Tot was analyzed as a MS/MSD pair associated with preparation batch 2037060. The MS/MSD recoveries are 107.9% and 119.6% respectively.

Sample A04DMW704DD0002 Diss was analyzed as a MS/MSD pair associated with preparation batch 2037060. The MS/MSD recoveries are 111.7% and 111.3% respectively.

All MS/MSD recoveries were within the 70-130% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 20%.

Sample A04DMW704DD0002 Tot was analyzed as a MS/MSD pair associated with preparation batch 2037060. The MS/MSD RPD is 9.6%.

Sample A04DMW704DD0002 Diss was analyzed as a MS/MSD pair associated with preparation batch 2037060. The MS/MSD RPD is 0.3%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

Samples A04BMW605D0002/A04BMW9006 total and dissolved fractions are two field duplicate pairs. The field duplicate RPDs are less than 50%. The RPDs are 0.3% and 0.7% respectively.

No results are qualified based upon the absence of field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 85-115%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. The IDL is 0.23 ug/L. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04DMW704DD0002 Tot was analyzed as the ICP-MS serial dilution sample. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
Uranium	81.3	69.7	14.2%	J

All uranium results are qualified as estimated (J) based upon ICP-MS serial dilution results. The reported results may be biased high.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

All total and dissolved results agree within 20%.

Calculations

Sample A04DMW704DD0002 Tot, reported in laboratory data package F2B0030480, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 81.3 ug/L
MS uranium concentration: 1160 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1160 ug/L – 81.3 ug/L)/ 1000 ug/L)) * 100 = 107.92%. The laboratory reported 107.9%.

Serial Dilution:
Sample uranium concentration: 81.3 ug/L
Serial dilution concentration of the 5X dilution: 69.7 ug/L
ICP-MS Serial Dilution Percent Difference = ((81.3-69.7)/(81.3) * 100 = 14.2%. The laboratory reported 14.2%.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F2B030480

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04BMW260002 Tot	Aqueous	J[1]
A04BMW707DD0002 Tot	Aqueous	J[1]
A04BMW605D0002 Tot FD 1	Aqueous	J[1]
A04BMW704DD0002 Tot	Aqueous	J[1]
A04BMW9006 Tot FD 1	Aqueous	J[1]
A04DMW604D0002 Tot	Aqueous	J[1]
A04DMW709DD0002 Tot	Aqueous	J[1]
A04BMW260002 Diss	Aqueous	J[1]
A04BMW707DD0002 Diss	Aqueous	J[1]
A04BMW605D0002 Diss FD 2	Aqueous	J[1]
A04BMW704DD0002 Diss	Aqueous	J[1]
A04BMW9006 Diss FD 2	Aqueous	J[1]
A04DMW604D0002 Diss	Aqueous	J[1]
A04DMW709DD0002 Diss	Aqueous	J[1]

A - Accept all data without qualification.

J[1] Accept the uranium result as estimated (J). The ICP-MS serial dilution % Difference exceeds 10%. The reported results may be biased high.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

June 13, 2012

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City, MO
Lab Work Order: F2E080406
Site Name: Guterl Steel
Samples Collected: 05/03/2012 and 05/04/2012
22 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Lab ID	Sample ID	Lab ID
A04DMW710D0003 Tot	F2E080406-001	A04DMW710D0003 Diss	F2E080406-012
A04DMW710DD0003 Tot	F2E080406-002	A04DMW710DD0003 Diss	F2E080406-013
A04DMW713D0003 Tot	F2E080406-003	A04DMW713D0003 Diss	F2E080406-014
A04DMW708DD0003 Tot	F2E080406-004	A04DMW708DD0003 Diss	F2E080406-015
DUP-01 Tot FDUP	F2E080406-005	DUP-01 Diss	F2E080406-016
A04BMW605D0003 Tot FDUP	F2E080406-006	A04BMW605D0003 Diss FDUP	F2E080406-017
A04BMW704DD0003 Tot	F2E080406-007	A04BMW704DD0003 Diss	F2E080406-018
A04BMW707DD0003 Tot	F2E080406-008	A04BMW707DD0003 Diss	F2E080406-019
A04BMW260003 Tot	F2E080406-009	A04BMW260003 Diss	F2E080406-020
A04DMW604D0003 Tot	F2E080406-010	A04DMW604D0003 Diss	F2E080406-021
A04DMW709DD0003 Tot	F2E080406-011	A04DMW709DD0003 Diss	F2E080406-022

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America, Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240)*. The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	X	Matrix Spike Results
	X	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution
	X	Sample Quantitation Verification

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The laboratory narrative noted that all samples were prepared using 500 milliliter sample aliquots rather than 1.00 liter sample aliquots.

The minimal detectable concentrations (MDCs) are elevated for samples DUP-01 Tot, A04BMW605D0003 Tot, A04BMW260003 Tot, DUP-01 Diss and A04BMW605D0003 Diss. As noted in the narrative "The associated Uranium samples did not meet the client requested reporting limit due to the presence of the nuclide in the sample and reduced sample volume."

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present and intact on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 05/03/2012 and 05/04/2012. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 2130026 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Tota Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F2E090000-26B	-0.0019 U	0.0039	0.035	-0.9991
U-235	F2E090000-26B	-0.0048 U	0.0069	0.051	-1.4117
U-238	F2E090000-26B	0.021 U	0.027	0.035	1.586

MDA- Minimal Detectable Activity

Aqueous method blank results associated with preparation batch 2130027 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F2E090000-27B	0.015 U	0.029	0.052	1.0670
U-235	F2E090000-27B	-0.0064 U	0.0074	0.050	-1.7275
U-238	F2E090000-27B	0.007 U	0.020	0.044	0.6664

MDA- Minimal Detectable Activity

All method blank results are reported as non-detected (U).

No results are qualified based upon method blank results.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 2130026 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 93.6% and 101.8% respectively. U-235 is not a spiked isotope.

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 2130027 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 101.2% and 103.2% respectively. U-235 is not a spiked isotope.

All LCS recoveries are within the QAPP acceptance criteria.

Matrix Spike Sample Results

The laboratory analyzed samples A04DMW604D0003 Tot (F2E080406-010) and A04DMW604D0003 Diss (F2E080406-021) as matrix spike/matrix spike duplicate pairs. U-235 is not a spiked isotope. All MS/MSD recoveries are within the laboratory derived recovery acceptance criteria. The U-234 laboratory derived acceptance criteria are 65-146% and the U-238 laboratory acceptance criteria are 68-143%.

A04DMW604D0003 Tot		
Radionuclide	**MS % Rec**	**MSD % Rec**
U-234	100%	131%
U-238	91%	121%

A04DMW604D0003 Diss		
Radionuclide	**MS % Rec**	**MSD % Rec**
U-234	100%	76%
U-238	96%	97%

No results are qualified based upon MS/MSD recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Samples DUP-01 Tot and A04BMW605D0003 Tot are a field duplicate pair. Results are summarized below.

Analyte	**DUP-01 Tot**			**A04BMW605D0003 Tot**		
	Result pCi/L	**TPU**	**MDA**	**Result pCi/L**	**TPU**	**MDA**
U-234	87.9	8.0	0.2	86.2	7.9	0.2
U-235	4.51	0.88	0.1	4.09	0.84	0.19
U-238	89.5	8.2	0.2	87.8	8.0	0.2

TPU – Total Propagated Uncertainty

Samples DUP-01 Diss and A04BMW605D0003 Diss are a field duplicate pair. Results are summarized below.

Analyte	DUP-01 Diss			A04BMW605D0003 Diss		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	80.6	7.3	0.2	90.2	8.3	0.2
U-235	3.63	0.73	0.14	4.37	0.89	0.10
U-238	77.9	7.1	0.07	89.6	8.2	0.2

TPU – Total Propagated Uncertainty

No results are qualified based upon the field duplicate results. All relative percent differences (RPDs) are less than 50%.

Laboratory Duplicates

The matrix spike/matrix spike duplicate results (MS/MSD) were analyzed as the laboratory duplicate pair. The relative percent differences are calculated from sample concentrations.

The laboratory analyzed sample A04DMW604D0003 Tot (F2E080406-10) as the laboratory MS/MSD pair for analytical batch 2130026.

Analyte	A04DMW604D0003 Tot MS			A04DMW604D0003 Tot MSD		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	37.8	3.59	0.086	35.7	3.39	0.11
U-235	1.92	0.46	0.11	1.76	0.42	0.058
U-238	37.0	3.53	0.11	34.8	3.32	0.10

TPU – Total Propagated Uncertainty

No results are qualified based upon the MS/MSD duplicate precision. The relative percent differences (RPDs) are less than 40%.

The laboratory analyzed sample A04DMW604D0003 Tot (F2E080406-021) as the laboratory MS/MSD pair for analytical batch 2130027.

Analyte	A04DMW604D0003 Diss MSD			A04DMW604D0003 Diss MSD		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	36.0	3.44	0.15	37.6	3.60	0.16
U-235	1.54	0.40	0.11	2.38	0.53	0.13
U-238	36.5	3.48	0.051	36.4	3.50	0.15

TPU – Total Propagated Uncertainty

No results are qualified based upon the MS/MSD duplicate precision. The RPDs are less than 40%.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks for the field samples are properly identified, well defined and adequately resolved.

No results are qualified due to spectral resolution.

Calculations

The U-232 tracer recovery for A04DMW713D0003 Tot (F2E080406-003) Batch 2130026

U-232 Tracer concentration: 71.00 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.100 DPM
U-232 Tracer Gross Counts: 395
U-232 Tracer Background Counts: 0.50
U-232 Tracer net counts: 394.5
Count Time: 240 minutes
Detector Efficiency: 28.22%

U-232 Tracer recovered = (394.50)/(240)(0.2822) = 5.824 DPM
U-232 Tracer % Recovery = (5.824 DPM/7.100 DPM) * 100 = 82.03%. The laboratory reported 82.02%.

The U-234 concentration for A04DMW713D0003 Tot (F2E080406-003) Batch 2130026

U-234 gross counts: 5.00

U-234 background counts: 0.0000
U-234 net counts: 5.00
Count time: 240 minutes
Detector Efficiency: 28.22%
Tracer Recovery: 82.02%
Sample volume: 0.5002 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (5.00)/(2.22)(0.5002)(240)(0.2822)(0.8202) = 0.081 pCi/L. The laboratory reported 0.081 pCi/L.

The U-232 tracer recovery for A04DMW604D0003 Tot (F2E080406-010) Batch 2130026

U-232 Tracer concentration: 71.00 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.100 DPM
U-232 Tracer Gross Counts: 343
U-232 Tracer Background Counts: 0.750
U-232 Tracer net counts: 342.25
Count Time: 240 minutes
Detector Efficiency: 26.63%

U-232 Tracer recovered = (342.25)/(240)(0.2663) = 5.355 DPM
U-232 Tracer % Recovery = (5.355 DPM/7.100 DPM) * 100 = 75.42%. The laboratory reported 75.38%.

The U-238 concentration for A04DMW604D0003 Tot (F2E080406-010) Batch 2130026

U-238 gross counts: 1543
U-238 background counts: 1.500
U-238 net counts: 1541.50
Count time: 240 minutes
Detector Efficiency: 26.63%
Tracer Recovery: 75.42%
Sample volume: 0.5004 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (1541.5)/(2.22)(0.5004)(240)(0.2663)(0.7542) = 28.78 pCi/L. The laboratory reported 28.80 pCi/L.

The U-232 tracer recovery for A04BMW260003 Diss (F2E080406-020) Batch 2130027

U-232 Tracer concentration: 71.00 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.100 DPM
U-232 Tracer Gross Counts: 279
U-232 Tracer Background Counts: 5.750

U-232 Tracer net counts: 273.25
Count Time: 240 minutes
Detector Efficiency: 26.19%

U-232 Tracer recovered = (273.25)/(240)(0.2619) = 4.347 DPM
U-232 Tracer % Recovery = (4.347 DPM/7.100 DPM) * 100 = 61.23%. The laboratory reported 61.21%.

The U-238 concentration for A04BMW260003 Diss (F2E080406-020) Batch 2130027

U-238 gross counts: 2379
U-238 background counts: 0.250
U-238 net counts: 2378.75
Count time: 240 minutes
Detector Efficiency: 26.19%
Tracer Recovery: 61.22%
Sample volume: 0.5004 Liter
1 picocurie = 2.22 counts/minute

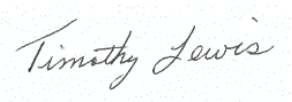
U-238 Concentration: = (2378.75)/(2.22)(0.5004)(240)(0.2619)(0.6122) = 55.65 pCi/L. The laboratory reported 55.67 pCi/L.

U-238 matrix spike recovery for A04DMW604D0003 Tot:
A04DMW604D0003 Tot U-238 concentration 28.8 pCi/L
A04DMW604D0003 Tot U-238 matrix spike concentration 37.02 pCi/L
U-238 spike concentration 6.7756 pCi/L
(37.02 pCi/L-28.8 pCi/L)/(6.7756 pCi/L) X 100 = 121.3%. The laboratory reported 121.2%.

Table 1 summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

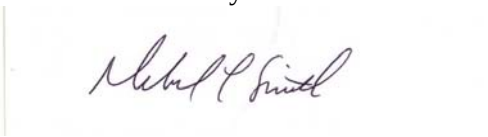
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

295 Lower Flying Point Road ✉ Freeport ME 04032
Phone: (207) 865-1256 ☎ Fax: (207) 865-1256💻 Electronic Mail: KestrelET@comcast.net

Guterl Specialty Steel
F2E080406

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04DMW710D0003 Tot	Aqueous	A
A04DMW710DD0003 Tot	Aqueous	A
A04DMW713D0003 Tot	Aqueous	A
A04DMW708DD0003 Tot	Aqueous	A
DUP-01 Tot FDUP	Aqueous	A
A04BMW605D0003 Tot FDUP	Aqueous	A
A04BMW704DD0003 Tot	Aqueous	A
A04BMW707DD0003 Tot	Aqueous	A
A04BMW260003 Tot	Aqueous	A
A04DMW604D0003 Tot	Aqueous	A
A04DMW709D0003 Tot	Aqueous	A
A04DMW710D0003 Diss	Aqueous	A
A04DMW710DD0003 Diss	Aqueous	A
A04DMW713D0003 Diss	Aqueous	A
A04DMW708DD0003 Diss	Aqueous	A
DUP-01 Diss FDUP	Aqueous	A
A04BMW605D0003 Diss FDUP	Aqueous	A
A04BMW704DD0003 Diss	Aqueous	A
A04BMW707DD0003 Diss	Aqueous	A
A04BMW260003 Diss	Aqueous	A
A04DMW604D0003 Diss	Aqueous	A
A04DMW709DD0003 Diss	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

June 12, 2012

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City, MO
Lab Work Order: F2E080406
Site Name: Guterl Steel
Samples Collected: 05/03/2012 and 05/04/2012
22 Aqueous Samples

Total and Dissolved Uranium

Sample ID	Lab ID	Sample ID	Lab ID
A04DMW710D0003 Tot	F2E080406-001	A04DMW710D0003 Diss	F2E080406-012
A04DMW710DD0003 Tot	F2E080406-002	A04DMW710DD0003 Diss	F2E080406-013
A04DMW713D0003 Tot	F2E080406-003	A04DMW713D0003 Diss	F2E080406-014
A04DMW708DD0003 Tot	F2E080406-004	A04DMW708DD0003 Diss	F2E080406-015
DUP-01 Tot FDUP	F2E080406-005	DUP-01 Diss	F2E080406-016
A04BMW605D0003 Tot FDUP	F2E080406-006	A04BMW605D0003 Diss FDUP	F2E080406-017
A04BMW704DD0003 Tot	F2E080406-007	A04BMW704DD0003 Diss	F2E080406-018
A04BMW707DD0003 Tot	F2E080406-008	A04BMW707DD0003 Diss	F2E080406-019
A04BMW260003 Tot	F2E080406-009	A04BMW260003 Diss	F2E080406-020
A04DMW604D0003 Tot	F2E080406-010	A04DMW604D0003 Diss	F2E080406-021
A04DMW709DD0003 Tot	F2E080406-011	A04DMW709DD0003 Diss	F2E080406-022

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America, Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of*

Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45 and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	X	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
X		Sample Quantitation Verification

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

Non-detected results are reported as non-detected (U) at the reporting limit (RL). The RL is adjusted for sample volume and sample dilution.

The uranium result for A04DMW713D0003 Tot is qualified as estimated (J). The reported result is between the method detection limit (MDL) and 2X the MDL.

All total and dissolved results agree within 20%.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples. Custody seals were present and intact on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 05/03/2012 and 05/04/2012. The condition upon receipt form indicates that aqueous metal samples were properly preserved. The pHs were < 2.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recovery is 93.4%

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL), 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04DMW604D0003 Tot was analyzed as a MS/MSD pair associated with preparation batch 2131079. The MS/MSD recoveries are 96.4% and 96.8% respectively.

Sample A04DMW604D0003 Diss was analyzed as a MS/MSD pair associated with preparation batch 2131080. The MS/MSD recoveries are 93.9% and 97.5% respectively.

All MS/MSD recoveries are within the 70-130% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 20%.

Sample A04DMW604D0003 Tot was analyzed as a MS/MSD pair associated with preparation batch 2131079. The MS/MSD RPD is 0.4%.

Sample A04DMW604D0003 Diss was analyzed as a MS/MSD pair associated with preparation batch 2131080. The MS/MSD RPD is 3.5%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are $\leq$ 50% relative percent difference (RPD) for field duplicate samples.

Samples A04BMW605D0003/DUP-01 total and dissolved fractions are two field duplicate pairs. The field duplicate RPDs are less than 50%. The RPDs are 0.4% and 2.3% respectively.

No results are qualified based upon the field duplicate results.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 85-115%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. The IDL is 0.23 ug/L. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04DMW604D0003 Tot was analyzed as the ICP-MS serial dilution sample with batch 2131079. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

Sample A04DMW604D0003 Diss was analyzed as the ICP-MS serial dilution sample with batch 2131080. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon the serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125% and the laboratory acceptance criteria of 80-120%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the RL. The RL is adjusted for sample volume and sample dilution.

All total and dissolved results agree within 20%.

The uranium result for A04DMW713D0003 Total is qualified as estimated (J). The reported result is between the MDL and 2X the MDL.

Calculations

Sample A04DMW604D0003 Tot, reported in laboratory data package F2E080406, was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 86.5 ug/L
MS uranium concentration: 1050 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1050 ug/L – 86.5 ug/L)/ 1000 ug/L)) * 100 = 96.4%. The laboratory reported 96.4%.

Serial Dilution:
Sample uranium concentration: 86.5 ug/L
Serial dilution concentration of the 5X dilution: 79.1 ug/L
ICP-MS Serial Dilution Percent Difference = ((86.5-79.1)/(86.5) * 100 = 8.55%. The laboratory reported 8.55%.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

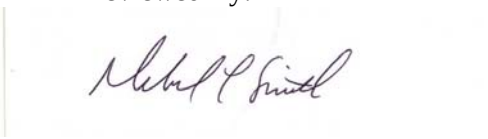
Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS US EPA 6020A

295 Lower Flying Point Road ✉ Freeport ME 04032
Phone: (207) 865-1256 ☎ Fax: (207) 865-1256 💻 Electronic Mail: KestrelET@comcast.net

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F2E080406

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04DMW710D0003 Tot	Aqueous	A
A04DMW710DD0003 Tot	Aqueous	A
A04DMW713D0003 Tot	Aqueous	J[1]
A04DMW708DD0003 Tot	Aqueous	A
DUP-01 Tot FDUP	Aqueous	A
A04BMW605D0003 Tot FDUP	Aqueous	A
A04BMW704DD0003 Tot	Aqueous	A
A04BMW707DD0003 Tot	Aqueous	A
A04BMW260003 Tot	Aqueous	A
A04DMW604D0003 Tot	Aqueous	A
A04DMW709D0003 Tot	Aqueous	A
A04DMW710D0003 Diss	Aqueous	A
A04DMW710DD0003 Diss	Aqueous	A
A04DMW713D0003 Diss	Aqueous	A
A04DMW708DD0003 Diss	Aqueous	A
DUP-01 Diss FDUP	Aqueous	A
A04BMW605D0003 Diss FDUP	Aqueous	A
A04BMW704DD0003 Diss	Aqueous	A
A04BMW707DD0003 Diss	Aqueous	A
A04BMW260003 Diss	Aqueous	A
A04DMW604D0003 Diss	Aqueous	A
A04DMW709DD0003 Diss	Aqueous	A

A - Accept all data without qualification.

J^1- Accept the uranium result as estimated (J). The reported result is between the MDL and 2X the MDL.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 01, 2012

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City, MO
Lab Work Order: F2H090401
Site Name: Guterl Steel
Samples Collected: 08/03/2012 and 08/06/2012
22 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Lab ID	Sample ID	Lab ID
A04DMW713D0004 Tot	F2H090401-001	A04DMW713D0004 Diss	F2H090401-012
A04DMW708DD0004 Tot	F2H090401-002	A04DMW708DD0004 Diss	F2H090401-013
A04BMW704DD0004 Tot	F2H090401-003	A04BMW704DD0004 Diss	F2H090401-014
A04BMW605D0004 Tot FDUP	F2H090401-004	A04BMW605D0004 Diss FDUP	F2H090401-015
A04BMW260004 Tot	F2H090401-005	A04BMW260004 Diss	F2H090401-016
A04BMW707DD0004 Tot	F2H090401-006	A04BMW707DD0004 Diss	F2H090401-017
A04DMW604D0004 Tot	F2H090401-007	A04DMW604D0004 Diss	F2H090401-018
A04DMW709DD0004 Tot	F2H090401-008	A04DMW709DD0004 Diss	F2H090401-019
A04DMW710D0004 Tot	F2H090401-009	A04DMW710D0004 Diss	F2H090401-020
A04DMW710DD0004 Tot	F2H090401-010	A04DMW710DD0004 Diss	F2H090401-021
DUPLICATE 02 FDUP Tot	F2H090401-011	DUPLICATE 02 FDUP Diss	F2H090401-022

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America, Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic*

Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240). The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	X	Matrix Spike Results
	X	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

The laboratory narrative noted that all samples were prepared using 500 milliliter sample aliquots except for sample A04BMW704DD0004. The sample volume for A04BMW704DD0004 is 100 milliliters because of high total solids. The minimal detectable concentration (MDC) for A04BMW704DD0004 is elevated.

Samples F2H090401-003-007, 007MS, 007MSD, 010, 011, 015, 016, 018MS, 018MSD and 020-022 were analyzed using 400 minute count times. All other samples were analyzed using 240 minute count times.

All isotopic uranium results are reported without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were not recorded for all field samples. The sampling time for A04DMW604D0004 is not reported on the COC.

Custody seals were present and intact on the sample coolers. Custody seals were not present on the sample containers.

The laboratory reported the sample ID for laboratory ID F2H090401-007 as A04DMW604DD004 Tot and F2H090401-018 as A04DMW604D0004 Diss. The field ID as reported on the COC is A04DMW604D004. The laboratory narrative noted that the ID on the sample bottles was A04DMW604D0004. The field samplers confirmed that the correct ID is A04DMW604D0004. The data validation memo uses A04DMW604D0004. The sample ID was corrected on the EDD.

The field samplers confirmed that 3 other sample IDs on the COC are incorrect. The incorrect IDs are A04DMW709DD004, A04DMW710D004 and A04DMW710DD004. The correct IDs are A04DMW709DD0004, A04DMW710D0004 and A04DMW710DD0004. The data validation memo used the correct IDs. The sample IDs were corrected on the EDD. These corrections apply to the total and dissolved fractions.

Sample Preservation and Holding Times

Samples were collected on 08/03/2012 and 08/06/2012. The condition upon receipt form indicates that the aqueous metal samples for were not properly preserved. Sample A04BMW704DD0004 had a pH of 7 at sample receipt. The laboratory adjusted the pH to < 2 with nitric acid and allowed the sample to equilibrate for 24 hours prior to sample preparation. All other sample pHs were < 2.

The analytical holding time for the isotopic analyses was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 2226014 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F2H130000-014B	0.013 U	0.022	0.035	1.217
U-235	F2H130000-014B	-0.0024 U	0.0048	0.043	-0.999
U-238	F2H130000-014B	0.0 U	0.0038	0.021	0.000

MDA- Minimal Detectable Activity

Aqueous method blank results associated with preparation batch 2226015 are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F2H130000-015B	0.006 U	0.016	0.035	0.727
U-235	F2H130000-015B	-0.0 U	0.0048	0.026	0.000
U-238	F2H130000-015B	0.006 U	0.016	0.035	0.727

MDA- Minimal Detectable Activity

All method blank results are reported as non-detected (U).

No results are qualified based upon method blank results.

No equipment field blank samples were submitted.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 2226014 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 109.8% and 99.7% respectively. U-235 is not a spiked isotope.

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 2226015 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 100.6% and 98.5% respectively. U-235 is not a spiked isotope.

All LCS recoveries are within the QAPP acceptance criteria.

Matrix Spike Sample Results

The laboratory analyzed samples A04DMW604D0004 Tot (F2H090401-007) and A04DMW604D0004 Diss (F2H090401-018) as matrix spike/matrix spike duplicate pairs. U-235 is not a spiked isotope. All MS/MSD recoveries are not within the laboratory derived recovery acceptance criteria. The U-234 laboratory derived acceptance criteria are 65-146% and the U-238 laboratory acceptance criteria are 68-143%.

A04DMW604D0004 Tot		
Radionuclide	MS % Rec	MSD % Rec
U-234	50%	135%
U-238	51%	118%

A04DMW604D0004 Diss		
Radionuclide	MS % Rec	MSD % Rec
U-234	90%	71%
U-238	109%	88%

The MS recoveries for U-234 and U-238 for sample A04DMW604D0004 Tot are below the laboratory derived acceptance criteria. The MSD recoveries for A04DMW604D0004 Tot are within the laboratory derived acceptance criteria. The MS and MSD U-232 tracer recoveries are acceptable. The laboratory noted that the native sample concentration is greater than 4X the U-234 and U-238 spike concentrations. All MS/MSD RPDs are less than 20%.
No results are qualified based upon MS/MSD recoveries.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Samples DUPLICATE 02 Tot (F2H090401-011) and A04BMW605D0004 Tot (F2H090401-04) are a field duplicate pair. Results are summarized below.

Analyte	DUPLICATE 02 Tot			A04BMW605D0004 Tot		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	80.5	7.1	0.1	85.8	7.6	0.1
U-235	3.88	0.65	0.06	3.75	0.66	0.06
U-238	78.7	7.0	0.09	82.6	7.3	0.05

TPU – Total Propagated Uncertainty

Samples DUPLICATE 02 Diss (F2H090401-022) and A04BMW605D0004 Diss (F2H090401-015) are a field duplicate pair. Results are summarized below.

Analyte	DUPLICATE 02 Diss			A04BMW605D0004 Diss		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	91.3	8.1	0.1	78.7	7.0	0.1
U-235	4.58	0.77	0.12	3.67	0.63	0.10
U-238	89.8	8.0	0.1	77.5	6.9	0.1

TPU – Total Propagated Uncertainty

No results are qualified based upon the field duplicate results. All relative percent differences (RPDs) are less than 50%.

Laboratory Duplicates

The matrix spike/matrix spike duplicate results (MS/MSD) were analyzed as the laboratory duplicate pair. The relative percent differences are calculated from sample concentrations.

The laboratory analyzed sample A04DMW604D0004 Tot (F2H090401-007) as the laboratory MS/MSD pair for analytical batch 2226014.

Analyte	A04DMW604D0004 Tot MS			A04DMW604D0004 Tot MSD		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	43.9	3.98	0.034	38.4	3.49	0.098
U-235	2.06	0.401	0.082	1.69	0.35	0.091
U-238	43.2	3.92	0.090	38.7	3.52	0.115

TPU – Total Propagated Uncertainty
No results are qualified based upon the MS/MSD duplicate precision. The relative percent differences (RPDs) are less than 40%.

The laboratory analyzed sample A04DMW604D0004 Diss (F2H090401-018) as the laboratory MS/MSD pair for analytical batch 2226015.

Analyte	A04DMW604D0004 Diss MS			A04DMW604D0004 Diss MSD		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	39.1	3.55	0.031	40.4	3.66	0.074
U-235	2.06	0.38	0.039	2.2	0.38	0.040
U-238	39.4	3.57	0.089	40.8	3.70	0.032

TPU – Total Propagated Uncertainty

No results are qualified based upon the MS/MSD duplicate precision. The RPDs are less than 40%.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks for the field samples are properly identified, well defined and adequately resolved.

No results are qualified due to spectral resolution.

Calculations

The U-232 tracer recovery for A04DMW713D0004 Tot (F2H090401-001) Batch 2226014

U-232 Tracer concentration: 70.87 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.09 DPM
U-232 Tracer Gross Counts: 380
U-232 Tracer Background Counts: 1.50
U-232 Tracer net counts: 378.5
Count Time: 240 minutes
Detector Efficiency: 26.99%

U-232 Tracer recovered = (378.50)/(240)(0.2699) = 5.843 DPM
U-232 Tracer % Recovery = (5.843 DPM/7.09 DPM) * 100 = 82.41%. The laboratory reported 82.46%.

The U-234 concentration for A04DMW713D0004 Tot (F2H090401-001) Batch 2226014

U-234 gross counts: 8.00
U-234 background counts: 0.5000
U-234 net counts: 7.5000
Count time: 240 minutes
Detector Efficiency: 26.99%
Tracer Recovery: 82.41%
Sample volume: 0.5001 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (7.500)/(2.22)(0.5001)(240)(0.2699)(0.8241) = 0.1263 pCi/L. The laboratory reported 0.1267 pCi/L.

The U-232 tracer recovery for DUPLICATE 02 Tot (F2H090401-011) Batch 2226014

U-232 Tracer concentration: 70.87 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.09 DPM
U-232 Tracer Gross Counts: 394
U-232 Tracer Background Counts: 2.917
U-232 Tracer net counts: 391.08
Count Time: 400 minutes
Detector Efficiency: 27.07%

U-232 Tracer recovered = (391.08)/(400)(0.2707) = 3.611 DPM
U-232 Tracer % Recovery = (3.611 DPM/7.09 DPM) * 100 = 50.94%. The laboratory reported 50.97%.

The U-238 concentration for DUPLICATE 02 Tot (F2H090401-011) Batch 2226014

U-238 gross counts: 4823
U-238 background counts: 0.4167

U-238 net counts: 4822.58
Count time: 400 minutes
Detector Efficiency: 27.07%
Tracer Recovery: 50.94%
Sample volume: 0.5004 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (4822.58)/(2.22)(0.5004)(400)(0.2707)(0.5094) = 78.70 pCi/L. The laboratory reported 78.66 pCi/L.

The U-232 tracer recovery for A04DMW604D0004 Diss (F2H090401-018) Batch 2226015

U-232 Tracer concentration: 70.87 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.09 DPM
U-232 Tracer Gross Counts: 349
U-232 Tracer Background Counts: 1.000
U-232 Tracer net counts: 348
Count Time: 240 minutes
Detector Efficiency: 27.32%

U-232 Tracer recovered = (348)/(240)(0.2732) = 5.307 DPM
U-232 Tracer % Recovery = (5.307 DPM/7.09 DPM) * 100 = 74.85%. The laboratory reported 74.90%.

The U-238 concentration for A04DMW604D0004 Diss (F2H090401-018) Batch 2226015

U-238 gross counts: 1826
U-238 background counts: 0.500
U-238 net counts: 1825.5
Count time: 240 minutes
Detector Efficiency: 27.32%
Tracer Recovery: 74.90%
Sample volume: 0.5004 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (1826.5)/(2.22)(0.5004)(240)(0.2732)(0.7485) = 33.50 pCi/L. The laboratory reported 33.46 pCi/L.

U-238 matrix spike recovery for A04DMW604D0004 Tot (F2H090401-007):
A04DMW604D0004 Tot (F2H090401-007) U-238 concentration 35.2 pCi/L
A04DMW604D0004 Tot (F2H090401-007S) U-238 matrix spike concentration 43.20 pCi/L
U-238 spike concentration 6.7756 pCi/L
(43.2 pCi/L-35.2 pCi/L)/(6.7756 pCi/L) X 100 = 118.1%. The laboratory reported 118.3%.

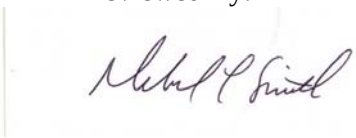
Table 1 summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F2H090401

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04DMW713D0004 Tot	Aqueous	A
A04DMW708DD0004 Tot	Aqueous	A
A04BMW704DD0004 Tot	Aqueous	A
A04BMW605D0004 Tot FDUP	Aqueous	A
A04BMW260004 Tot	Aqueous	A
A04BMW707DD0004 Tot	Aqueous	A
A04DMW604D0004 Tot	Aqueous	A
A04DMW709DD0004 Tot	Aqueous	A
A04DMW710D0004 Tot	Aqueous	A
A04DMW710DD0004 Tot	Aqueous	A
DUPLICATE 02 FDUP Tot	Aqueous	A
A04DMW713D0004 Diss	Aqueous	A
A04DMW708DD0004 Diss	Aqueous	A
A04BMW704DD0004 Diss	Aqueous	A
A04BMW605D0004 Diss FDUP	Aqueous	A
A04BMW260004 Diss	Aqueous	A
A04BMW707DD0004 Diss	Aqueous	A
A04DMW604D0004 Diss	Aqueous	A
A04DMW709DD0004 Diss	Aqueous	A
A04DMW710D0004 Diss	Aqueous	A
A04DMW710DD0004 Diss	Aqueous	A
DUPLICATE 02 FDUP Diss	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

October 09, 2012

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City, MO
Lab Work Order: F2H090401
Site Name: Guterl Steel
Samples Collected: 08/03/2012 and 08/06/2012
22 Aqueous Samples

Total and Dissolved Uranium

Sample ID	Lab ID	Sample ID	Lab ID
A04DMW713D0004 Tot	F2H090401-001	A04DMW713D0004 Diss	F2H090401-012
A04DMW708DD0004 Tot	F2H090401-002	A04DMW708DD0004 Diss	F2H090401-013
A04BMW704DD0004 Tot	F2H090401-003	A04BMW704DD0004 Diss	F2H090401-014
A04BMW605D0004 Tot FDUP	F2H090401-004	A04BMW605D0004 Diss FDUP	F2H090401-015
A04BMW260004 Tot	F2H090401-005	A04BMW260004 Diss	F2H090401-016
A04BMW707DD0004 Tot	F2H090401-006	A04BMW707DD0004 Diss	F2H090401-017
A04DMW604D0004 Tot	F2H090401-007	A04DMW604D0004 Diss	F2H090401-018
A04DMW709DD0004 Tot	F2H090401-008	A04DMW709DD0004 Diss	F2H090401-019
A04DMW710D0004 Tot	F2H090401-009	A04DMW710D0004 Diss	F2H090401-020
A04DMW710DD0004 Tot	F2H090401-010	A04DMW710DD0004 Diss	F2H090401-021
DUPLICATE 02 FDUP Tot	F2H090401-011	DUPLICATE 02 FDUP Diss	F2H090401-022

Tot- Total Diss- Dissolved (field filtered) FD- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America, Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	X	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

All results are reported without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were not recorded for all field samples. The sampling time for A04DMW604D0004 is not reported on the COC.

Custody seals were present and intact on the sample coolers. Custody seals were not present on the sample containers.

The laboratory reported the sample ID for laboratory ID F2H090401-007 as A04DMW604DD004 Tot and F2H090401-018 as A04DMW604D0004 Diss. The field ID as reported on the COC is A04DMW604D004. The laboratory narrative noted that the ID on the sample bottles was A04DMW604D0004. The field samplers confirmed that the correct ID is A04DMW604D0004. The data validation memo uses A04DMW604D0004. The sample ID was corrected on the EDD.

The COC noted that the laboratory did not receive a sample bottle for A04BMW707DD0004 total uranium. The client used an aliquot from the total isotopic uranium sample.

The field samplers confirmed that 3 other sample IDs on the COC were incorrect. The incorrect IDs are A04DMW709DD004, A04DMW710D004 and A04DMW710DD004. The correct IDs are A04DMW709DD0004, A04DMW710D0004 and A04DMW710DD0004. The data validation memo used the correct IDs. The sample IDs were corrected on the EDD. These corrections apply to both the total and dissolved fractions.

Sample Preservation and Holding Times

Samples were collected on 08/03/2012 and 08/06/2012. The condition upon receipt form indicates that the aqueous metal samples for were not properly preserved. Sample A04BMW704DD004 had a pH of 7 at sample receipt. The laboratory adjusted the pH to < 2 with nitric acid and allowed the sample to equilibrate for 24 hours prior to sample preparation. All other sample pHs were < 2.

The analytical holding time for ICP-MS analysis is 180 days. The analytical holding time was met. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recoveries were 100% and 96%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL), 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04DMW604D0004 Tot was analyzed as a MS/MSD pair associated with preparation batch 2223062. The MS/MSD recoveries are 97.6% and 99.3% respectively.

Sample A04DMW604D0004 Diss was analyzed as a MS/MSD pair associated with preparation batch 2223063. The MS/MSD recoveries are 97.0% and 96.8% respectively.

All MS/MSD recoveries are within the 70-130% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to

determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is ≤ 20%.

Sample A04DMW604D0004 Tot was analyzed as a MS/MSD pair associated with preparation batch 2223062. The MS/MSD RPD is 1.6%.

Sample A04DMW604D0004 Diss was analyzed as a MS/MSD pair associated with preparation batch 2223063. The MS/MSD RPD is 0.2%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Samples A04BMW605D0004 and DUPLICATE 02, total and dissolved fractions, are two field duplicate pairs. The field duplicate RPDs are less than 50%. The RPDs are 1.9% and 0.0% respectively.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 85-115%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. The IDL is 0.23 ug/L. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04DMW604D0004 Tot was analyzed as the ICP-MS serial dilution sample with batch 2223062. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

Sample A04DMW604D0004 Diss was analyzed as the ICP-MS serial dilution sample with batch 2223063. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon the serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the RL. The RL is adjusted for sample volume and sample dilution.

In those circumstances where dissolved results are greater than total results no total and dissolved results differ by more than 20%.

Calculations

Sample A04DMW604D0004 Tot (F2H090401-007), reported in laboratory data package F2H090401 (batch 2223062), was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 108 ug/L
MS uranium concentration: 1083 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1083 ug/L – 108 ug/L)/ 1000 ug/L)) * 100 = 97.5%. The laboratory reported 97.6%.

Serial Dilution:

Sample uranium concentration: 108 ug/L
Serial dilution concentration of the 5X dilution: (20.74 ug/L * 5) = 103.7 ug/L
ICP-MS Serial Dilution Percent Difference = ((108-103.7)/(108)) * 100 = 3.98%. The laboratory reported 3.94%.

Sample A04DMW604D0004 Diss (F2H090401-018), reported in laboratory data package F2H090401 (batch 2223063), was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Duplicate Recovery:
Sample uranium concentration: 105 ug/L
MS uranium concentration: 1073 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1073 ug/L – 105 ug/L)/ 1000 ug/L)) * 100 = 96.8%. The laboratory reported 96.8%.

Serial Dilution:

Sample uranium concentration: 105.1 ug/L
Serial dilution concentration of the 5X dilution: (21.36 ug/L * 5) = 106.8 ug/L
ICP-MS Serial Dilution Percent Difference = ((105.1-106.8)/(105.1)) * 100 = 1.7%. The laboratory reported 1.6%.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis

Timothy Lewis
Validator

Reviewed By:

Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS US EPA 6020A

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F2H090401

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04DMW713D0004 Tot	Aqueous	A
A04DMW708DD0004 Tot	Aqueous	A
A04BMW704DD0004 Tot	Aqueous	A
A04BMW605D0004 Tot FDUP	Aqueous	A
A04BMW260004 Tot	Aqueous	A
A04BMW707DD0004 Tot	Aqueous	A
A04DMW604D0004 Tot	Aqueous	A
A04DMW709DD0004 Tot	Aqueous	A
A04DMW710D0004 Tot	Aqueous	A
A04DMW710DD0004 Tot	Aqueous	A
DUPLICATE 02 FDUP Tot	Aqueous	A
A04DMW713D0004 Diss	Aqueous	A
A04DMW708DD0004 Diss	Aqueous	A
A04BMW704DD0004 Diss	Aqueous	A
A04BMW605D0004 Diss FDUP	Aqueous	A
A04BMW260004 Diss	Aqueous	A
A04BMW707DD0004 Diss	Aqueous	A
A04DMW604D0004 Diss	Aqueous	A
A04DMW709DD0004 Diss	Aqueous	A
A04DMW710D0004 Diss	Aqueous	A
A04DMW710DD0004 Diss	Aqueous	A
DUPLICATE 02 FDUP Diss	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 30, 2012

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City, MO
Lab Work Order: F2J250431
Site Name: Guterl Steel
Samples Collected: 10/22/2012, 10/23/2012 and 10/24/2012
22 Aqueous Samples

Isotopic Uranium

Samples Collected: (Client IDs)

Sample ID	Lab ID	Sample ID	Lab ID
A04BMW704DD0005 Tot	F2J250431-001	A04BMW704DD0005 Diss	F2J250431-012
A04DMW710D0005 Tot	F2J250431-002	A04DMW710D0005 Diss	F2J250431-013
A04DMW708DD0005 Tot	F2J250431-003	A04DMW708DD0005 Diss	F2J250431-014
A04DMW710DD0005 Tot	F2J250431-004	A04DMW710DD0005 Diss	F2J250431-015
A04DMW713D0005 Tot	F2J250431-005	A04DMW713D0005 Diss	F2J250431-016
A04DMW604D0005 Tot FDUP	F2J250431-006	A04DMW604D0005 Diss FDUP	F2J250431-017
DUPLICATE 03 Tot FDUP	F2J250431-007	DUPLICATE 03 Diss FDUP	F2J250431-018
A04DMW709DD0005 Tot	F2J250431-008	A04DMW709DD0005 Diss	F2J250431-019
A04BMW707DD0005 Tot	F2J250431-009	A04BMW707DD0005 Diss	F2J250431-020
A04BMW605D0005 Tot	F2J250431-010	A04BMW605D0005 Diss	F2J250431-021
A04BMW260005 Tot	F2J250431-011	A04BMW260005 Diss	F2J250431-022

Tot- Total Diss- Dissolved (field filtered) FDUP- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the isotopic uranium analytical data from total and dissolved samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America, Earth City, MO, reported that the samples were prepared in accordance with Department of Energy (DOE) Health and Safety Laboratories-300 (HASL) Alpha Spectroscopy according to laboratory standard operating procedure (SOP) *Isotopic*

Uranium, Americium, Curium, Plutonium, Thorium and Uranium in Various Matrices by EIChroM ® Separation Resins (STL-RC-240). The target radionuclides are U-234, U-235 and U-238. The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007*, the *Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP) 2004* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	Initial Calibrations
	X	Initial Calibration Verifications
	X	Daily Pulser Checks
	X	Blank Results
	X	Sample Specific Tracer Recoveries
	X	Laboratory Control Samples
	X	Matrix Spike Results
	X	Field Replicate Results
	X	Laboratory Duplicate Results
	X	Radionuclide Quantitation and Minimal Detectable Activities
	X	Spectrometry Resolution
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the total and dissolved isotopic uranium analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site. Dissolved samples were field filtered.

All samples were prepared using 500 milliliter sample aliquots.

Sample A04DMW713D0005 Tot was analyzed using an 800 minute count time. All other total sample aliquots were analyzed using 400 minute counts. All dissolved sample aliquots were analyzed using 600 minute count times.

The laboratory narrative noted that the contract required detection limits for A04BMW605D0005 Tot, A04BMW260005 Tot and A04BMW605D0005 Diss were not met. These samples had high activities above the minimal detectable concentration (MDC).

All isotopic uranium results are reported without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples except the blind field duplicate samples; DUPLICATE 03 Total and Dissolved fractions.

Custody seals were present and intact on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 10/22/2012, 10/23/2012 and 10/24/2012. The condition upon receipt form indicates that the aqueous metal samples for were not properly preserved. Sample A04DMW713D0005 Tot had a pH of 7 at sample receipt. The laboratory adjusted the pH to < 2 with nitric acid and allowed the sample to equilibrate for 24 hours prior to sample preparation. All other sample pHs were < 2.

The analytical holding time for the isotopic analyses was met.

No results are qualified based upon sample preservation and analytical holding times.

Initial Calibration Results

All criteria were met.

Alpha Spectroscopy Background

All criteria were met.

Daily Pulser Checks

All criteria were met.

Laboratory and Field Blank Analyses

Aqueous method blank results associated with preparation batch 2300025 total are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F2J260000-025B	0.0024	0.0089	0.022	0.5383
U-235	F2J260000-025B	0.010	0.015	0.014	1.4117
U-238	F2J260000-025B	0.0066	0.012	0.022	1.0729

MDA- Minimal Detectable Activity

Aqueous method blank results associated with preparation batch 2306013 dissolved are summarized below.

Radionuclide	Sample ID	Conc pCi/L	Total Uncertainty pCi/L	MDA pCi/L	Z-Factor
U-234	F2K010000-013B	0.0066	0.017	0.032	0.7785
U-235	F2K010000-013B	-0.0032	0.011	0.031	-0.5935
U-238	F2K010000-013B	-0.020	0.021	0.050	-1.9441

MDA- Minimal Detectable Activity

All method blank results are reported as non-detected (U).

No results are qualified based upon method blank results.

No equipment field blank samples were submitted.

Sample Specific Chemical Tracer Recoveries

The laboratory did tabulate the radioisotope tracer recoveries on the report of analyses form 1s. The tracer acceptance range is 40%-110%. Results associated with tracer recoveries less than 40% and greater than 20% are qualified as estimated (J). Results associated with tracer recoveries less than 20% are qualified as rejected (R). Tracer recoveries that are not within the 40%-110% acceptance criteria are summarized below.

Sample ID	Tracer Recovery
None	

No results are qualified based upon tracer recoveries.

Laboratory Control Samples

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 2300025 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 101.2% and 109.8% respectively. U-235 is not a spiked isotope.

LCS recoveries that exceed the laboratory derived acceptance criteria for preparation batch 2306013 are summarized below.

Radionuclide	STF ID	Lab ID	% Deviation Range	% Deviation
None				

The U-234 and U-238 LCS recoveries are 100.1% and 98.9% respectively. U-235 is not a spiked isotope.

All LCS recoveries are within the QAPP acceptance criteria. The laboratory derived acceptance criteria are 84-120% for U-234 and 83-121% for U-238.

Matrix Spike Sample Results

The laboratory analyzed samples A04DMW604D0005 Tot (F2J250431-006) and A04DMW604D0005 Diss (F2J250431-017) as matrix spike/matrix spike duplicate pairs. U-235 is not a spiked isotope. All MS/MSD recoveries are not within the laboratory derived recovery acceptance criteria. The U-234 laboratory derived acceptance criteria are 65-146% and the U-238 laboratory acceptance criteria are 68-143%.

A04DMW604D0005 Tot		
Radionuclide	**MS % Rec**	**MSD % Rec**
U-234	74.4%	79.3%
U-238	94.4%	101.1%

A04DMW604D0005 Diss		
Radionuclide	**MS % Rec**	**MSD % Rec**
U-234	150.4%	144.4%
U-238	120.9%	152.6%

The MS recovery for U-234 for sample A04DMW604D0005 Diss is above the laboratory derived acceptance criteria. The MSD recovery for U-238 for sample A04DMW604D0005 Diss is above the laboratory derived acceptance criteria. The MS and MSD U-232 tracer recoveries are acceptable. The laboratory noted that the native sample concentration is greater than 4X the U-234 and U-238 spike concentrations.

Using professional judgment no results are qualified based upon MS/MSD recoveries. Trace recoveries were within the acceptance criteria and the MS/MSD results for the total fractions are within the method acceptance criteria.

The laboratory re-extracted and re-analyzed the sample batch associated the high MS/MSDs. All results are reported from the re-extraction re-analyses.

All MS/MSD RPDs are less than 20%.

Field Replicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Samples DUPLICATE 03 Tot (F2J250431-007) and A04DMW604D0005 Tot (F2J250431-006) are a field duplicate pair. Results are summarized below.

Analyte	DUPLICATE 03 Tot			A04DMW604D0005 Tot		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	33.6	3.1	0.092	36.1	3.3	0.077
U-235	2.1	0.38	0.086	1.65	0.35	0.042
U-238	34.5	3.2	0.078	35.4	3.3	0.065

TPU – Total Propagated Uncertainty

Samples DUPLICATE 03 Diss (F2J250431-018) and A04DMW604D0005 Diss (F2J250431-017) are a field duplicate pair. Results are summarized below.

Analyte	DUPLICATE 03 Diss			A04DMW604D0005 Diss		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	34.6	3.1	0.058	32.2	2.9	0.059
U-235	1.8	0.29	0.023	1.7	0.28	0.064
U-238	34.3	3.0	0.050	32.6	2.9	0.058

TPU – Total Propagated Uncertainty

No results are qualified based upon the field duplicate results. All relative percent differences (RPDs) are less than 50%.

Laboratory Duplicates

The matrix spike/matrix spike duplicate results (MS/MSD) were analyzed as the laboratory duplicate pair. The relative percent differences are calculated from sample concentrations.

The laboratory analyzed sample A04DMW604D0005 Tot (F2J250431-006) as the laboratory MS/MSD pair for analytical batch 2300025.

Analyte	A04DMW604D0005 Tot MS			A04DMW604D0005 Tot MSD		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	41.0	3.73	0.099	41.3	3.76	0.097
U-235	2.11	0.41	0.083	2.46	0.44	0.098
U-238	41.8	3.80	0.098	42.3	3.84	0.129

TPU – Total Propagated Uncertainty

No results are qualified based upon the MS/MSD duplicate precision. The relative percent differences (RPDs) are less than 40%.

The laboratory analyzed sample A04DMW604D0005 Diss (F2J250431-017) as the laboratory MS/MSD pair for analytical batch 2306013.

Analyte	A04DMW604D0005 Diss MS			A04DMW604D0005Diss MSD		
	Result pCi/L	TPU	MDA	Result pCi/L	TPU	MDA
U-234	42.0	3.72	0.022	41.6	3.69	0.062
U-235	2.11	0.34	0.028	1.97	0.33	0.028
U-238	40.8	3.62	0.061	43.0	3.80	0.022

TPU – Total Propagated Uncertainty

No results are qualified based upon the MS/MSD duplicate precision. The RPDs are less than 40%.

Radionuclide Quantitation and Implied Detection Limits

The laboratory reported the results with analytical uncertainties.

Some results are reported as negative results. Based upon *US Army Corp Guidance "USACE, RADIONUCLIDE DATA QUALITY EVALUATION GUIDANCE, May 2009"* "Negative results that have uncertainties greater than the absolute value of the result, qualify the result "U" and "for negative results that have uncertainties smaller than their absolute value, qualify the data "R" as rejected." These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

All reported negative results are qualified as non-detected (U) or non-detected estimated (UJ). No negative results are qualified based upon the analytical uncertainties.

If a result is greater than its MDA, but less than its uncertainty, the probability that the result is greater than the MDA is greater than the probability that the result is less than the MDA. These results are qualified as estimated (J). These results are summarized below.

Sample ID	Radionuclide	Result pCi/L	2 Sigma	MDA
None				

Spectrometry Resolution

Alpha spectra for all field samples and QC samples were reviewed. Peaks for the field samples are properly identified, well defined and adequately resolved.

No results are qualified due to spectral resolution.

Calculations

The U-232 tracer recovery for A04DMW708DD0005 Tot (F2J250431-003) Batch 2300025

U-232 Tracer concentration: 70.78 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.08 DPM
U-232 Tracer Gross Counts: 628
U-232 Tracer Background Counts: 0.4167
U-232 Tracer net counts: 627.5
Count Time: 400 minutes
Detector Efficiency: 27.73%

U-232 Tracer recovered = (627.50)/(400)(0.2773) = 5.657 DPM
U-232 Tracer % Recovery = (5.657 DPM/7.08 DPM) * 100 = 79.90%. The laboratory reported 80.00%.

The U-234 concentration for A04DMW708DD0005 Tot (F2J250431-003) Batch 2300025

U-234 gross counts: 651
U-234 background counts: 2.9167
U-234 net counts: 648
Count time: 400 minutes
Detector Efficiency: 27.73%
Tracer Recovery: 80.00%
Sample volume: 0.5003 Liter
1 picocurie = 2.22 counts/minute

U-234 Concentration: = (648)/(2.22)(0.5003)(400)(0.2773)(0.8000) = 6.58 pCi/L. The laboratory reported 6.59 pCi/L.

The U-232 tracer recovery for DUPLICATE 02 Tot (F2H090401-011) Batch 2226014

U-232 Tracer concentration: 70.87 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.09 DPM
U-232 Tracer Gross Counts: 394
U-232 Tracer Background Counts: 2.917
U-232 Tracer net counts: 391.08
Count Time: 400 minutes
Detector Efficiency: 27.07%

U-232 Tracer recovered = (391.08)/(400)(0.2707) = 3.611 DPM
U-232 Tracer % Recovery = (3.611 DPM/7.09 DPM) * 100 = 50.94%. The laboratory reported 50.97%.

The U-238 concentration for DUPLICATE 02 Tot (F2H090401-011) Batch 2226014

U-238 gross counts: 4823
U-238 background counts: 0.4167

U-238 net counts: 4822.58
Count time: 400 minutes
Detector Efficiency: 27.07%
Tracer Recovery: 50.94%
Sample volume: 0.5004 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (4822.58)/(2.22)(0.5004)(400)(0.2707)(0.5094) = 78.70 pCi/L. The laboratory reported 78.66 pCi/L.

The U-232 tracer recovery for A04DMW708DD0005 Diss (F2J250431-014) Batch 2306013

U-232 Tracer concentration: 70.78 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.08 DPM
U-232 Tracer Gross Counts: 989
U-232 Tracer Background Counts: 8.125
U-232 Tracer net counts: 980.9
Count Time: 600 minutes
Detector Efficiency: 28.58%

U-232 Tracer recovered = (980.9)/(600)(0.2858) = 5.720 DPM
U-232 Tracer % Recovery = (5.720 DPM/7.08 DPM) * 100 = 80.79%. The laboratory reported 80.90%.

The U-238 concentration for A04DMW708DD0005 Diss (F2J250431-014) Batch 2306013

U-238 gross counts: 991
U-238 background counts: 3.750
U-238 net counts: 987.25
Count time: 600 minutes
Detector Efficiency: 28.58%
Tracer Recovery: 80.90%
Sample volume: 0.5002 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (987.25)/(2.22)(0.5002)(600)(0.2858)(0.8090) = 6.41 pCi/L. The laboratory reported 6.41 pCi/L.

The U-232 tracer recovery for A04DMW604D0005 Diss (F2J250431-017S) Batch 2306013

U-232 Tracer concentration: 70.78 DPM/mL (DPM = disintegrations/minute)
U-232 Tracer volume: 0.10 mL
U-232 Tracer added: 7.08 DPM
U-232 Tracer Gross Counts: 766
U-232 Tracer Background Counts: 0.000
U-232 Tracer net counts: 766

Count Time: 600 minutes
Detector Efficiency: 27.69%

U-232 Tracer recovered = (766)/(600)(0.2769) = 4.610 DPM
U-232 Tracer % Recovery = (4.610 DPM/7.08 DPM) * 100 = 65.11%. The laboratory reported 65.20%.

The U-238 concentration for A04DMW604D0005 Diss (F2J250431-017S) Batch 2306013

U-238 gross counts: 4913
U-238 background counts: 1.25
U-238 net counts: 4911.75
Count time: 600 minutes
Detector Efficiency: 27.69%
Tracer Recovery: 65.20%
Sample volume: 0.5004 Liter
1 picocurie = 2.22 counts/minute

U-238 Concentration: = (4911.75)/(2.22)(0.5004)(600)(0.2769)(0.6520) = 40.81 pCi/L. The laboratory reported 40.81 pCi/L.

U-238 matrix spike recovery for A04DMW604D0005 Diss (F2J250431-017S):
A04DMW604D0005 Diss (F2J250431-017) U-238 concentration 32.6 pCi/L
A04DMW604D0005 Diss (F2J250431-017S) U-238 matrix spike concentration 40.8 pCi/L
U-238 spike concentration 6.7756 pCi/L
(40.8 pCi/L-32.6 pCi/L)/(6.7756 pCi/L) X 100 = 121.0%. The laboratory reported 120.9%.

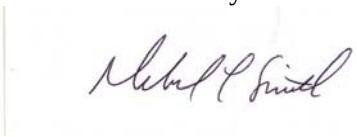
Table 1 summarizes the evaluated aqueous sample results. Result tables are appended to this submittal. Qualifiers were entered onto the laboratory submitted EDD and the qualified data tables were submitted to Shaw Environmental and Infrastructure electronically.

Sincerely,

Kestrel Environmental Technologies, Inc.

Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 Uranium Isotope results

Guterl Specialty Steel
F2J250431

Table 1 – Total and Dissolved Isotopic Uranium
Recommendation Summary

Sample ID	Matrix	Qualifier
A04BMW704DD0005 Tot	Aqueous	A
A04DMW710D0005 Tot	Aqueous	A
A04DMW708DD0005 Tot	Aqueous	A
A04DMW710DD0005 Tot	Aqueous	A
A04DMW713D0005 Tot	Aqueous	A
A04DMW604D0005 Tot FDUP	Aqueous	A
DUPLICATE 03 Tot FDUP	Aqueous	A
A04DMW709DD0005 Tot	Aqueous	A
A04BMW707DD0005 Tot	Aqueous	A
A04BMW605D0005 Tot	Aqueous	A
A04BMW260005 Tot	Aqueous	A
A04BMW704DD0005 Diss	Aqueous	A
A04DMW710D0005 Diss	Aqueous	A
A04DMW708DD0005 Diss	Aqueous	A
A04DMW710DD0005 Diss	Aqueous	A
A04DMW713D0005 Diss	Aqueous	A
A04DMW604D0005 Diss FDUP	Aqueous	A
DUPLICATE 03 Diss FDUP	Aqueous	A
A04DMW709DD0005 Diss	Aqueous	A
A04BMW707DD0005 Diss	Aqueous	A
A04BMW605D0005 Diss	Aqueous	A
A04BMW260005 Diss	Aqueous	A

A - Accept all data without qualification.

KESTREL
ENVIRONMENTAL
TECHNOLOGIES, INC.

November 21, 2012

Mr. Karl Van Keuren
Shaw E&I
5050 Section Avenue
Cincinnati, Ohio 45212

From: Kestrel Environmental Technologies, Inc.

RE: Project No.: 140416
Purchase Order No.: 714182
Lab Name: Test America, Earth City, MO
Lab Work Order: F2J250431
Site Name: Guterl Steel
Samples Collected: 10/22/2012, 10/23/2012 and 10/24/2012
22 Aqueous Samples

Total and Dissolved Uranium

Samples Collected: (Client IDs)

Sample ID	Lab ID	Sample ID	Lab ID
A04BMW704DD0005 Tot	F2J250431-001	A04BMW704DD0005 Diss	F2J250431-012
A04DMW710D0005 Tot	F2J250431-002	A04DMW710D0005 Diss	F2J250431-013
A04DMW708DD0005 Tot	F2J250431-003	A04DMW708DD0005 Diss	F2J250431-014
A04DMW710DD0005 Tot	F2J250431-004	A04DMW710DD0005 Diss	F2J250431-015
A04DMW713D0005 Tot	F2J250431-005	A04DMW713D0005 Diss	F2J250431-016
A04DMW604D0005 Tot FDUP	F2J250431-006	A04DMW604D0005 Diss FDUP	F2J250431-017
DUPLICATE 03 Tot FDUP	F2J250431-007	DUPLICATE 03 Diss FDUP	F2J250431-018
A04DMW709DD0005 Tot	F2J250431-008	A04DMW709DD0005 Diss	F2J250431-019
A04BMW707DD0005 Tot	F2J250431-009	A04BMW707DD0005 Diss	F2J250431-020
A04BMW605D0005 Tot	F2J250431-010	A04BMW605D0005 Diss	F2J250431-021
A04BMW260005 Tot	F2J250431-011	A04BMW260005 Diss	F2J250431-022

Tot- Total Diss- Dissolved (field filtered) FDUP- Field Duplicate

Dear Mr. Van Keuren,

A data evaluation was performed on the total uranium analyses, both total and dissolved fractions, from samples collected by Shaw Environmental and Infrastructure at the Guterl Steel site.

The laboratory, Test America, Earth City, MO, reported that the samples were prepared in accordance with US EPA SW-846 Method 3010 Modified (acid digestion). Total and dissolved uranium results were determined in accordance with US EPA SW-846 Method 6020A; Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The dissolved samples were field filtered.

The data evaluation was conducted in accordance with the *Former Guterl Specialty Steel Corporation, Lockport, NY, Quality Assurance Project Plan (QAPP) June 2007, Validation of Metals for the Contract Laboratory Program (CLP) based on ILM05.3 SOP # HW-2, September 2006, US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (OSWER 9240.1-45* and in conjunction with the individual method and the laboratory established criteria. The following items were evaluated:

All parameters require USEPA Region 2 data validation. The following items were evaluated:

Qualified		Parameters
Yes	**No**	
	X	Chain of Custody (COC) Documents
	X	Preservation and Technical Holding Time
	X	ICP-MS Tuning
	X	Initial Calibration
	X	Continuing Calibration
	X	Low Level Initial Calibration Verification (CRDL)
	X	Blank Analyses
	X	Interference Check Sample Results
	X	Matrix and Matrix Spike Duplicate Recoveries
	X	Laboratory Duplicate Precision
	X	Laboratory Control Samples (Blank Spike)
	X	Field Duplicate Precision
	X	ICP-MS Serial Dilutions
	X	ICP-MS Internal Standard Recoveries
	X	Sample Quantitation Verification

NA Not Applicable

Table 1 summarizes the recommendations that are based upon the following information:

Summary

A data evaluation was performed on the reported 6020 total and dissolved uranium elemental analytical data from samples collected by Shaw Environmental and Infrastructure at the Guterl Specialty Steel site.

All results are reported without qualification.

Chain of Custody Documents

The chain of custody (COC) was properly signed and dated. The sampling dates and sampling times were recorded for all field samples except the blind field duplicate samples; DUPLICATE 03 Total and Dissolved fractions.

Custody seals were present and intact on the sample coolers. Custody seals were not present on the sample containers.

Sample Preservation and Holding Times

Samples were collected on 10/22/2012, 10/23/2012 and 10/24/2012. The condition upon receipt form indicates that the aqueous metal samples for were not properly preserved. Sample A04DMW713D0005 Tot had a pH of 7 at sample receipt. The laboratory adjusted the pH to < 2 with nitric acid and allowed the sample to equilibrate for 24 hours prior to sample preparation. All other sample pHs were < 2.

The analytical holding time for ICP-MS analysis is 180 days. ICP-MS analyses were completed within the analytical holding time.

No results are qualified based upon sample preservation and analytical holding times.

ICP-MS Tuning

The tuning solution results were within the method acceptance criteria, resolution better than 0.1 atomic mass units (amu) for each tuning isotope and relative standard deviations less than 5.0%.

Initial Calibration Results

The laboratory did provide initial calibration verification (ICV) data for the ICP-MS analyses. All ICV results were between the 90-110% method acceptance criteria. No results are qualified based upon the initial calibration results.

Continuing Calibration Results

All ICP-MS bracketing continuing calibration results met the method acceptance criteria, 90-110%.

The laboratory analyzed an ICP-MS elements standard at or near 2 X the laboratory's reporting limit, 1.0 ug/L. The laboratory has labeled this standard as the CRDL (contract required detection limit standard) on the summary forms. The uranium CRDL standard concentration is 1.0 ug/L. The CRDL recoveries were 94.8% and 105.2%.

No results are qualified based upon CRDL standard recoveries.

Laboratory and Field Blank Analyses

Positive ICP-MS instrument blank results and positive preparation blank results are summarized below:

Analyte	Type of Blank	IDL	MDL	Blank Conc
None				

CCB – Continuing Calibration Blank MB – Prep Blank

All uranium method blank and instrument blank results are reported as non-detected (U) at the method detection limit (MDL), 0.23 ug/L.

All samples were collected from dedicated samplers. No field equipment blank samples were provided.

ICP-MS Interference Check Sample Results

ICP-MS interference check standards are analyzed to evaluate spectral background interferences and to evaluate potential interelement interferences.

All ICP-MS interference check sample acceptance criteria are 80-120% recoveries for the ICSA and ICSAB solutions.

ICSA and ICSAB solutions for ICP-MS analyses were analyzed at the beginning of the analytical sequence. Samples were analyzed immediately following the ICSA and ICSAB analyses. All ICSA and ICSAB recoveries were within the 80-120% acceptance criteria.

Matrix Spike Results

Matrix spike/matrix spike duplicate (MS/MSD) samples are analyzed to evaluate analytical precision and accuracy in the sample matrix.

Sample A04DMW604D0005 Tot was analyzed as a MS/MSD pair associated with preparation batch 2300080. The MS/MSD recoveries are 105.6% and 104.7% respectively.

Sample A04DMW604D0005 Diss was analyzed as a MS/MSD pair associated with preparation batch 2300077. The MS/MSD recoveries are 107.5% and 107.6% respectively.

All MS/MSD recoveries are within the 70-130% QAPP acceptance criteria.

No results are qualified based upon the MS/MSD results.

Laboratory Duplicates

The laboratory did not analyze a laboratory duplicate sample. The MS/MSD results are evaluated to determine analytical precision in the sample matrix.

The QAPP acceptance relative percent difference (RPD) for laboratory duplicate samples is $\leq$ 20%.

Sample A04DMW604D0005 Tot was analyzed as a MS/MSD pair associated with preparation batch 2300080. The MS/MSD RPD is 0.7%.

Sample A04DMW604D0005 Diss was analyzed as a MS/MSD pair associated with preparation batch 2300077. The MS/MSD RPD is 0.1%.

No results are qualified based upon laboratory duplicate precision.

Field Duplicates

Field duplicates are evaluated to determine precision of both the sampling and analytical procedures. The QAPP acceptance criteria for aqueous samples are ≤ 50% relative percent difference (RPD) for field duplicate samples.

Samples A04DMW604D0005 and DUPLICATE 03, total and dissolved fractions, are two field duplicate pairs. The field duplicate RPDs are less than 50%. The RPDs are 0.8% and 2.6% respectively.

LCS Results

LCS samples are analyzed to evaluate accuracy of the analytical method on a controlled matrix. The percent recoveries should be within the QAPP acceptance criteria.

The QAPP LCS recovery acceptance criterion for ICP-MS analyses is 85-115%.

LCS results that exceed the QAPP acceptance criteria are summarized below.

Elements	Spike Conc ug/L	Result ug/L	% Recovery	Action
None				

No results are qualified based upon the LCS results.

ICP-MS Serial Dilution Results

Serial dilutions are analyzed to determine potential matrix interferences in the sample. ICP-MS results that are greater than 50X the instrument detection limit (IDL) should have a % difference (%D) less than 10%. The IDL is 0.23 ug/L. If the %D exceeds 10% results are qualified as estimated (J).

Sample A04DMW604D0005 Tot was analyzed as the ICP-MS serial dilution sample with batch 2300080. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

Sample A04DMW604D0005 Diss was analyzed as the ICP-MS serial dilution sample with batch 2300077. ICP-MS serial dilution results that exceed 10% D are summarized below.

Elements	Sample Result ug/L	Serial Dil ug/L	% D	Action
None				

No results are qualified based upon the serial dilution results.

ICP-MS Internal Standard Recoveries

All internal standard recoveries were within the method acceptance criteria of 60-125%.

No results are qualified based upon ICP-MS internal standard recoveries.

Method Detection Limit Results/Practical Quantitation Limits

Non-detected results are reported as non-detected (U) at the RL. The RL is adjusted for sample volume and sample dilution.

In those circumstances where dissolved results are greater than total results no total and dissolved results differ by more than 20%.

Calculations

Sample A04DMW604D0005 Tot (F2J250431-006), reported in laboratory data package F2J250431 (batch 2300080), was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Recovery:
Sample uranium concentration: 112 ug/L
MS uranium concentration: 1170 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1170 ug/L – 112 ug/L)/ 1000 ug/L)) * 100 = 105.8%. The laboratory reported 105.6%.

Serial Dilution:
Sample uranium concentration: 112 ug/L
Serial dilution concentration of the 5X dilution: (21.0 ug/L * 5) = 105.0 ug/L
ICP-MS Serial Dilution Percent Difference = ((112-105.0)/(112)) * 100 = 6.25%. The laboratory reported 6.41%.

Sample A04DMW604D0005 Diss (F2J250431-017), reported in laboratory data package F2J250431 (batch 2300077), was analyzed as the batch matrix spike sample (MS) and as the serial dilution sample.

Matrix Spike Duplicate Recovery:
Sample uranium concentration: 111 ug/L
MS uranium concentration: 1190 ug/L
MS spike concentration: 1000 ug/L
MS % recovery = ((1190 ug/L – 111 ug/L)/ 1000 ug/L)) * 100 = 107.9%. The laboratory reported 107.5%.

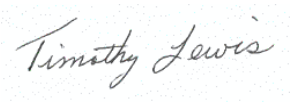
Serial Dilution:
Sample uranium concentration: 111 ug/L
Serial dilution concentration of the 5X dilution: (20.4 ug/L * 5) = 102 ug/L
ICP-MS Serial Dilution Percent Difference = ((111-102)/(111)) * 100 = 8.1%. The laboratory reported 8.0%.

The laboratory included supporting documentation Method Detection Limits Form 10, Interelement Correction Factors Form 11, Linear Ranges Form 12, Sample Preparation Summary Form 13, Analysis Run Log Form 14, sample preparation log books and analytical sequence run logs.

Table 1 summarizes the qualified sample results.

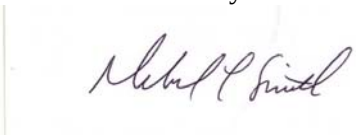
Sincerely,

Kestrel Environmental Technologies, Inc.



Timothy Lewis
Validator

Reviewed By:



Deborah L. Smith

Attachments: Table 1 – Total Uranium in Total and Dissolved Fractions by ICP-MS US EPA 6020A

Data Validation Qualifiers Definitions

U- The analyte was not detected.
R- Unusable result; rejected. The analyte may or may not be present in the sample.
J- The analyte is present but the reported concentration is estimated. The reported result may not be accurate or precise.
UJ- The analyte was not detected. The quantitation limit may not be accurate or precise.

Guterl Specialty Steel
F2J250431

Table 1 – Total and Dissolved Uranium by ICP-MS
Recommendation Summary

Sample ID	Matrix	Qualifier
A04BMW704DD0005 Tot	Aqueous	A
A04DMW710D0005 Tot	Aqueous	A
A04DMW708DD0005 Tot	Aqueous	A
A04DMW710DD0005 Tot	Aqueous	A
A04DMW713D0005 Tot	Aqueous	A
A04DMW604D0005 Tot FDUP	Aqueous	A
DUPLICATE 03 Tot FDUP	Aqueous	A
A04DMW709DD0005 Tot	Aqueous	A
A04BMW707DD0005 Tot	Aqueous	A
A04BMW605D0005 Tot	Aqueous	A
A04BMW260005 Tot	Aqueous	A
A04BMW704DD0005 Diss	Aqueous	A
A04DMW710D0005 Diss	Aqueous	A
A04DMW708DD0005 Diss	Aqueous	A
A04DMW710DD0005 Diss	Aqueous	A
A04DMW713D0005 Diss	Aqueous	A
A04DMW604D0005 Diss FDUP	Aqueous	A
DUPLICATE 03 Diss FDUP	Aqueous	A
A04DMW709DD0005 Diss	Aqueous	A
A04BMW707DD0005 Diss	Aqueous	A
A04BMW605D0005 Diss	Aqueous	A
A04BMW260005 Diss	Aqueous	A

A - Accept all data without qualification.

APPENDIX E

IDW Bill of Lading
(Provided on same CD as Appendix A)

THIS MEMORANDUM is an acknowledgement that a bill of lading has been issued and is not the Original Bill of Lading, not a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper's No. _____

(Carrier) Hazmat Environmental SCAC. _____ Carrier's No. _____

Received, subject to the classifications and tariffs in effect on the date of this Bill of Lading:

at _____, date _____ from _____

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own road or its own water line, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained (as specified in Appendix B to Part 1035) which are hereby agreed to by the shipper and accepted for himself and his assigns.

TO: (Mail or street address of consignee for purposes of notification only.)	**FROM:**
Consignee: US Ecology Texas	Shipper: USACE Buffalo District
Street: 3.5 miles South on Petronila Road	Street: 695 Ohio Street
Destination: Robstown, TX Zip: 78380	Origin: Lockport, NY Zip: 14094
Route:	

Delivering Carrier	Trailer Initial/Number	U.S. DOT Hazmat Reg. Number

No. of packages	HM	Description of articles, special marks, and exceptions	Hazard Class	I.D. Number	Packing Group	*Weight (subject to correction)	Class or rate	Labels required (or exemption)	Check column
39		Non-Hazardous IDW Soils Approval #: 090074405				15,600 lbs		OUTS3181	
23-25	PG	Non-Hazardous IDW Waters Approval #: 090074406				9,200 lbs		OUTS1191	

Remit C.O.D. to:
Address:
City: State: Zip:

COD AMT: $

Charges Advanced $ _____

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of consignor)

C. O. D. FEE: Prepaid ☐ Collect ☐ $

FREIGHT CHARGES ☐ Prepaid ☐ Collect

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight". Note. – where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Per _____

PLACARDS REQUIRED

PLACARDS SUPPLIED ☐ YES ☐ NO - FURNISHED BY CARRIER

DRIVER'S SIGNATURE:

SPECIAL INSTRUCTIONS:

SHIPPER: Kevin Cronin
PER: KEVIN CRONIN - SHAW E&I ON BEHALF OF USACE DATE: 12/16/11

CARRIER: HAZMAT
PER: Greg Norden DATE: 12-16-11

EMERGENCY RESPONSE TELEPHONE NUMBER: (419) 348-4621 Shaw E&I Greg Norden
Monitored at all times the Hazardous Material is in transportation including storage incidental to transportation (§172.604).

Permanent post office address of shipper

29-BLS-C3 (Rev. 6/95)

HazMat

ENVIRONMENTAL GROUP, INC
60 Commerce Drive, Buffalo, NY 14218
www.hazmatinc.com
FAX (716) 827-7217
(716) 827-7200

HAZMAT

NYDEC #9A-278
EPA ID# NYD980769947

DATE / /

511650

PICK UP

SHIPPER

NAME: ATI ALCVAC
STREET: 695 OHIO ST.
CITY: LOCKPORT, NEW YORK
STATE / ZIP CODE
CONTACT NAME: KEVIN CRONIN
PHONE: 716-472-0434
SCHEDULED TIME: KEVIN W. HER

DELIVERY

CONSIGNEE

NAME: US ECOLOGY
STREET: 3277 COUNTY RD. 69
CITY: ROBSTOWN, TEXAS
STATE / ZIP CODE
CONTACT NAME
PHONE
12-19-11 15:00

ADDITIONAL INFORMATION / EQUIPMENT DAMAGE
If damaged at pickup site, did you send in Equipment Damage Report (EDR) via Qualcomm? Y N Explain damage below.

K

Pursuant to 6NYCRR 372.2 (b) (2) (iii) HazMat certifies that it is Authorized to deliver this shipment of manifested waste to the TSDF listed on this Bill of Lading. Shipment valuation limits apply from HazMat Rules Publication 101, Item 848.

ADDITIONAL INFORMATION / EQUIPMENT DAMAGE
If damaged at delivery site, did you send in Equipment Damage Report (EDR) via Qualcomm? Y N Explain damage below.

PURCHASE ORDER NO.	WORK ORDER NUMBER	MANIFEST NUMBER	H.M. NUMBER
			214394

LOAD NUMBER	TRACTOR	TRAILER	ROLL OFF BOX	DRIVER NUMBER	DRIVER'S NAME
	435	B-140		2070	GARY A. KING

EQUIPMENT	MATERIAL DESCRIPTION/MANIFEST NUMBER	QUANTITY
EQUIPMENT TYPE V UNIT# DROPPED UNIT# PICKED UP CONDITION REPORT 6	NON-HAZ	64 PM

Product unloading station and/or tank approved by:

CONSIGNEE'S SIGNATURE

Compressor used YES ____ NO ____
In-Transit Heat used: YES ____ NO ____
Analysis/C of A: YES ____ NO ____

PICK UP

PICK UP DATE 12-16-11
ARRIVAL TIME 0700 AM/PM RELEASE TIME ____ AM/PM
DAY #2 DATE ____
ARRIVAL TIME ____ AM/PM RELEASE TIME ____ AM/PM

TRAILER EMPTY UPON ARRIVAL ☐ YES
(if not, explain below—)
DIP MEASUREMENT (Tankers Only) ____ INCHES
COMMENTS: (EXPLAIN ALL DELAYS) ____

HAZMAT MATERIALS USED (ex. overpacks, etc.): ☐ YES ☐ NO
IF YES EXPLAIN:

I, THE UNDERSIGNED, CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND COMPLETE.

SHIPPER'S SIGNATURE Kevin Cronin **Date** 12/16/11
KEVIN CRONIN - SIGNED ON BEHALF OF USAGE

DELIVERY

DRIVER ____ DAY #1 DATE ____
ARRIVAL TIME ____ AM/PM RELEASE TIME ____ AM/PM
DAY #2 DATE ____ ARRIVAL TIME ____ AM/PM RELEASE TIME ____ AM/PM
DAY #3 DATE ____ ARRIVAL TIME ____ AM/PM RELEASE TIME ____ AM/PM

TRAILER CLEAN AND EMPTY UPON DEPARTURE ☐ YES ☐ NO
(if not, explain below—)
COMMENTS: (Explain all delays or discrepancies)) ____

IF YES EXPLAIN:

I, THE UNDERSIGNED, CERTIFY THAT THE ABOVE INFORMATION IS TRUE AND COMPLETE.

CONSIGNEE'S SIGNATURE **Date**

HAZMAT BILL OF LADING GENERATOR COPY

CleanVenture/CycleChem

CVCC 176456

The Environmental Services Source

NON-HAZARDOUS SOLID WASTE

BILL OF LADING

Page 1 of 1

24 Hour Emergency Number (908) 354-0210

GENERATOR

Generator's Name and Mailing Address: USACE BUFFALO DISTRICT
1776 NIAGARA STREET
BUFFALO, NY 14201
Generator's Phone ((716) 472-0434

BOL

695 OHIO STREET
LOCKPORT NY 14094

Transporter 1 Company Name: CLEAN VENTURE INC.
State Trans. ID-NJDEPE 16755
Decal No.-
Transporter 2 Company Name
Transporter's Phone ((908) 355-5800

Designated Facility Name and Site Address: Cycle Chem Inc.
217 South First Street
Elizabeth, NJ 07206
10. US EPA ID Number: NJD002220046
State Trans. ID-NJDEPE
Decal No.-
Transporter's Phone ( )
Facility's Phone ((908)) 355-5800

	US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group)	Containers No.	Containers Type	Total Quantity	Unit Wt/Vol	Waste No.
a.	Non-DOT CHEMICAL PROCESS LIQUID Non-RCRA	6	DM	2560	P	ID72
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above

a. | c.

b. | d.

CCI Generator # and Product Codes: 965022/935287/143324/291184 (1)REM002-1 IDW WATER

GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by USEPA & applicable state regulations.

PLACARDS REQUIRED

PLACARDS SUPPLIED ☐ YES ☐ NO- FURNISHED BY CARRIER

Printed/Typed Name	Signature	Month	Day	Year
Robert Simmington On Behalf of USACE		01	08	13

TRANSPORTER

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Luis R Ortiz		01	8	13

Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest.

Printed/Typed Name	Signature	Month	Day	Year

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

COPY 1 - WHITE - GENERATOR COPY 2 - PINK - TRANSPORTER COPY 3 - BLUE - CycleChem COPY 4 - CANARY - FACILITY

AL2342B 500

TRUCK PASS 38104

ATI Allvac
Allegheny Technologies

8-1 LOCKPORT PLANT / SCALE #24

INBOUND 32560 lb
LOOP ID 38

INBOUND WEIGHMASTERS INITIALS

TICKET NUMBER 6926

35120 lb Gross
32560 lb Tare
2560 lb Net

OUTBOUND WEIGHMASTERS INITIALS

WARNING SECURITY EMPLOYS SURVEILLANCE EQUIPMENT AND PERSONNEL TO DETECT ILLEGAL ACTIVITY. WE PROSECUTE FOR ALL ILLEGAL ACTS.

RADIATION DETECTION SYSTEM
1/08/13 ~~GR 526 EXPLORANIUM~~ RC4110
PASS - ☒ Mevis RADCOMM
Level 1 _____ Counts _____
Level 2 _____ Counts _____
Level 3 _____ Counts _____
Level 4 _____ Counts _____
GR - 110 Manual Check ☐
Comments:

PRINT DRIVER'S NAME: LUIS ORTIZ

CARRIER'S NAME: CLEAN VENTURE

LICENSE TRACTOR: AM335E STATE: NJ
TRAILER: 1 STATE:

I agree to comply with conditions of this Pass
DRIVER'S SIGNATURE: Luis R Ortiz

DEPT. NAME	DOOR NO.	DEPT. TIME IN	DEPT. TIME OUT	NO. OF B/L's	WEIGHT	SIGNATURE REQUIRED SHIPPER OR RECEIVER
1						
2						
3						
4						

CO-DRIVERS MUST BE CLEARED BY TRAFFIC.

REMARKS OR MATERIAL DESCRIPTION

INBOUND
1 empty

2

OUTBOUND
3 6 Drums For U.S.A.Corp. ENG.

4

ENTRY GATE
DATE/TIME 11:56AM 01/08/2013
GATE OPERATOR WALKER

EXIT GATE
DATE/TIME 01:08PM 01/08/2013
GATE OPERATOR

SAFETY EQUIP. ISS
☐ HARDHAT
☐ GLASSES
☐ HAS OWN

★★★★★ MATERIAL INFORMATION ★★★★★

INBOUND FREIGHT	VENDOR WEIGHTS WHEN AVAILABLE
VENDOR NAME:	GROSS:
P.O. #: USACE	TARE:
OUTBOUND FREIGHT	NET:
DESTINATION:	

PASSENGERS ARE NOT PERMITTED BEYOND GATE

APPENDIX F

Evaluation of High Frequency Monitoring Data

Appendix F
Evaluation of High Frequency Monitoring Data

Introduction

A series of supplemental sampling events were conducted between August 2011 and October 2012 to determine if there was seasonal variability in the uranium (U) concentrations observed in the groundwater at Guterl, and if seasonal variations were present could they be correlated to seasonal variations in the groundwater chemistry. To accomplish these goals, 10 wells were selected for quarterly sampling and for high-frequency monitoring of water levels with pressure transducers (In-Situ™ Troll Level Loggers) and other geochemical parameters with multi-parameter water quality transducers (In-Situ™ Troll 9500s). The wells that were included in these sampling events were shallow/deep well pairs MW-26/MW-707DD, MW-604D/ MW-709DD, MW-605D/MW-704DD, MW-710D/MW-710DD, and MW-713D/MW-708DD. This set included seven wells installed during the DGI field work (the 700-series wells) and three wells installed during previous investigations (MW-26, MW-604D, and MW-605D).

Uranium Concentrations

The total uranium (filtered) results from the DGI sampling event and the four quarterly sampling events are shown on Figure F-1. The uranium concentrations were generally highest in the samples from the three existing wells that were included in the quarterly sampling – MW-26, MW-604D, and MW-605D. These wells are aligned northwest to southeast, roughly along the center axis of the plume, which generally corresponds to the predominant regional fracture traces. The groundwater seeps with the highest uranium concentrations are located downgradient of the uranium groundwater plume axis defined by these wells. Based on the sampling results shown on Figure F-1, the total uranium concentrations appear to be fairly stable and there is not any apparent seasonal variation that is consistent between individual monitoring wells.

To evaluate the quarterly sampling results relative to previously collected groundwater data for the site, a plot of isotopic ^{238}U (filtered) was made that includes the quarterly sampling results and the previously collected results for wells MW-26, MW-604D, and MW-605D, and is shown on Figure F-2. This comparison was made using the isotopic ^{238}U data because total uranium data were not available from the two sampling events in 2007. The DGI and quarterly isotopic ^{238}U sample results fall within the range of concentrations previously detected for each well.

Groundwater Elevation

The quarterly groundwater elevation measurements are shown on Figure F-3. Figure F-4 shows the groundwater elevations recorded in the wells equipped with the Troll Level-Logger

transducers and Figure F-5 shows the correlation between the manual groundwater elevation measurements and the transducer data. The groundwater elevation in the quarterly wells is between 585 and 600 feet (MSL) in all the wells with the exception of MW-707DD and MW-710DD. There does not generally appear to be any significant seasonal variation in the groundwater elevations. The groundwater elevation in MW-707DD is consistently much lower than the groundwater elevation in MW-26, which is the shallow well immediately adjacent to it. The rock core from MW-707DD was observed to have very few fractures, the measured hydraulic conductivity was low, and the well is slow to recharge during sampling. It appears that the groundwater elevation in MW-707DD is more influenced by deeper fractures which appear to produce less water than the overlying shallow fractures. Similarly, there is a considerable difference in the groundwater elevations measured in well pair MW-710D and MW-710DD, indicating limited vertical hydraulic connection in that area. Well pair MW-604D and MW-709DD track fairly closely, with the groundwater elevation being only slightly lower in MW-709DD during each sampling event. The groundwater elevations in well pair MW-605D and MW-704DD are nearly identical, indicating good vertical connectivity in that area.

The sharp drops and slow increases in groundwater elevation at MW-707DD correspond to purging of the well during sampling events and are indicative of the slow recharge in that well. The sharp spikes noted in the other well records are the result of measurements that were recorded while the transducers were removed during sampling and maintenance. The sharp drop in groundwater elevation in the fall and sharp increase in the spring noted in MW-710DD corresponds to the timing of the seasonal lowering of the pool elevation in the Erie Canal. Well MW-710DD is located at the downgradient edge of the site and is upgradient of the main seep location noted in the canal. Figure F-5 indicates a good correlation between the manual groundwater elevation measurements and the transducer data. It should be noted that the data points selected from the transducer data sets for Figure F-5 and the correlation plots for the other parameters were based on an estimation of the readings that were most representative of conditions at the time of sampling, since some of the transducer measurements were affected by movement of the transducers during sampling or purging of the wells. There were also measurements that occurred outside the range of anticipated conditions. These results do not always appear on the correlation figures due to the display ranges selected.

Conductivity

Figure F-6 shows the conductivity measurements taken during the quarterly sampling events using the YSI™ water quality meter. The transducer conductivity measurements are shown on Figure F-7 and the correlation between the quarterly measurements and the transducer data is shown on Figure F-8. There does not appear to be any systematic seasonal variation, except perhaps in the transducer data from MW-26 and MW-604 shown on Figure F-7. There appears to be an increase in conductivity in those two wells between February and July. Both are

shallow wells located in the center of the plume area. This may be due to increased precipitation and recharge during the spring and early summer. Also, the data show short-term reactions to precipitation events, which is indicative of ion loading of recharge through the site soils. The highest conductivity readings in both the quarterly and transducer measurements were in MW-704DD. The lowest conductivity readings were in MW-605D. Interestingly, these wells are in adjacent locations and have almost identical groundwater elevation measurements. Based on the conductivity variation in MW-704DD seen in Figure F-7, it appears that the conductivity values in that well are reduced by the removal of water during the quarterly sampling events and slowly recover with time. This indicates that groundwater from the shallow zone around the screen in MW-605D might be mixing with deeper groundwater in the screened zone in MW-704DD during the sampling events. Figure F-8 shows there is fairly good correlation between the quarterly and transducer conductivity measurements. It should be noted that the measurements from MW-707DD were extremely high in both the quarterly and transducer data sets; this well exhibits high total dissolved solids derived from high cation and anion concentrations unique to this well. The readings appear to be outside the design limits of the instruments (off-scale) and, therefore, were not shown on Figures F-6 and F-7.

pH

The quarterly pH measurements are shown on Figure F-9, the transducer pH data are shown on Figure F-10, and the correlation between the quarterly data from the YSI™ water quality meter and the transducer data is shown on Figure F-11. The transducer data from MW-604D, MW-605D, and MW-708DD are not shown because all three sensors appear to have malfunctioned during the monitoring period (all three recorded pH readings in excess of 12 standard units (SUs)). The quarterly pH measurements from the May 2012 sampling event (shown on Figure F-10) are also suspect: the readings from wells MW-604D, MW-605D, MW-713D, and MW-704DD were all below pH=7, which is lower than any of the other readings in those wells or the other wells during the DGI or the Supplemental Sampling. Figure F-11 indicates there is not very good correlation between the quarterly pH measurements and the transducer data. However, disregarding the May 2012 quarterly measurements, there is little variation in pH.

ORP

The ORP data are shown on Figures F-12 and F-13, and the correlation between the quarterly YSI™ data and transducer data is shown on Figure F-14. The quarterly ORP measurements indicate an increase in ORP during the summer (May sampling), but this is not reflected in the ORP readings from the transducers. The transducer data indicate that the ORP is fairly stable during the monitoring period, but there does appear to be a consistent decrease in the readings from July to October. This is also seen in the quarterly measurements. The decrease noted in the transducer data is most pronounced in wells MW-26, MW-604D, and MW-605D. These three

wells also had uranium concentration increases in the same period. Figure F-14 indicates there is fairly good correlation between the quarterly and transducer ORP measurements.

DO

The quarterly DO data are shown on Figures F-15. A review of the DO data indicates its usability is limited. The quarterly DO measurements show a large variation between wells and within some wells. These large variations might not be indicative of actual conditions. The transducer DO sensors appear to have been functioning, but the values recorded by the data loggers are outside the range of anticipated values - mostly small negative numbers were recorded for DO concentration and percent DO saturation. There was also not any apparent correlation between the quarterly and transducer DO data. Therefore, the transducer Do data are not presented. No discernable seasonal variation was apparent in the quarterly DO data.

Conclusion

The quarterly sampling and high-frequency monitoring conducted during the supplemental sampling period indicate that the concentrations of uranium and other parameters are fairly stable in the wells monitored. There were not any discernable seasonal variations that were consistent between wells; however, the data show short-term specific conductivity reactions to precipitation events, which is indicative of ion loading of recharge through the site soils.

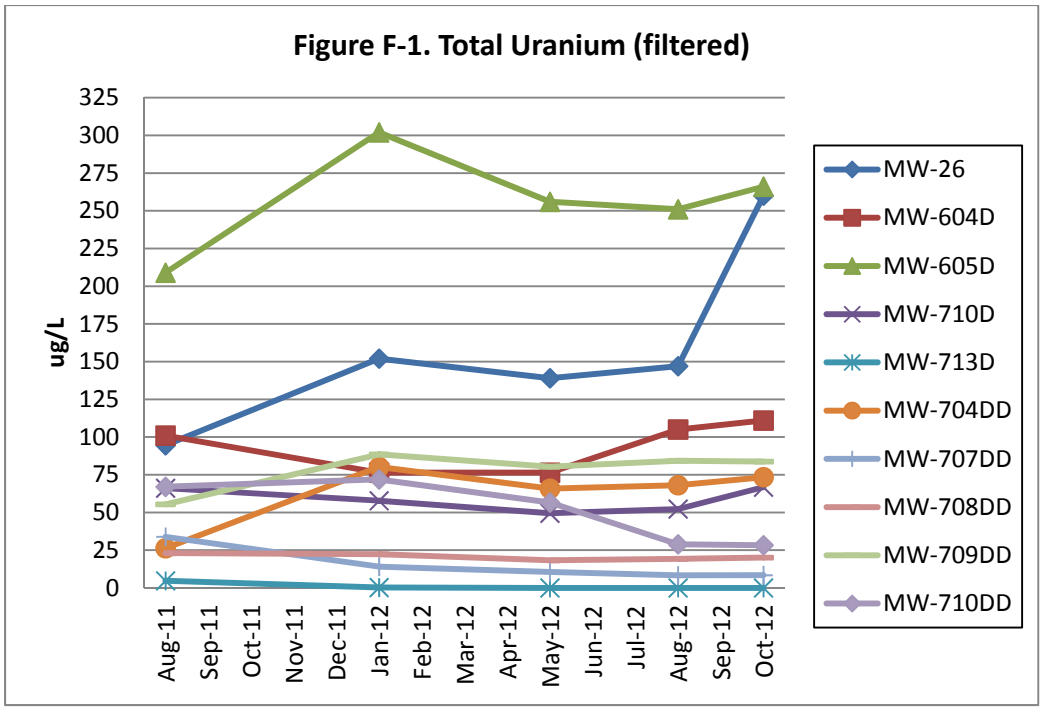


Figure F-1. Total Uranium (filtered)
ug/L
325
300
275
250
225
200
175
150
125
100
75
50
25
0
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Jan-12
Feb-12
Mar-12
Apr-12
May-12
Jun-12
Jul-12
Aug-12
Sep-12
Oct-12
MW-26
MW-604D
MW-605D
MW-710D
MW-713D
MW-704DD
MW-707DD
MW-708DD
MW-709DD
MW-710DD

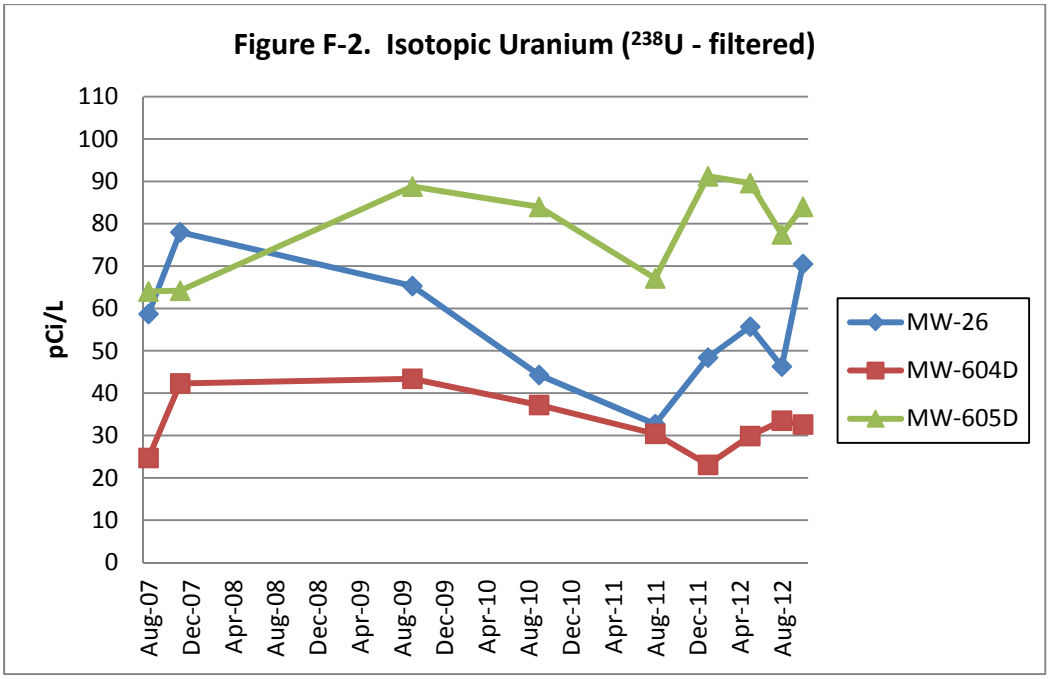


Figure F-2. Isotopic Uranium (238U - filtered)
pCi/L
110
100
90
80
70
60
50
40
30
20
10
0
Aug-07
Dec-07
Apr-08
Aug-08
Dec-08
Apr-09
Aug-09
Dec-09
Apr-10
Aug-10
Dec-10
Apr-11
Aug-11
Dec-11
Apr-12
Aug-12
MW-26
MW-604D
MW-605D

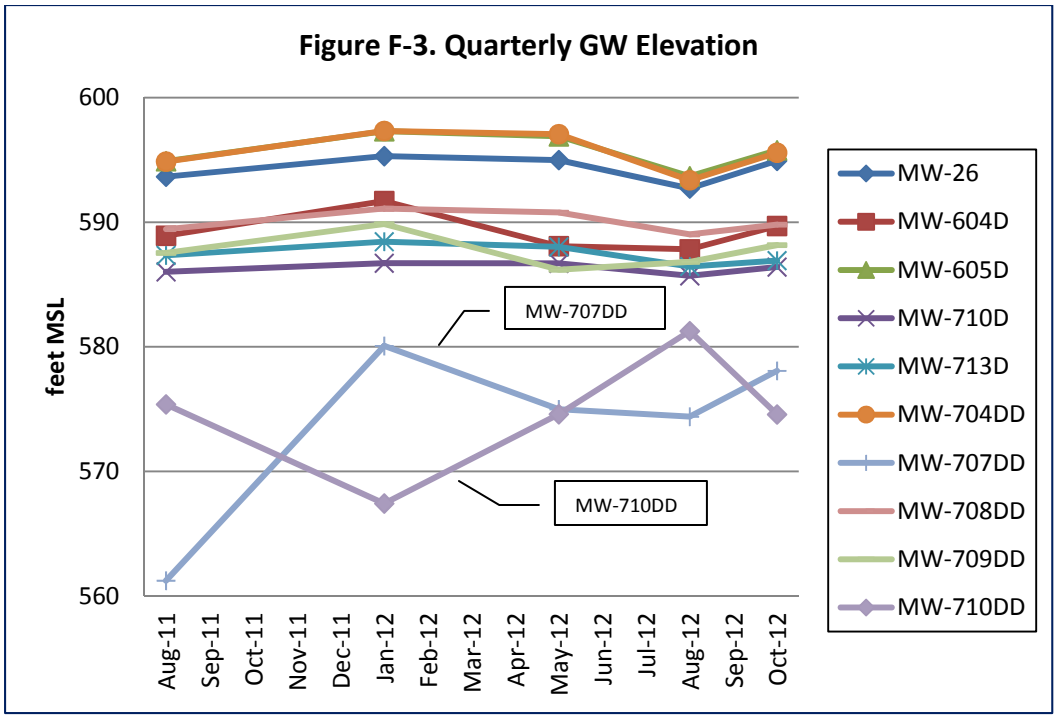


Figure F-3. Quarterly GW Elevation
feet MSL
600
590
580
570
560
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Jan-12
Feb-12
Mar-12
Apr-12
May-12
Jun-12
Jul-12
Aug-12
Sep-12
Oct-12
MW-707DD
MW-710DD
MW-26
MW-604D
MW-605D
MW-710D
MW-713D
MW-704DD
MW-707DD
MW-708DD
MW-709DD
MW-710DD

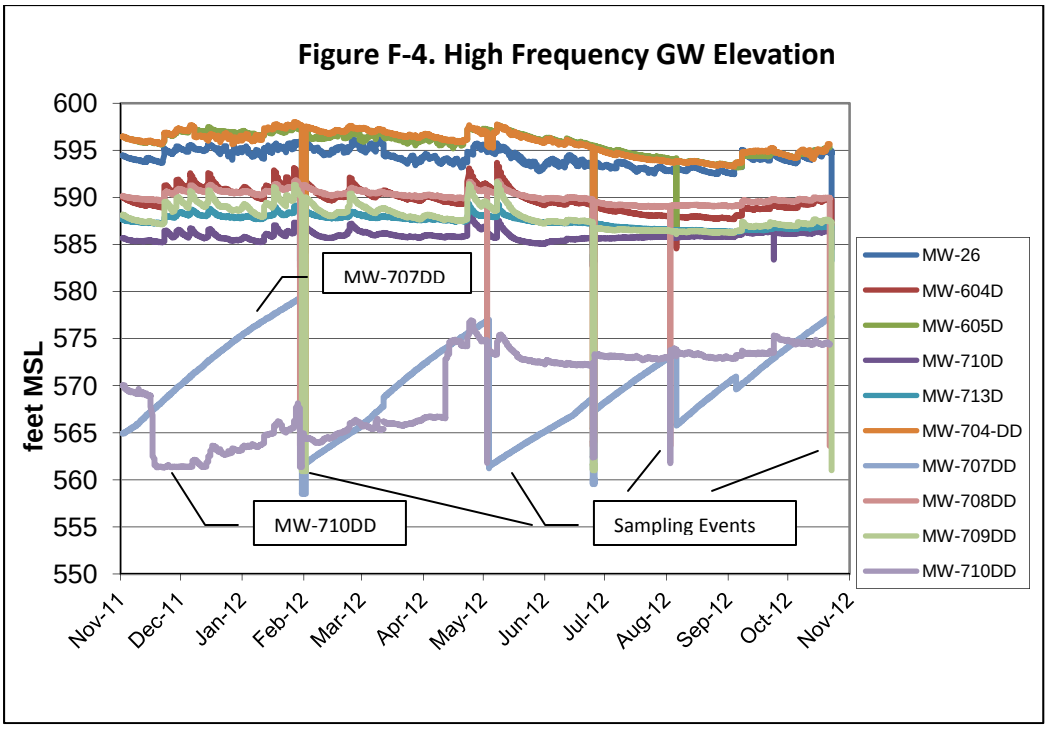


Figure F-4. High Frequency GW Elevation
feet MSL
600
595
590
585
580
575
570
565
560
555
550
Nov-11
Dec-11
Jan-12
Feb-12
Mar-12
Apr-12
May-12
Jun-12
Jul-12
Aug-12
Sep-12
Oct-12
Nov-12
MW-707DD
MW-710DD
Sampling Events
MW-26
MW-604D
MW-605D
MW-710D
MW-713D
MW-704-DD
MW-707DD
MW-708DD
MW-709DD
MW-710DD

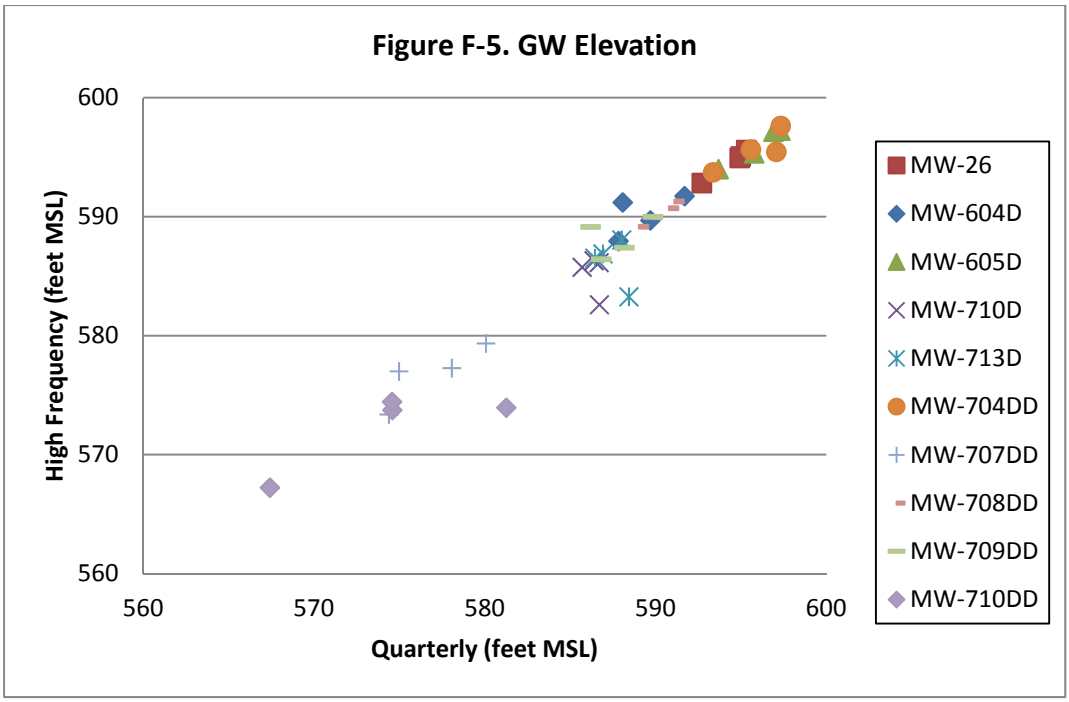


Figure F-5. GW Elevation
600
590
580
570
560
560
570
580
590
600
High Frequency (feet MSL)
Quarterly (feet MSL)
MW-26
MW-604D
MW-605D
MW-710D
MW-713D
MW-704DD
MW-707DD
MW-708DD
MW-709DD
MW-710DD

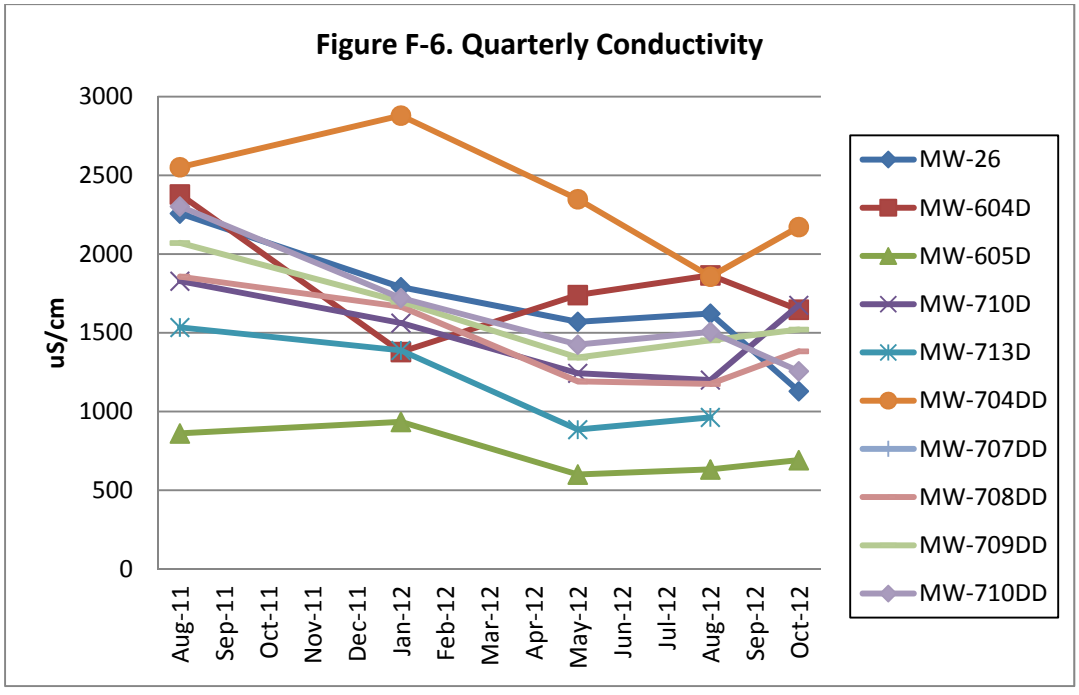


Figure F-6. Quarterly Conductivity
3000
2500
2000
1500
1000
500
0
uS/cm
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Jan-12
Feb-12
Mar-12
Apr-12
May-12
Jun-12
Jul-12
Aug-12
Sep-12
Oct-12
MW-26
MW-604D
MW-605D
MW-710D
MW-713D
MW-704DD
MW-707DD
MW-708DD
MW-709DD
MW-710DD

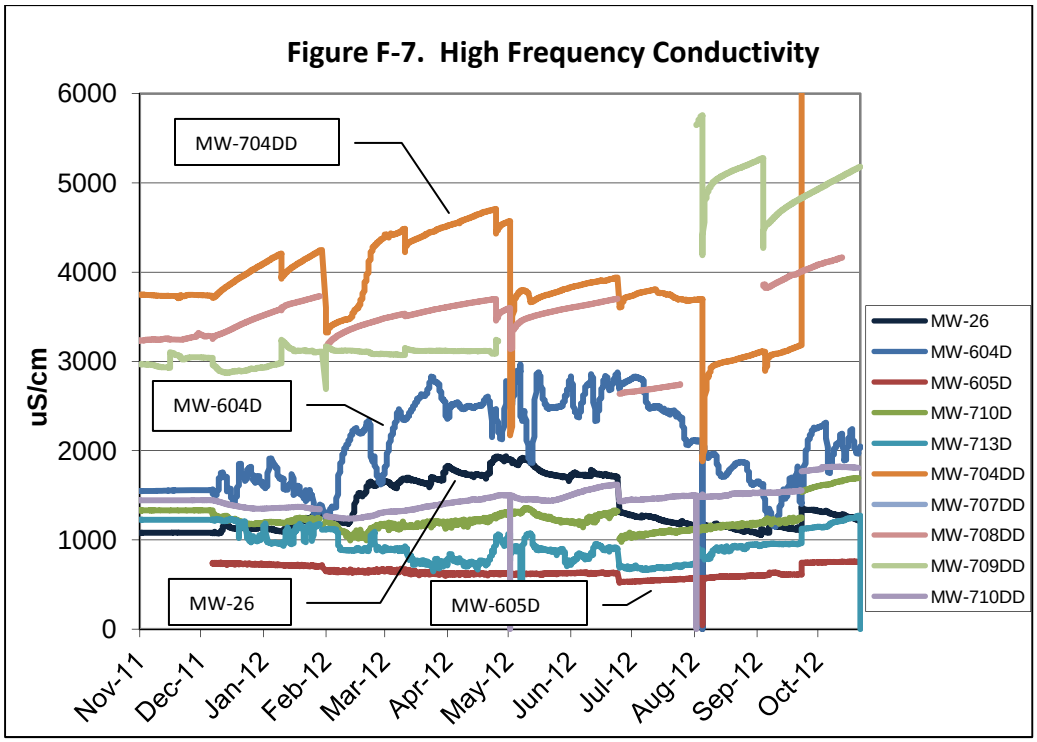


Figure F-7. High Frequency Conductivity
uS/cm
6000
5000
4000
3000
2000
1000
0
MW-704DD
MW-604D
MW-26
MW-605D
Nov-11
Dec-11
Jan-12
Feb-12
Mar-12
Apr-12
May-12
Jun-12
Jul-12
Aug-12
Sep-12
Oct-12
MW-26
MW-604D
MW-605D
MW-710D
MW-713D
MW-704DD
MW-707DD
MW-708DD
MW-709DD
MW-710DD

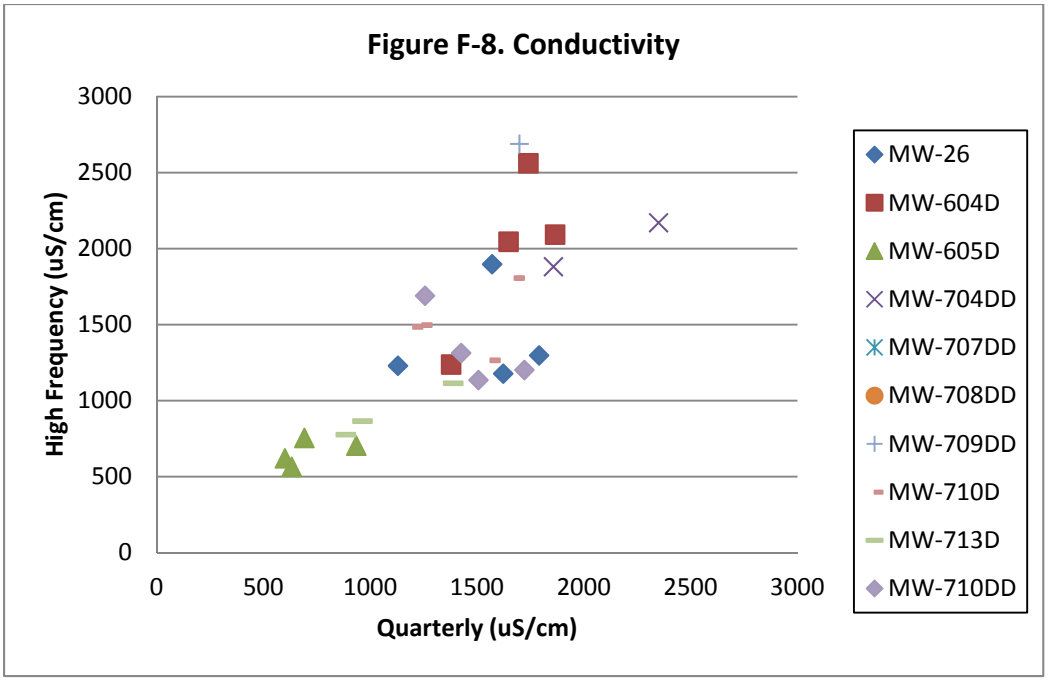


Figure F-8. Conductivity
High Frequency (uS/cm)
3000
2500
2000
1500
1000
500
0
0
500
1000
1500
2000
2500
3000
Quarterly (uS/cm)
MW-26
MW-604D
MW-605D
MW-704DD
MW-707DD
MW-708DD
MW-709DD
MW-710D
MW-713D
MW-710DD

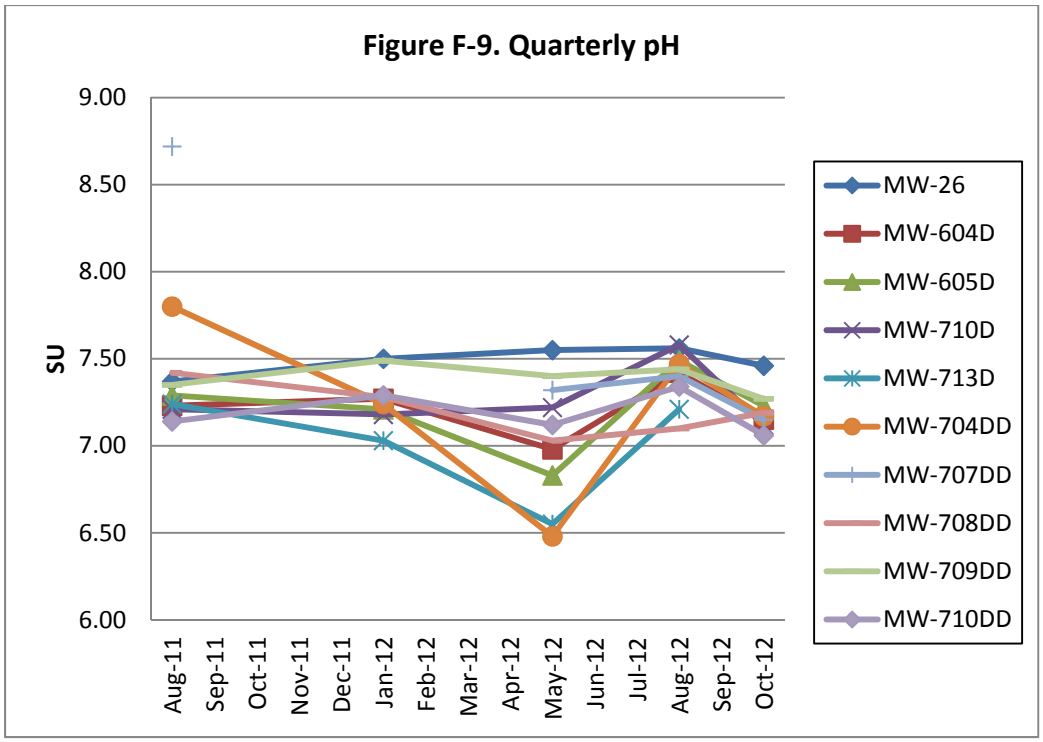


Figure F-9. Quarterly pH
9.00
8.50
8.00
7.50
7.00
6.50
6.00
SU
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Jan-12
Feb-12
Mar-12
Apr-12
May-12
Jun-12
Jul-12
Aug-12
Sep-12
Oct-12
MW-26
MW-604D
MW-605D
MW-710D
MW-713D
MW-704DD
MW-707DD
MW-708DD
MW-709DD
MW-710DD

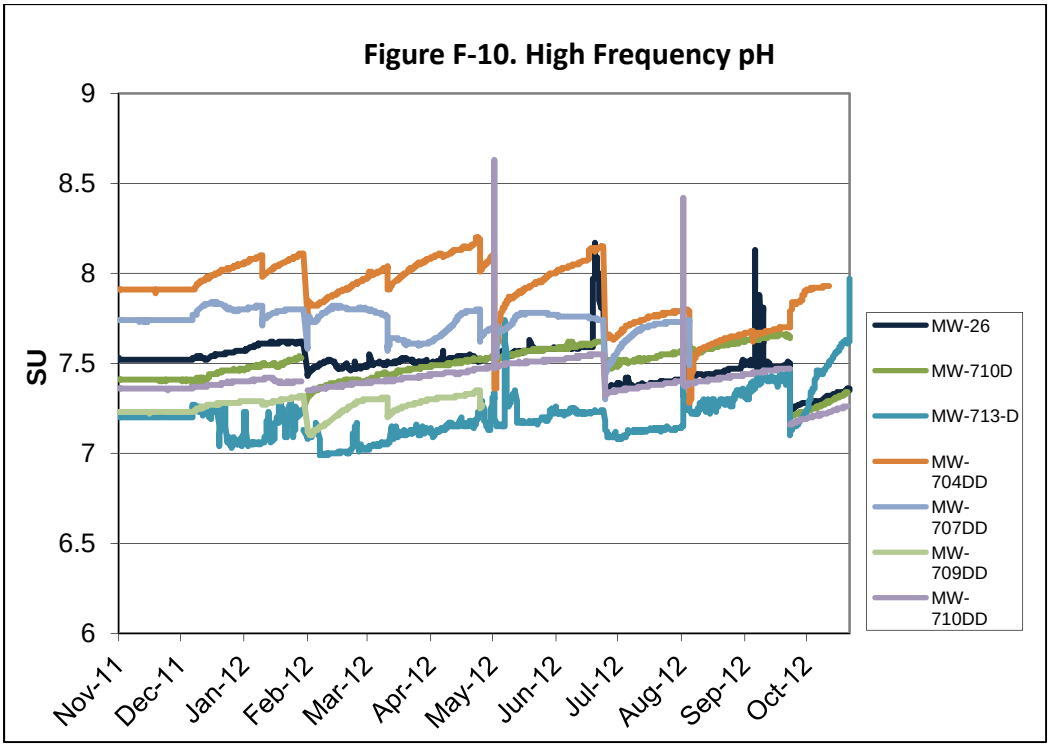


Figure F-10. High Frequency pH
9
8.5
8
7.5
7
6.5
6
SU
Nov-11
Dec-11
Jan-12
Feb-12
Mar-12
Apr-12
May-12
Jun-12
Jul-12
Aug-12
Sep-12
Oct-12
MW-26
MW-710D
MW-713-D
MW-704DD
MW-707DD
MW-709DD
MW-710DD

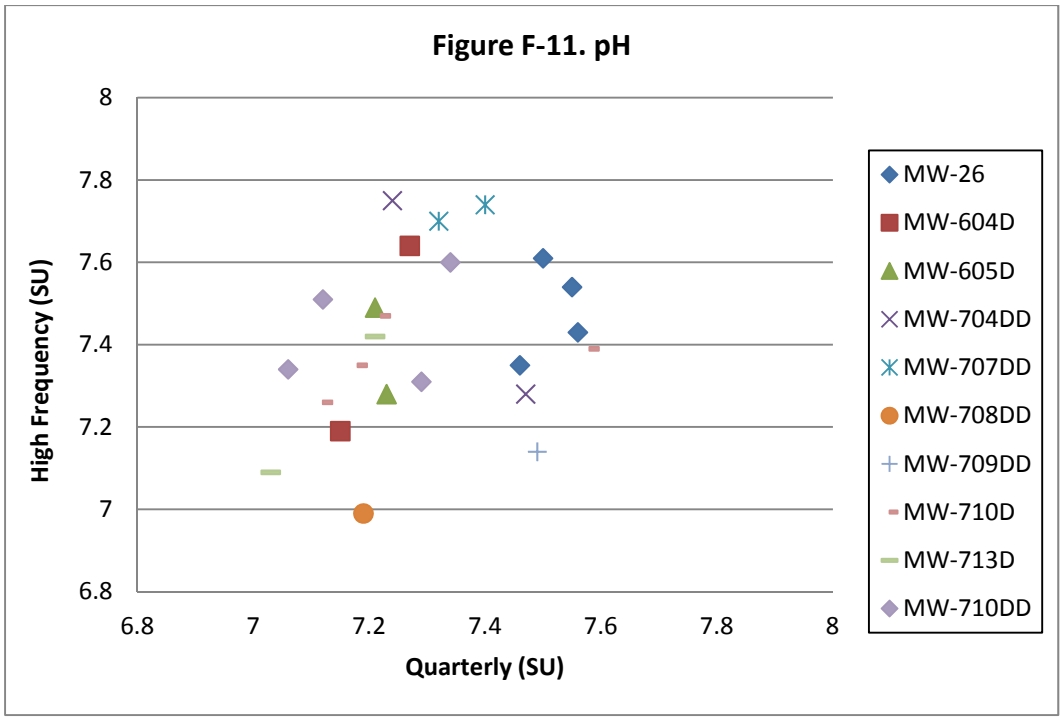


Figure F-11. pH
High Frequency (SU)
8
7.8
7.6
7.4
7.2
7
6.8
6.8
7
7.2
7.4
7.6
7.8
8
Quarterly (SU)
MW-26
MW-604D
MW-605D
MW-704DD
MW-707DD
MW-708DD
MW-709DD
MW-710D
MW-713D
MW-710DD

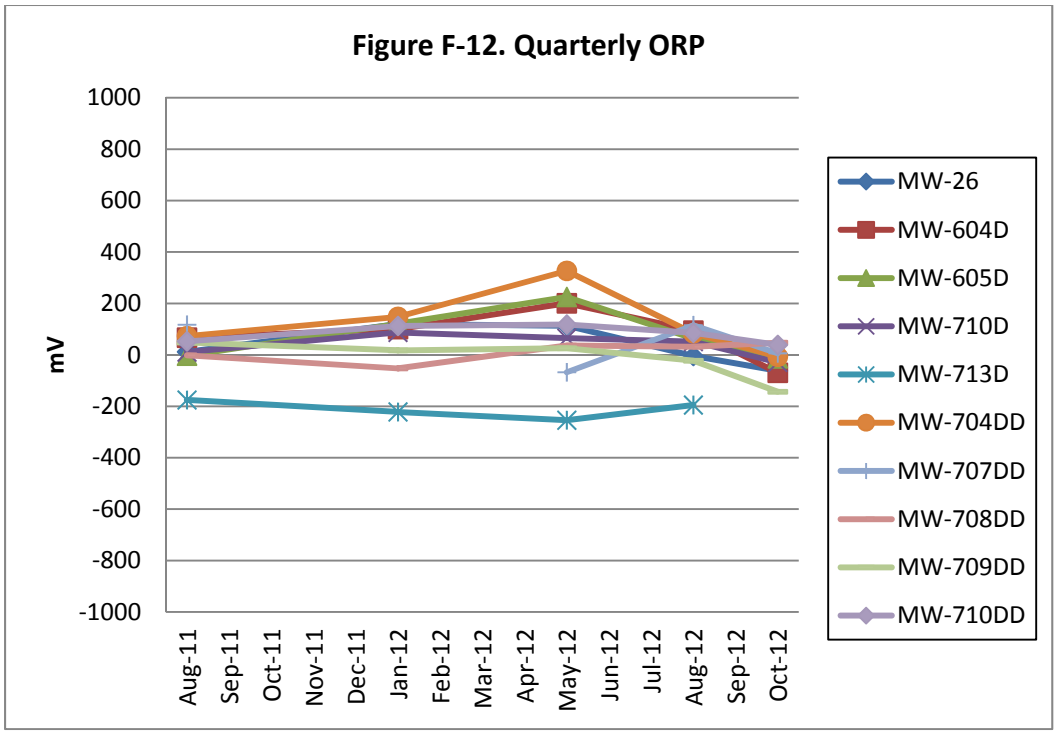


Figure F-12. Quarterly ORP
mV
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Jan-12
Feb-12
Mar-12
Apr-12
May-12
Jun-12
Jul-12
Aug-12
Sep-12
Oct-12
MW-26
MW-604D
MW-605D
MW-710D
MW-713D
MW-704DD
MW-707DD
MW-708DD
MW-709DD
MW-710DD

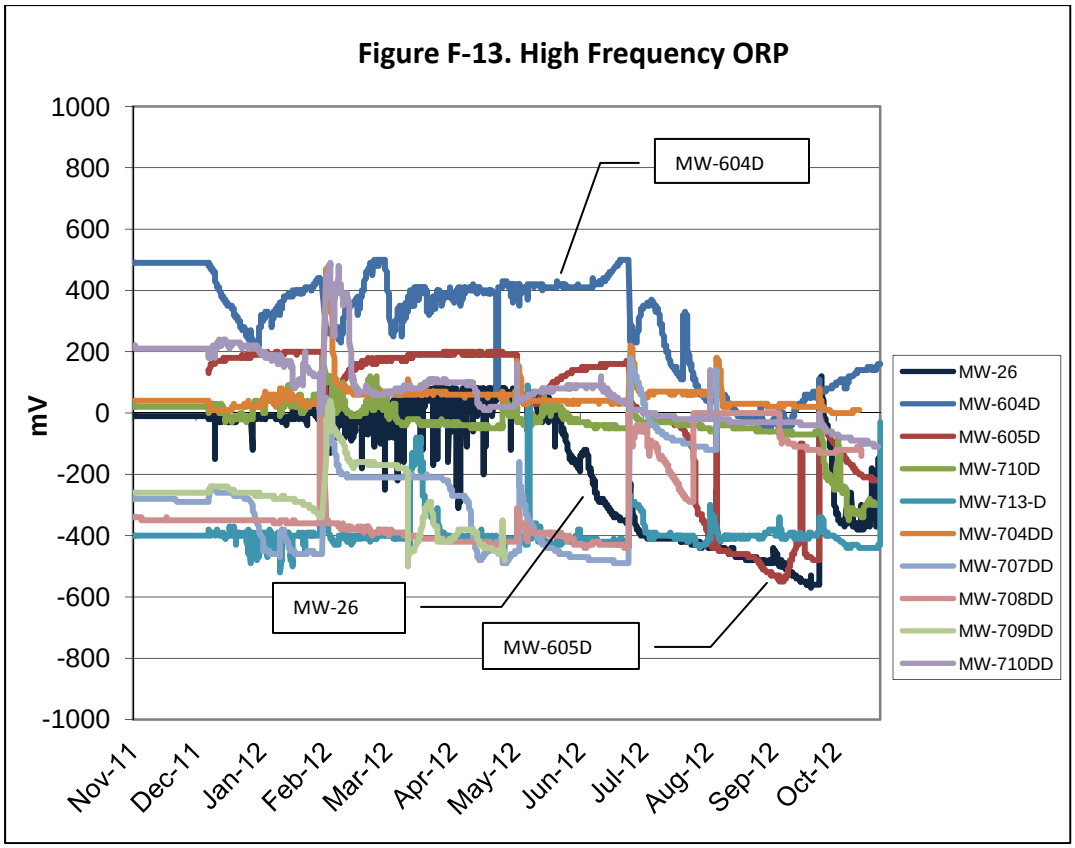


Figure F-13. High Frequency ORP
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
mV
Nov-11
Dec-11
Jan-12
Feb-12
Mar-12
Apr-12
May-12
Jun-12
Jul-12
Aug-12
Sep-12
Oct-12
MW-604D
MW-26
MW-605D
MW-26
MW-604D
MW-605D
MW-710D
MW-713-D
MW-704DD
MW-707DD
MW-708DD
MW-709DD
MW-710DD

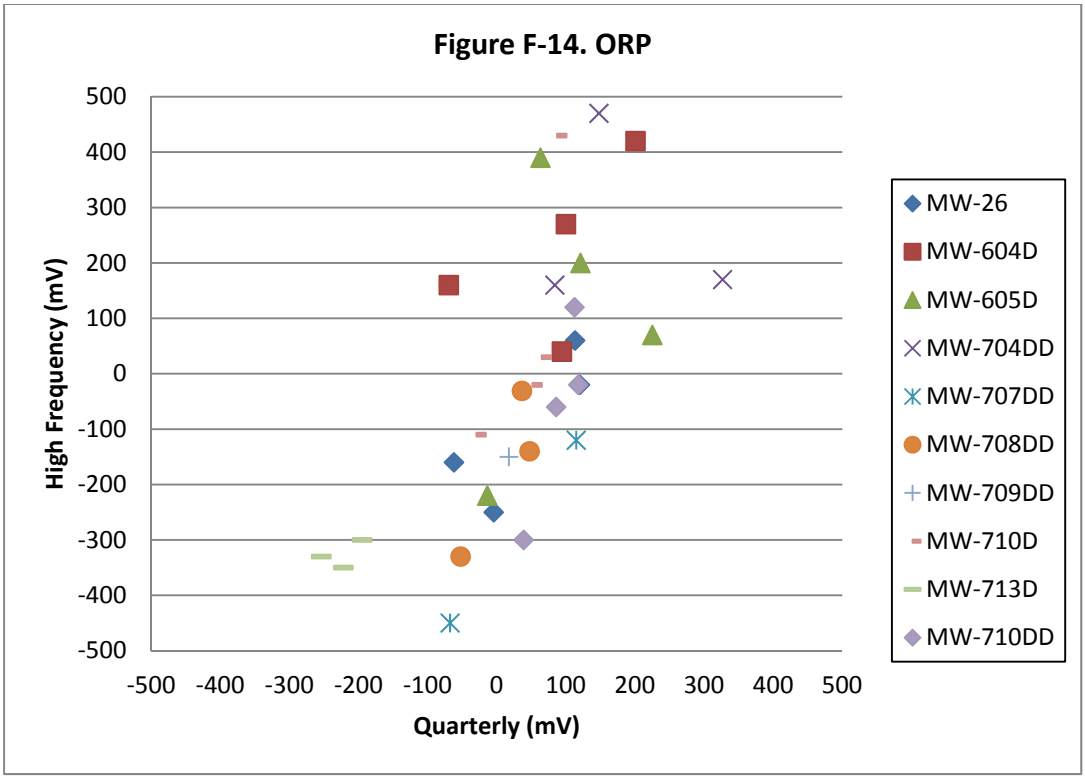


Figure F-14. ORP
500
400
300
200
100
0
-100
-200
-300
-400
-500
High Frequency (mV)
-500
-400
-300
-200
-100
0
100
200
300
400
500
Quarterly (mV)
MW-26
MW-604D
MW-605D
MW-704DD
MW-707DD
MW-708DD
MW-709DD
MW-710D
MW-713D
MW-710DD

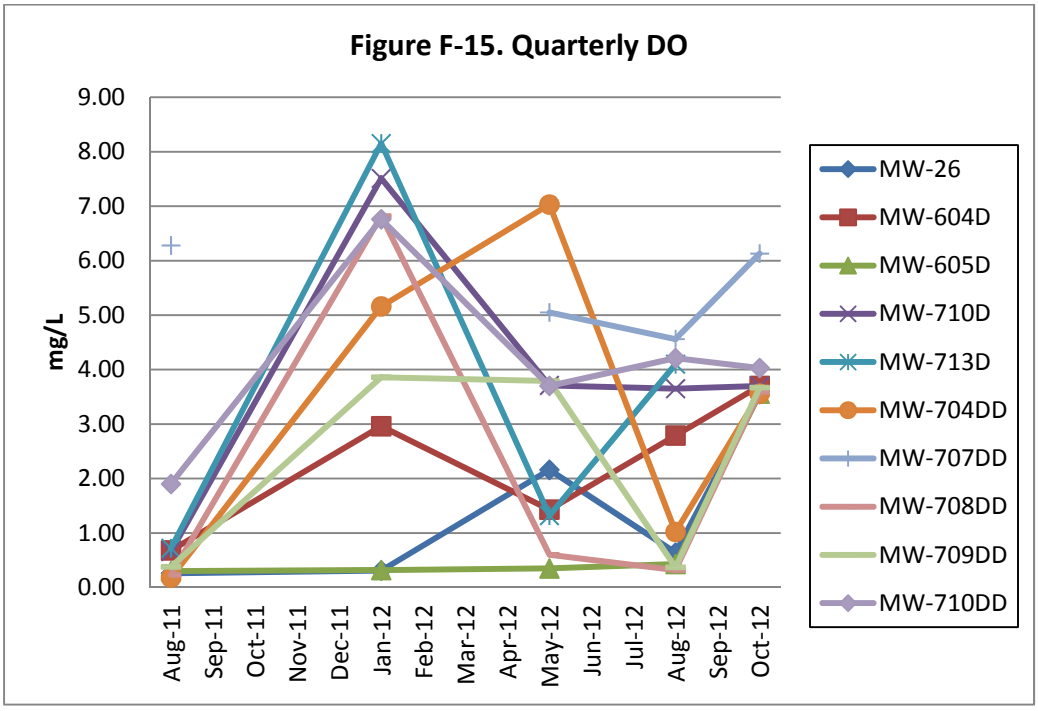


Figure F-15. Quarterly DO
mg/L
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Jan-12
Feb-12
Mar-12
Apr-12
May-12
Jun-12
Jul-12
Aug-12
Sep-12
Oct-12
MW-26
MW-604D
MW-605D
MW-710D
MW-713D
MW-704DD
MW-707DD
MW-708DD
MW-709DD
MW-710DD

APPENDIX G

Evaluation of Uranium Concentration Trends

Appendix G
Evaluation of Uranium Concentration Trends

Time trends in uranium concentrations at 18 wells were evaluated using graphical and statistical methods to determine if any significant trends are present. The wells selected for evaluation had four or more sample events and uranium (U) concentrations above 10 µg/L in one or more samples that were obtained over an approximately 5-year monitoring period. This concentration screening value was developed in a previous evaluation based on $^{234}U/^{238}U$ ratios. Samples with uranium concentrations below 10 µg/L have isotopic ratios that indicate a natural background source, whereas most samples with uranium concentrations above 10 µg/L have ratios that suggest a local contaminant source for the majority of the detected uranium. An additional 12 wells that were sampled four or more times are part of the monitoring network. Samples from these wells have on average less than 10 µg/L U and are not discussed here because they most likely represent background concentrations. A set of seven new wells that were sampled five times over a 1.2 year period are also evaluated here, although the monitoring period is too short to yield valid trends.

The 18 impacted wells were grouped for plotting purposes into four categories based on ranges of uranium concentrations so that the trends can be clearly seen on the trend plots. These categories are 10-15, 15-30, 30-90, and >90 µg/L U. This grouping allows three to six wells per plot, as shown on Figures G-1 through G-4. Most of the wells were sampled five times (November 2007, September 2009, September 2010, August 2011, and October 2012). Three of the wells with higher U concentrations (MW-26, MW-604D, and MW-605D) have more recent quarterly samples so nine samples are available for these wells.

The U concentrations shown on the plots were calculated by converting the activities (as pCi/L) of each of the ^{234}U, ^{235}U, and ^{238}U isotopes to mass (as µg/L) based on their specific activity constants (as Ci/g) and summed. Analyses of filtered (0.45 micron) samples were used in the evaluation. Duplicate results were averaged together for plotting purposes. Figures G-1 through G-4 do not appear to show any consistent trends over the 5-year monitoring period.

An additional perspective is provided in Figure G-5, which shows mean U concentrations for each of the five sample events calculated from the 18 impacted wells. Error bars are set equal to plus and minus one standard deviation for each sample event. This plume-wide mean perspective shows that the standard deviations in U concentrations at each sample event are of the same magnitude as the mean concentrations at each sample event, and that the differences in means between events is much less than the standard deviations of the individual means. These results imply that any trend in the plume-wide averages, if present, would not be detectable over the 5-year monitoring period.

Kendall-Tau Test of Trend

Kendall's tau, which is equivalent to the Mann-Kendall test, is used here as a trend estimator as recommended by the EPA. It compares repeated measurements of an analyte concentration over time, and tests the null hypothesis that the measurements exhibit no temporal trend. It is a nonparametric test, which means that it is based on the direction of change in concentration (up or down) over time rather than the magnitude of the change over time.

To perform the test, the *signs* (positive for increases, negative for decreases) of all possible pairs of data points are summed. For instance, if there are four sequential measurements (1, 2, 3, and 4), then the signs of 1 versus 2, 1 versus 3, 1 versus 4, 2 versus 3, 2 versus 4, and 3 versus 4 are summed. If there is no real trend, then the number of positive and negative signs will be roughly equal, although some differences would be expected due to chance. However, if there are many more increases than decreases between the pairs, then a real upward trend is indicated, and if there are many more decreases than increases between the pairs, then a real downward trend is indicated.

The test returns a *tau* coefficient that equals the sum of the signs divided by the total number of sample pairs available. If the concentrations consistently increase at each successive sample event, then *tau* equals +1, if the concentrations consistently decrease at each successive sample event, then *tau* equals –1, and if the number of positive and negative signs are equal, then *tau* equals zero. For all other arrangements *tau* lies between −1 and 1. The *tau* coefficient is converted to a *p*-value based on the normal distribution. The *p*-value can be thought of as the probability of the null hypothesis of no trend being true. The test was performed at a 95 percent confidence level, at which there is only a 5 percent chance of incorrectly accepting the null hypothesis (no trend is present) when a trend actually is present. At this confidence level, *p*-values below 0.05 indicate a statistically significant trend, whereas *p*-values above 0.05 indicate that any apparent trend is likely due to chance and is not significant.

Trends at all 30 wells (impacted and unimpacted wells sampled four or more times) were tested. Test results are shown in Table G-1. Of the 30 wells that were monitored for approximately 5 years, MW-3 and MW-602D are the only ones that show significant trends. MW-3 is a background well with a significant downward trend, and MW-602D is an impacted well with a significant downward trend.

Table G-1 also shows the results of the seven new wells based on four or five quarterly samples with a monitoring period of 0.7 to 1.2 years (note: no isotopic U data were obtained for well MW-707DD in August 2011 because the well was dry). These results are provided for completeness and are not considered to be evidence for any real trends because the component of

variance due to analytical uncertainties is larger than the variance due to any trends. These results show three significant downward trends and one significant upward trend. Given that a stable plume has been in existence for several decades, it is unlikely that trends, if present, at these locations would be detectable over a 1.2 year monitoring period.

In summary, the graphical and statistical results of trend evaluations at the 30 wells that have been monitored for 5 years indicate that no statistically significant trends in uranium concentrations are detectable.

Table G-1. Kendall-Tau Trend Test Results

Well	Number of Samples	Monitor Period (Yrs)	Tau	Direction	p-Value	Significant?	Category (U range in ug/L)
MW-1	5	4.9	0.00	None	1.000	No	<10
MW-14	4	3.8	0.00	None	1.000	No	<10
MW-15	4	3.8	-0.67	Down	0.174	No	<10
MW-17	4	3.8	0.67	Up	0.174	No	<10
MW-21	5	5.0	0.00	None	1.000	No	<10
MW-23	5	4.9	-0.40	Down	0.327	No	<10
MW-3	4	3.8	-1.00	Down	0.042	Yes	<10
MW-5	4	3.8	0.00	None	1.000	No	<10
MW-6	4	3.7	0.00	None	1.000	No	<10
MW-600D	5	4.9	-0.20	Down	0.624	No	<10
MW-603D	5	4.9	0.40	Up	0.327	No	<10
MW-8	4	3.7	0.33	Up	0.497	No	<10
MW-19	5	4.9	0.60	Up	0.142	No	10-15
MW-20	5	4.9	-0.20	Down	0.624	No	10-15
MW-606DR	4	3.7	0.00	None	1.000	No	10-15
MW-607D	5	4.9	0.40	Up	0.327	No	10-15
MW-11	5	4.9	0.60	Up	0.142	No	15-30
MW-16	5	4.9	0.20	Up	0.624	No	15-30
MW-2	5	4.9	0.20	Up	0.624	No	15-30
MW-24	5	4.9	0.60	Up	0.142	No	15-30
MW-601D	5	4.9	-0.20	Down	0.624	No	15-30
MW-9	5	4.9	0.40	Up	0.327	No	15-30
MW-13D	5	4.9	0.40	Up	0.327	No	30-90
MW-22	5	4.9	-0.20	Down	0.624	No	30-90
MW-4	5	4.9	0.00	None	1.000	No	30-90
MW-18	5	4.9	-0.20	Down	0.624	No	>90
MW-26	9	4.9	0.08	Up	0.751	No	>90
MW-602D	5	4.9	-0.80	Down	0.050	Yes	>90
MW-604D	9	4.9	-0.60	Down	0.751	No	>90
MW-605D	9	4.9	0.40	Up	0.677	No	>90
New Wells							
MW-704DD	5	1.2	0.40	Up	0.327	No	30-90
MW-707DD	4	0.7	-1.00	Down	0.042	Yes	10-15
MW-708DD	5	1.2	-0.60	Up	0.142	No	15-30
MW-709DD	5	1.2	0.80	Up	0.050	Yes	30-90
MW-710D	5	1.2	0.20	Up	0.624	No	30-90
MW-710DD	5	1.2	-1.00	Down	0.014	Yes	30-90
MW-713D	5	1.2	-0.80	Down	0.050	Yes	< 10

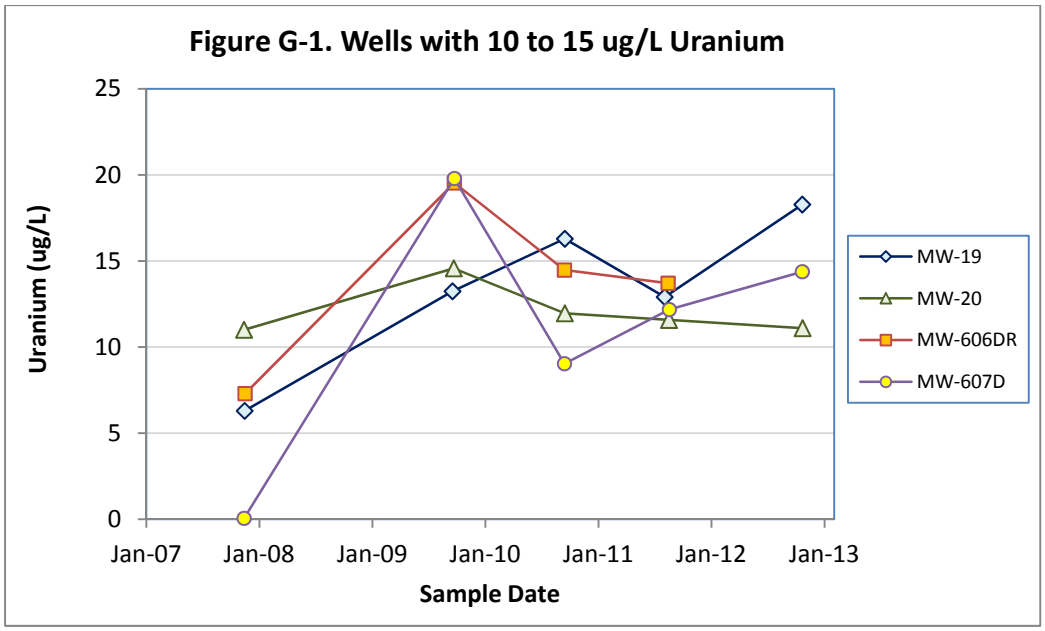


Figure G-1. Wells with 10 to 15 ug/L Uranium
Uranium (ug/L)
25
20
15
10
5
0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Sample Date
MW-19
MW-20
MW-606DR
MW-607D

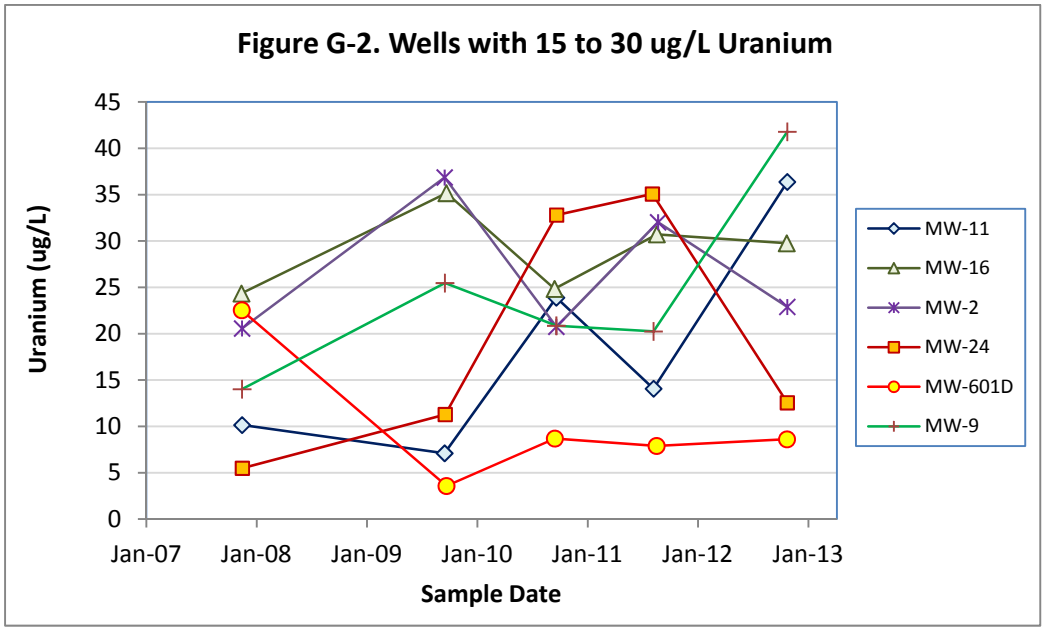


Figure G-2. Wells with 15 to 30 ug/L Uranium
Uranium (ug/L)
45
40
35
30
25
20
15
10
5
0
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Sample Date
MW-11
MW-16
MW-2
MW-24
MW-601D
MW-9

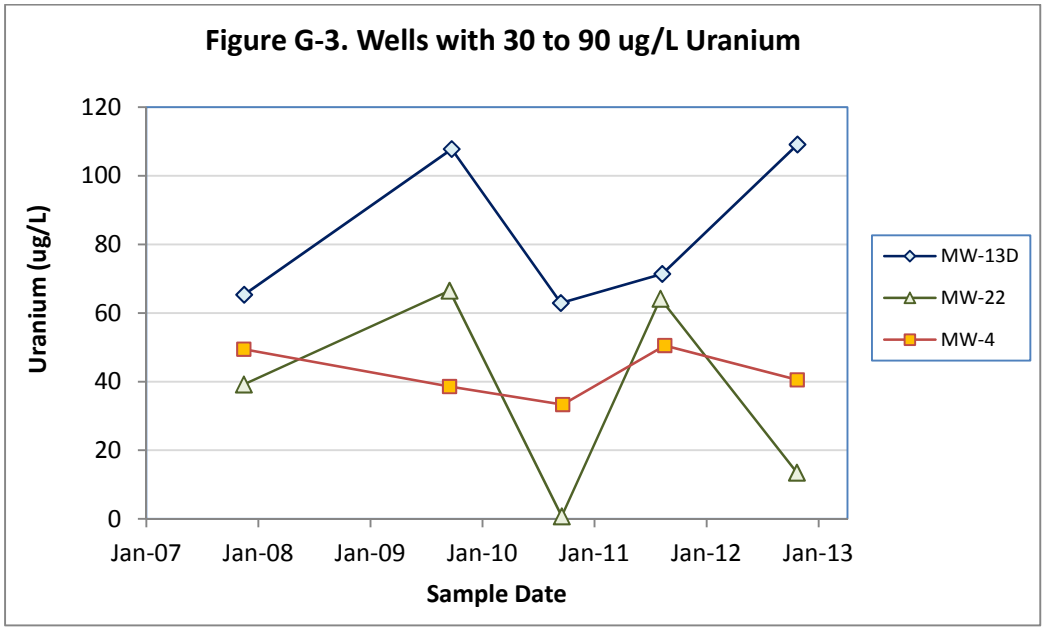


Figure G-3. Wells with 30 to 90 ug/L Uranium
120
100
80
60
40
20
0
Uranium (ug/L)
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Sample Date
MW-13D
MW-22
MW-4

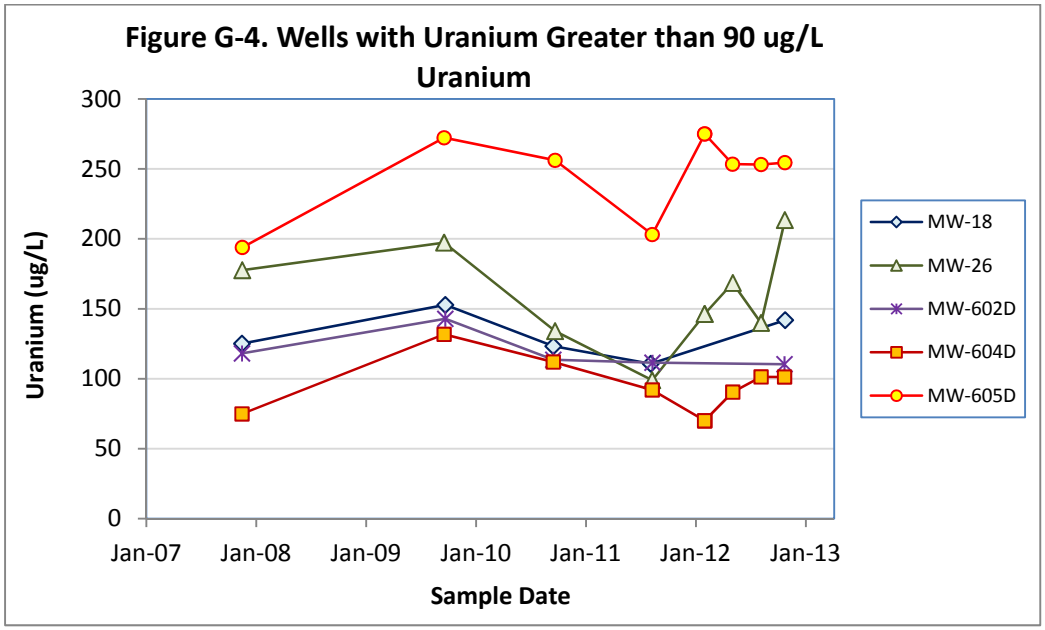


Figure G-4. Wells with Uranium Greater than 90 ug/L Uranium
300
250
200
150
100
50
0
Uranium (ug/L)
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Sample Date
MW-18
MW-26
MW-602D
MW-604D
MW-605D

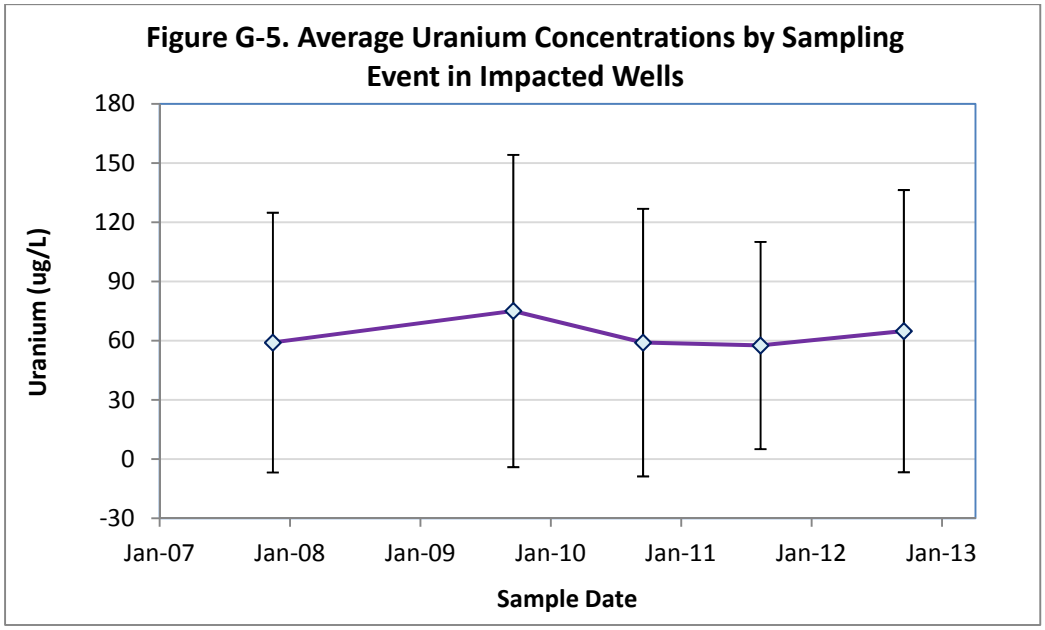


Figure G-5. Average Uranium Concentrations by Sampling Event in Impacted Wells
Uranium (ug/L)
180
150
120
90
60
30
0
-30
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Sample Date

APPENDIX C

Niagara County Department of Health Well Survey,

Guterl Steel Site Vicinity Summary of Results (2012)

NIAGARA COUNTY DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH DIVISION
5467 Upper Mountain Road, Suite 100
Lockport, New York 14094-1894

(716) 439-7444
(716) 439-7427 FAX

July 23, 2012

Sheila Hint
Environmental Engineer
US Army Corps of Engineers
1776 Niagara St. Buffalo, NY 14207

Re: NCDOH Well Survey
Guterl Steel Site Vicinity
Summary of Result

Dear Ms. Hint,

The Niagara County Department of Health undertook a well survey of a select area of residential properties in the City of Lockport (1/2 mile radius from Guterl Steel on Ohio Street) with the purpose to attempt to identify the location, operability and current use of all existing groundwater wells in the study area. It is noted that public water supply by the City of Lockport is supplied to all subject properties.

A Letter with a Well Water Questionnaire and an envelope with return postage was mailed April 30, 2012 to 196 residents. Non-responders were followed up with a telephone call when a telephone number was available. A second mailing was sent out June 6, 2012 to remaining non-responders.

The results as of this date are as follows;
49 property owners did not respond.
138 responded there was no well present
9 property owners reported one or more wells on the property but no well was in use.

Of the 9 properties, 10 wells were identified;
-3 wells were reported to be filled in and permanently abandoned
-2 property owners list there wells as abandoned but do not indicate if they could be made operable and have not responded to follow-up inquiries.
-1 well is to be permanently abandoned soon due to a scheduled house addition. No well sampling was requested.
-1 property owner with two wells has no intention of activating and does not request any sampling.

-1 property owner has no intention of using well but requests verification through well sampling that contamination has not spread to property. The well is currently covered and would need to be located.

-1 property owner was contemplating making well operable for landscaping purposes and asks that the USACE sample the water to insure Guterl Site Contaminants are not present.

The Department formally requests on behalf of the last two property owners located on Crosby Avenue be contacted by your office to discuss the investigation of Guterl and how sampling of their well might improve that investigation and provide assurance that contamination has not migrated to adjacent properties to the east of Guterl.

You may direct any questions regarding this survey and the names and addresses of residents requesting further sampling to Paul Dicky, P.E., Supervising Public Health Engineer at 439-7595.

Very truly yours,

James J. Devald, P.E.
Director of Environmental Health

APPENDIX D

Uranium Transport in Groundwater

Mass Balance Calculation

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

Feasibility Study Report

Appendix D
Uranium Transport in Groundwater Mass Balance Calculation

Former Guterl Specialty Steel Corporation
Formerly Utilized Sites Remedial Action Program (FUSRAP) Site
Lockport, New York

U.S. Army Corps of Engineers Buffalo District

January 2018

Table of Contents

List of Tables 3
List of Figures 3
Acronyms and Abbreviation 4
1.0 INTRODUCTION 5
1.1 Background 5
1.2 Purpose and Objectives 5
2.0 REMEDIAL INVESTIGATION AND DATA GAP INVESTIGATION DATA SUMMARY 6
2.1 Site Groundwater Levels 6
2.2 Erie Canal Surface Water Sampling 6
2.3 Erie Canal Seep Surveys 7
3.0 GROUNDWATER / SURFACE WATER MIXING CALCULATIONS 8
3.1 Groundwater Discharge Rate 8
3.2 Erie Canal Flow 9
3.3 Uranium Concentration Dilution Factor 9
4.0 MAXIMUM URANIUM CONCENTRATION IN THE ERIE CANAL 10
5.0 MAXIMUM TOLERABLE GUTERL SITE GROUNDWATER CONCENTRATION 10
6.0 CONCLUSIONS 11
7.0 REFERENCES 13
TABLES 14
FIGURES 16

List of Tables

Table	*Title*
1	Evaluation of Potential for Exceeding Uranium MCL in Erie Canal

List of Figures

Figure	*Title*
1	Seeps and Surface Water – Sampling Results, 2011-2012
2	Potentiometric Surface Map – Shallow Wells – August 3, 2011
3	Potentiometric Surface Map – Deep Wells – August 3, 2011
4	Total Uranium in Shallow Groundwater (August 2011)

Acronyms and Abbreviation

µg/L	micrograms per liter
CB&I	CB&I Federal Services LLC
cms	cubic meters per second
cfs	cubic ft per second
DGI	Data Gap Investigation
ft	foot/feet
Guterl Site	Guterl Specialty Steel Corporation Site
m	meters
MCL	maximum contaminant level
msl	mean sea level
RI	Remedial Investigation
Simonds	Simonds Saw and Steel Company
USACE	United States Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency

1.0 INTRODUCTION

CB&I Federal Services LLC (CB&I), working under contract with the United States Army Corps of Engineers (USACE), Buffalo District Contract Number W912QR-08-D-0013, Delivery Order No. DN03, has prepared this Mass Balance Calculation report for the former Guterl Specialty Steel Corporation Site (Guterl Site) (previously known as the Simonds Saw and Steel Company [Simonds]). The processing of natural uranium metal at the Guterl Site resulted in dust, mill shavings, and associated land disposal that contaminated on-site soils and facility buildings. The contaminated soils act as potential sources of the uranium-impacted groundwater. Groundwater in the shallow, as well as deep, bedrock underlying the Guterl Site has been documented to be impacted with uranium, as described in the Remedial Investigation (RI) Report (USACE, 2010), the data obtained during subsequent data gap investigation (DGI) conducted in 2011 (USACE, 2012a, b), and supplemental sampling performed (USACE, 2013).

1.1 Background

Findings of the DGI (USACE 2012b) indicate that uranium in groundwater underneath the site is migrating toward the Erie Canal. The Erie Canal is located across from the southeastern boundary of the site parallel to Ohio Street, approximately 90 meters (m) (300 feet [ft]) south of the site. As shown in Figure 1, seeps were observed during the DGI at eight unique locations along the northern wall of the Erie Canal.

The Erie Canal is excavated into bedrock along the channel length that is adjacent to the site. In the vicinity of the Guterl Site, the Erie Canal flows from west to east, from the Niagara River toward Lockport Locks 34 and 35, northeast of the Guterl Site. The surface water elevation in the Erie Canal immediately south of the Guterl Site fluctuates by several feet due to seasonal control of the navigable water level. From November 20 through April 20, the lower Erie Canal is dewatered (below the Lockport Locks between the bulkhead in Pendleton, New York, and the Genesee River), and there is no measurable flow in the vicinity of the emergency water intake shown in Figure 1. The water elevation is lowered during these winter months with less than 0.6 m (2 ft) of standing water in the Erie Canal. Between spring and fall, from April 20 through November 20, the Erie Canal is made navigable by raising the water levels to 3.6 m (12 ft). During this period, the average flow rate is 0.6 m per second (2 ft per second) (USACE, 2010).

1.2 Purpose and Objectives

To demonstrate that the risk of future exposure from the ingestion of uranium released from the site groundwater to the Erie Canal waters is minimal, calculations were performed to estimate the effects of the mixing of site groundwater with Erie Canal water. The resultant concentrations of uranium in Erie Canal surface waters were obtained from these calculations. A dilution ratio was used to back-calculate the maximum uranium concentration in Guterl Site groundwater that, after seeping into the Erie Canal, could result in elevating the uranium concentrations in the Erie Canal above the drinking water standard of 30 micrograms per liter (µg/L), which is the federal maximum contaminant level (MCL) established by the U.S. Environmental Protection Agency (U.S. EPA). Details of the approach and results are presented in the following sections.

2.0 REMEDIAL INVESTIGATION AND DATA GAP INVESTIGATION DATA SUMMARY

2.1 Site Groundwater Levels

Figure 2 shows that the August 3, 2011, shallow groundwater level elevations along the southeastern Guterl Site boundary ranged from 179.02 m (587.34 ft) above mean sea level (msl) at MW-713D to 175.09 m (574.46 ft) above msl at MW-712D. Figure 2 also shows the locations and the elevations of the seeps that were observed to discharge to the Erie Canal. The elevations of these seeps were 173.95 m (570.7 ft) above msl and 174.25 m (571.7) ft above msl, which were 1.15 m (3.76 ft) and 0.84 m(2.76 ft) lower than the lowest groundwater elevation measured at the Guterl Site boundary. The groundwater elevations and flow directions shown on Figure 2, when compared to the seep elevations, indicate that shallow bedrock groundwater is discharging to the Erie Canal as seeps.

Figure 3 shows that the groundwater elevation in monitoring well MW-712DD, located along the southeastern Guterl Site boundary, was 172.56 m (566.15 ft) above msl on August 3, 2011. This elevation is lower than the elevation of either of the two seeps observed on August 3, 2011, which were 173.95 m (570.7 ft) above msl and 174.25 m (571.7) ft above msl. This indicates that the deep bedrock groundwater is not the origin of the observed seeps. This deep groundwater flows toward the Erie Canal, yet cannot be directly observed as seeps. When the Erie Canal water level is lower in the winter ice falls are evident; however, the source seeps cannot be distinguished.

2.2 Erie Canal Surface Water Sampling

Surface water samples were collected from 12 locations in the Erie Canal on September 12, 2007, during the RI. Three of these locations were upstream of the Guterl Site groundwater discharge to the Erie Canal and had total uranium concentrations that were less than 1 µg/L, ranging from 0.3 to 0.4 µg/L. This range is considered ambient or background concentrations for the Erie Canal based on the samples taken during the RI. The other nine samples, collected at locations where groundwater flow from the Guterl Site could potentially discharge to the Erie Canal, also had total uranium concentrations less than 1 µg/L, ranging from 0.3 to 0.7 µg/L. As shown on Figure 1, surface water samples were collected during the DGI at two locations on May 7, 2012, (0.5 µg/L total uranium in both samples), one of which was resampled on October 25, 2012 (0.6 µg/L total uranium). All sample results indicate that only background concentrations of uranium were detected in the surface water in the Erie Canal.

Emergency drinking water for the City of Lockport is occasionally supplied from the Summit Street intakes located in the Erie Canal immediately southeast of the site (New York State Department of Environment Conservation, 1994). According to Niagara County Health Department, the most recent use of the emergency water intakes occurred September 16 and 18, 1990, August 10, 1992, November 2, 1992, May 18, 1993, September 18, 1993, and July 1997 (specific date not available) (New York State Department of Health, 2008). Two surface water samples were collected on May 7, 2012, and on October 25, 2012, near the emergency water intake (Figure 1). The total uranium concentration in these samples ranged from 0.5 to 0.6 µg/L, which falls within the range of other water sample results from the Erie Canal and is

attributed to naturally occurring uranium.

In summary, the surface water samples collected at locations where site groundwater may discharge in the Erie Canal and at the emergency water intake, show uranium concentrations ranging from 0.3 to 0.7 µg/L. These concentrations are not distinguishable from background surface water uranium concentration of 0.4 µg/L and are below the total uranium MCL of 30 µg/L.

2.3 Erie Canal Seep Surveys

As part of the DGI, a reconnaissance survey was conducted on September 8, 2011, to document the locations of groundwater seeps along the Erie Canal, and collect samples representing the discharge of site groundwater to the Erie Canal. The Erie Canal walls were visually inspected for evidence of seeping groundwater along an approximate 1.21 kilometer (0.75 mile) section of the Erie Canal, which was bounded by the Lockport Bypass located upstream of the Guterl Site and the Stevens Street Bridge located downstream of the site. No seeps were observed along the southern rock face of the Erie Canal. Seeps were observed at two locations along the northern rock face of the Erie Canal. Seep samples were collected at Seep-1108-01 and Seep-1108-02 (Figure 1). Seep-1108-01 was located approximately 90 m (300 ft) downstream of a pipeline crossing the Erie Canal and 1.8 m (6 ft) above the water surface in the Erie Canal, while Seep-1108-02 was located approximately 46 m (150 ft) downstream of the Lockport Bypass and 1.5 m (5 ft) above the water surface in the Erie Canal. The elevations of the two seeps are higher than the elevation of the base of the shallow bedrock groundwater zone, indicating that groundwater seepage to the Erie Canal originates from the shallow bedrock. The concentration of total uranium (unfiltered) in Seep-1108-01 was 44.9 µg/L, which exceeds the total uranium MCL for drinking water, while Seep-1108-02 had a total uranium (unfiltered) concentration of 6.3 µg/L.

A second survey of the Erie Canal was conducted on December 7, 2011. Seep locations are displayed as Seeps 1112-01 through 1112-06 on Figure 1. Six locations were identified where groundwater was observed to seep through the northern wall of the Erie Canal; Seep-1112-03 was co-located with the Seep-1108-01 that was sampled in August 2011.

Total uranium (unfiltered) concentrations in the seeps ranged from 3.5 µg/L at Seep-1112-02 to 25.9 µg/L at Seep-1112-04. None of the samples exceeded the total uranium MCL for drinking water. During this sampling event, the Erie Canal was seasonally drained of water, with only small accumulations of water remaining at the canal bottom. The December seep elevations were higher than the August seep elevations. In August, the seeps were 1.8 to 2.0 m (6 to 6.5 ft) above the navigation season water surface. The December seeps were observed at approximately 6 m (20 ft) higher than the non-navigation water surface, equivalent to 2.4 to 3.0 m (8 to 10 ft) above the navigation season water level, or approximately 0.6 to 1.2 m (2 to 4 ft) higher than the August seep elevations.

A third survey of the Erie Canal walls was conducted on May 7, 2012. Three locations were identified where groundwater was observed to seep through the northern wall of the Erie Canal; two of which, Seep-1205-01 and Seep-1205-03, were collocated with Seep-1108-02 and Seep 1108-01, respectively, that were sampled in August 2011. The seep locations are displayed as Seep-1205-01 through Seep-1205-03 in Figure 1. Total uranium (unfiltered)

concentrations in the seeps ranged from 5.3 µg/L at Seep-1205-01 to 20.7 µg/L at Seep-1205-03, all below the total uranium MCL for drinking water.

3.0 GROUNDWATER / SURFACE WATER MIXING CALCULATIONS

3.1 Groundwater Discharge Rate

Groundwater from the Guterl Site migrates toward the Erie Canal through a weathered fractured bedrock system. In contrast to a homogenous porous media, where groundwater flows through the entire saturated medium, flow in fractured rock occurs through a small fraction of the rock mass, while the remainder of the rock mass is competent and does not have connected void spaces through which groundwater can flow. The rate of groundwater flow, represented by groundwater velocities through individual fractures can be high, akin to flow through a narrow diameter conduit; however, the fractures usually occupy only a very small fraction of the bedrock groundwater system. Therefore, even when groundwater velocities through individual fractures may be high, the average volumetric flow rates through the fractured system can be low.

Groundwater flowing through the fracture system underlying the Guterl Site carries dissolved uranium to the Erie Canal, where the groundwater has been observed to seep through the Erie Canal wall, as previously discussed. Although long-term data are not available, observations made since August 2011 indicate that the seeps are low volume (less than 1 gallon per minute flow), and limited to eight distinct locations above the water line. Although this low-volume discharge contains dissolved uranium, the mixing with a much larger volume of water in the Erie Canal causes significant dilution.

Mixing calculations were performed assuming worst-case conditions: groundwater discharges to the Erie Canal from a contiguous seepage face along the width of the uranium plume greater than 30 µg/L, as delineated on Figure 4. The driving groundwater flow condition is considered an equivalent porous media, where groundwater flows through the entire saturated media rather than discrete fractures.

The average groundwater discharge rate from the shallow groundwater to the Erie Canal was calculated using Darcy's Law as follows:

$$Q_{gw} = \frac{KiA}{n_e} = \frac{Kiwb}{n_e}$$

Where:

- Q_{gw} is the average groundwater discharge rate [L^3/T]
- K is the hydraulic conductivity [L/T]
- i is the hydraulic gradient [L/L]
- A is the cross-sectional area through which groundwater flows [L^2]
- w is the width of the groundwater discharge zone [L]
- b is the depth of the discharge zone [L]

- n_e is effective porosity of shallow bedrock [dimensionless]
- K = 3.5 x 10^{-5} m/sec (10 ft/day), geometric mean of the shallow bedrock slug test measurements (USACE, 2012b)
- i = 0.0602 m/m (ft/ft), measured between shallow wells MW-604D and MW-712D, located south of the former buildings area toward the Erie Canal
- w = 229 m (750 ft), measured from Figure 4 as the width of the groundwater discharge zone at the Erie Canal where uranium concentration exceeds 30 µg/L
- b = 5.6 m (18.5 ft), conservatively estimated as the entire vertical extent between the average August 2011 seep elevation (174.1 m [571.2 ft]) and the Erie Canal bottom elevation (168.5 m [552.7 ft])
- n_e = 0.05, estimated for bedrock in vicinity of the Erie Canal

The average groundwater flow rate, Q_{gw}, was calculated to be 5.4 x 10^{-2} cubic meters per second (cms) (167,000 cubic ft per day or 1.9 cubic ft per second [cfs]). This is a conservatively high estimate that assumes the shallow groundwater plume discharges to the Erie Canal across a fully saturated vertical section that extends from the top of the observed seeps to the Erie Canal bottom.

3.2 Erie Canal Flow

The volumetric flow rate in the Erie Canal was estimated as follows:

$$Q_{canal} = W\ D\ V$$

Where:

- Q_{canal} is the Erie Canal discharge rate [L^3/T]
- W is the width of Erie Canal [L]
- D is the height of water column in the Erie Canal [L]
- V is the velocity of water in the Erie Canal [L/T]

The following inputs were used.

W = 28.7 m (94 ft), width of the Erie Canal upstream of Lock 34/35, New York State Canal Corporation communication to USACE, dated April 6, 2012 (USACE, 2012a)

D = 3.7 m (12 ft), height of water in the Erie Canal upstream of Lock 34/35, New York State Canal Corporation communication to USACE dated April 6, 2012 (USACE, 2012a)

V = 0.6 m/sec (2 ft/sec) (USACE, 2010)

The Erie Canal flow, Q_{canal}, was calculated to be 65 cms (2,300 cfs).

3.3 Uranium Concentration Dilution Factor

During the navigation season, lasting between April 20 and November 20, groundwater containing uranium from the Guterl Site to the Erie Canal mixes with the flow in the Erie Canal

and is diluted. The dilution ratio is calculated as follows:

Dilution Factor = Q_{canal} / Q_{gw}
= 65 cms (2,300 cfs) / 5.4 x 10^{-2} cms (1.9 cfs)
= 1,200

During the non-navigation season (November 21 to April 19), there is no measurable flow in the canal in the vicinity of the emergency water intake, therefore, the Erie Canal does not function as a potential emergency water supply source during this time period. Any seep mixes with the approximately 0.6 m (2 ft) of standing water in the Erie Canal. Considering that the observed seep flow rates are low (approximately 6.3 x 10^{-5} cms [0.002 cfs]), the risk of incidental exposure from ingestion of uranium in the emergency drinking water supply is absent. In addition, during the non-navigable period, human access to the Erie Canal is constrained by its canyon-like configuration and limited entry points in Lockport approximately 1.6 kilometer (1 mile) to the east.

4.0 MAXIMUM URANIUM CONCENTRATION IN THE ERIE CANAL

The highest measured total uranium concentration at the Guterl Site is 292 µg/L, measured in May 2014 at monitoring well605D. If this concentration was directly transferred to the Erie Canal, thereby ignoring in-aquifer dispersion, the uranium would be diluted by a factor of 1,200. The resulting maximum possible transferred concentration in Erie Canal water would be 0.24 µg/L total uranium. When added to the background uranium concentration of 0.4 µg/L total uranium it would result in a surface water concentration of 0.64 µg/L total uranium in the Erie Canal. This estimated maximum concentration is well below the 30 µg/L MCL for drinking water and is non-distinguishable from the observed background concentration range in the Erie Canal (0.3 to 0.7 µg/L).

5.0 MAXIMUM TOLERABLE GUTERL SITE GROUNDWATER CONCENTRATION

To pose a risk to the emergency water intake in the Erie Canal, the groundwater concentration discharging from the site would have to overcome the dilution factor in the Erie Canal. The maximum uranium concentration in Guterl Site groundwater that would create an exceedance of the uranium MCL in the Erie Canal is calculated as follows:

Maximum Tolerable Groundwater Concentration = (MCL – background) x dilution factor
= (30 µg/L – 0.4 µg/L) x dilution factor
= 29.6 x 1,200
= 35,500 µg/L

Therefore, groundwater seeping from the Guterl Site must not exceed 35,500 µg/L to ensure protection of human health during an emergency water-intake operation.

An evaluation of the current and future possibility of exceeding the uranium MCL in the Erie Canal was performed based on measured groundwater concentrations and model-predicted

groundwater concentrations for various remedial alternatives. These alternatives include no soil removal action, soil removal to construction worker protection standards, and soil removal to groundwater protection standards. Results are provided in Table 1. The maximum predicted groundwater uranium concentration is 35,280 µg/L, occurring approximately 20 years in the future for the alternative where no soil removal action is undertaken. This concentration is less than the maximum tolerable groundwater concentration of 35,500 µg/L. A no soil removal action is not a viable remedial alternative for this site. Therefore, it is not likely that the uranium concentration in the Erie Canal will exceed the MCL in the next 1,000 years. The site-wide remedial action alternatives for the Guterl site include soil removal for the groundwater protection preliminary remediation goal.

6.0 CONCLUSIONS

In order to demonstrate that the risk of future exposure from the ingestion of uranium released from the Guterl Site groundwater to the Erie Canal waters is minimal, mass balance calculations were performed. Findings of the calculations are listed below:

- Groundwater flowing through the fracture system underlying the Guterl Site carries dissolved uranium to the Erie Canal, where the groundwater has been observed to seep through the Erie Canal wall.

- Although long-term data are not available, observations made since August 2011 indicate that the seeps are low flow volume approximately 6.3×10^{-5} cms [0.002 cfs]) and limited to approximately eight locations.

- During the navigation season (April 20 and November 20), the low volume seep discharge mixes with a larger volume of water in the Erie Canal causing significant dilution. A dilution factor of 1,200 was calculated.

- During the non-navigation season (November 21 to April 19), there is no measurable flow in the Canal in the vicinity of the emergency water intake, and therefore, the Erie Canal does not function as a potential emergency water supply source during this time period. In addition, during the non-navigable period, human access to the Erie Canal is constrained by its canyon-like configuration and limited entry points.

- The highest measured total uranium concentration at the Guterl Site is 292 µg/L. If this concentration was directly transferred to the Erie Canal, after dilution the resulting maximum possible concentration would be 0.24 µg/L, which, when added to the background uranium concentration of 0.4 µg/L, results in a maximum surface water concentration of 0.64 µg/L total uranium in the Erie Canal. The estimated maximum concentration is well below the MCL for drinking water and is non-distinguishable from the currently observed background concentration in the Erie Canal (0.3 to 0.7 µg/L).

- To pose a future risk to the emergency water intake in the Erie Canal, the groundwater concentration discharging from the site would have to overcome the

dilution in the Erie Canal. The maximum uranium concentration that would create an exceedance of the uranium MCL in the Erie Canal is calculated to be 35,500 µg/L.

- The maximum predicted groundwater uranium concentration is 35,280 µg/L, occurring 20 years in the future for the scenario where no soil removal action is undertaken. This concentration is less than the maximum tolerable groundwater concentration of 35,520 µg/L.

- It is not likely that the uranium concentration in the Erie Canal will exceed the MCL at any time between present and next 1,000 years.

7.0 REFERENCES

New York State Department of Environment Conservation. (NYSDEC), 1994. Engineering Investigations at Inactive Hazardous Waste Sites – Preliminary Site Assessment, Task 3 – Evaluation of Initial Data. Volumes I and II. Guterl Specialty Steel, City of Lockport, Niagara County. Prepared for NYSDEC by ABB Environmental Services, Portland, Maine. April

New York State Department of Health (NYSDOH), 2008. Electronic mail communication from Matthew Forcucci (NYSDOH) to James Kaczor (Earth Tech) relaying information from Niagara County Health Department (Paul Dicky). October 3.

United States Army Corps of Engineers (USACE), 2010. Remedial Investigation Report, Guterl Specialty Steel Site, Lockport, New York. Prepared by Earth Tech/AECOM Inc. for USACE Buffalo District. July.

USACE, 2012a. E-mail to Shaw Environmental & Infrastructure, Inc., documenting communication between The New York State Canal Corporation and USACE regarding the Erie Canal dimensions.

USACE, 2012b. Final Technical Memorandum. Data Gap Investigation to Support the Feasibility Study, Former Guterl Specialty Steel Corporation, Lockport, New York. Prepared by Shaw Environmental & Infrastructure, Inc. October.

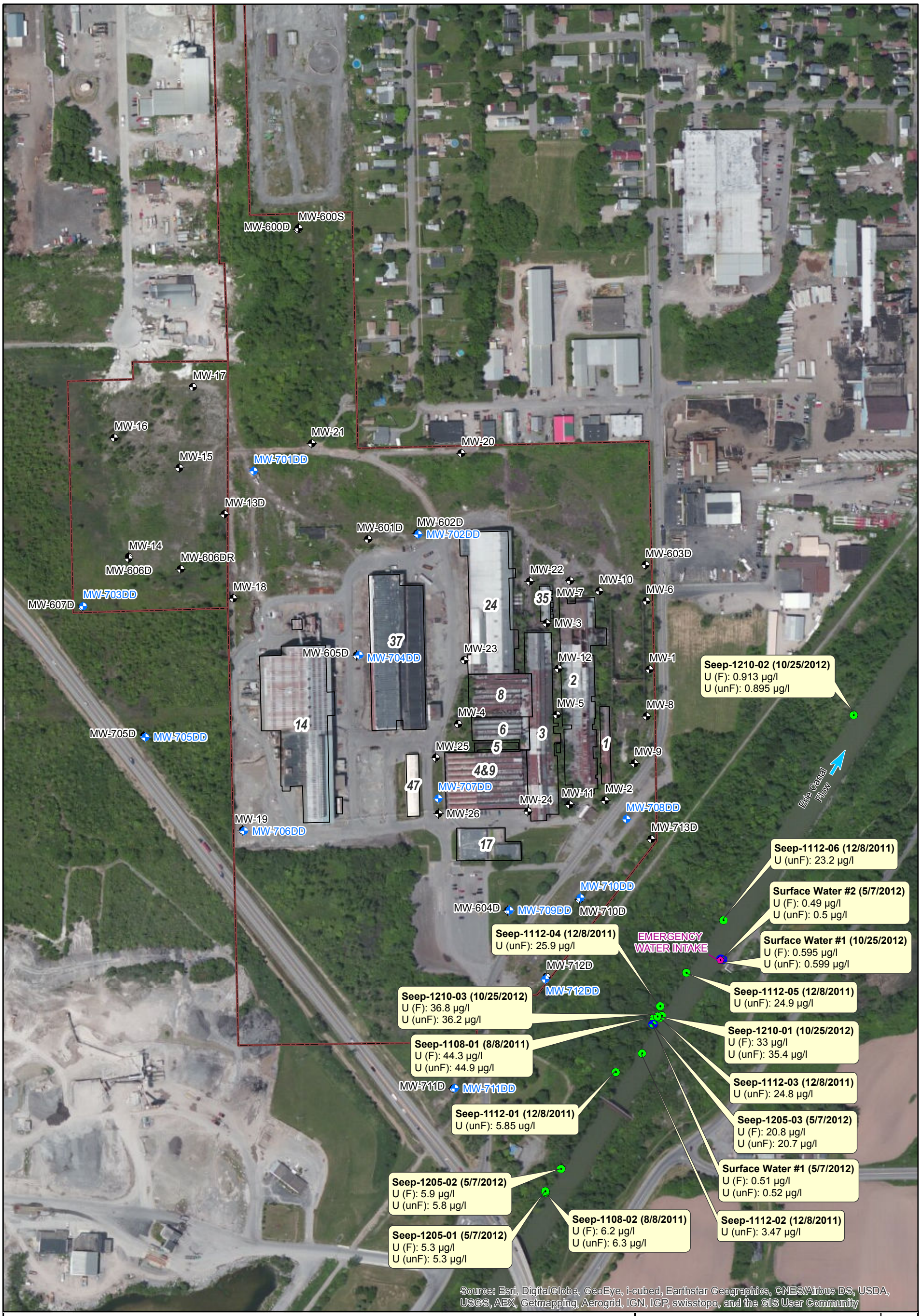
TABLES

Table 1

Evaluation of Potential for Exceeding Uranium MCL in Erie Canal
Former Guterl Steel Corporation FUSRAP Site
Lockport, New York

Scenario	Maximum Uranium Concentration in Groundwater [µg/L]	Time When Maximum Concentration is Predicted to Occur [years]	Maximum Tolerable Uranium Concentration in Groundwater [ug/L] (to prevent surface water MCL exccedance in Erie Canal)	Is There Potential for Current or Future Exccedance of Surface Water MCL in the Erie Canal?
Current Conditions	274	0	35,500	No
Future - No Action	35,280	20		No
Future - Soil Excavated to Construction Worker Preliminary Remediation Goal	607	90		No
Future - Soil Excavated to Groundwater Protection Preliminary Remediation Goal	95	20		No

FIGURES



Legend

- Emergency Water Intake
- Surface Water Sample Location
- Seep Sample Location
- Deep Well Location
- Shallow Well Location
- Guterl Buildings
- Guterl Site Boundary

0 75 150 300 Feet

Seep-Surface Water Station (Sample Date)
U (F): Dissolved Uranium Filtered Result (µg/l)
U (unF): Total Uranium Unfiltered Result (µg/l)

µg/l = micrograms per liter

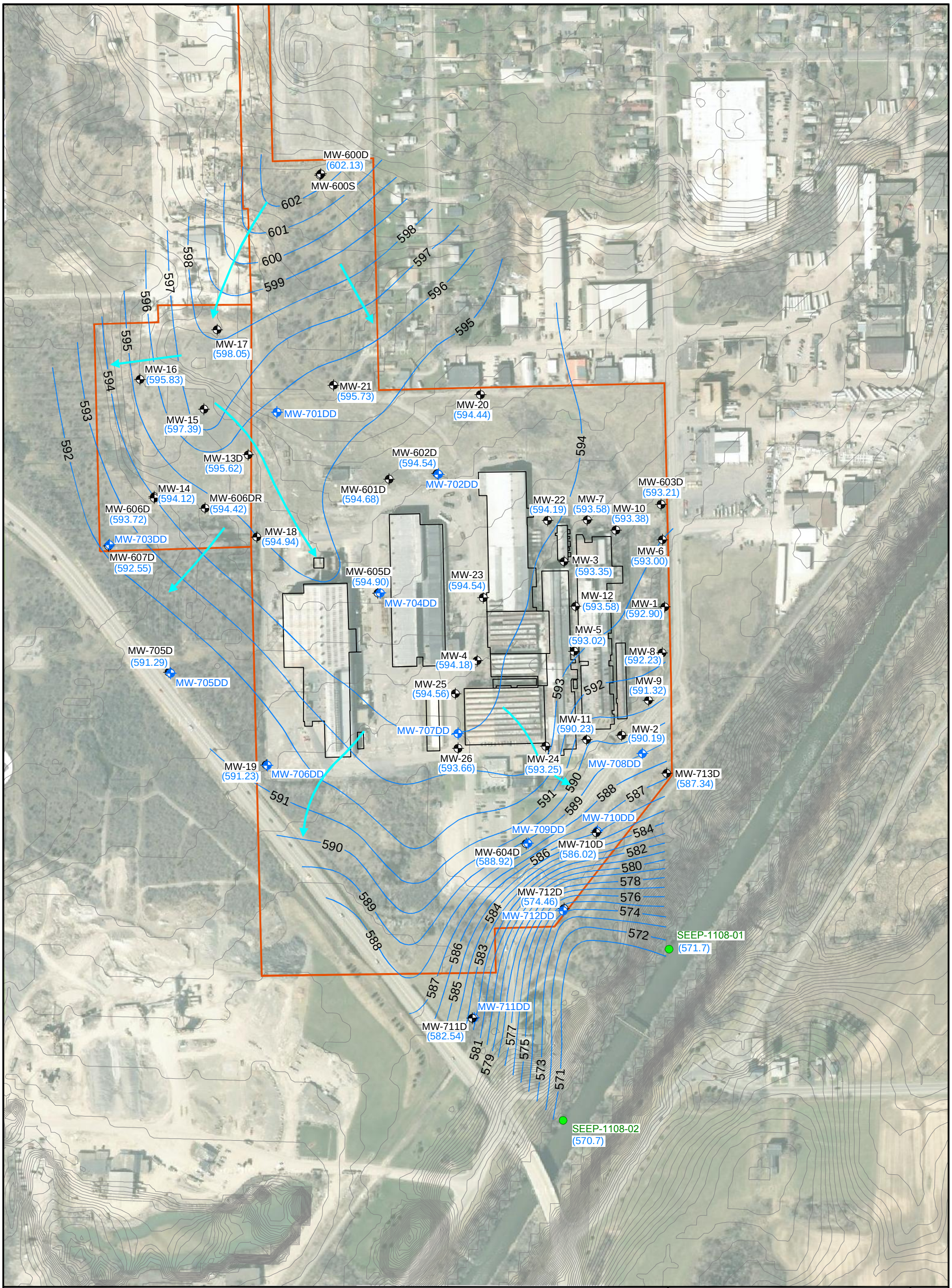
US Army Corps of Engineers ®
Buffalo District
BUILDING STRONG®

SEEPS AND SURFACE WATER SAMPLING RESULTS, 2011-2012

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/25/2014	1 inch = 300 feet	1

File Name: Guterl_175_Seep_Data_2012_rev1 Date: 7/15/2014 Time: 1:14:03 PM



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1FT CONTOUR)
- GUTERL SITE BOUNDARY
- (583.68) GROUNDWATER ELEVATION (FEET MSL)
- —586— GROUNDWATER CONTOUR
- GROUNDWATER FLOW PATH (INFERRED)

0 75 150 300 Feet

Note:

CANAL WATER LEVEL WAS 565.7 FEET AT 10:00 AM ON 8/8/2011. CANAL BOTTOM IS APPROXIMATELY 552.7 FEET. CANAL WATER ELEVATION WAS REFERENCED FROM GAUGE READING AT LOCK 35, APPROXIMATELY 1.75 MILES DOWNSTREAM.

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

POTENTIOMETRIC SURFACE MAP
SHALLOW WELLS
AUGUST 3, 2011

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/6/2012	1 inch = 300 feet	2

File: O:\Project\140416\140416-B8.dwg

Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1FT CONTOUR)
- GUTERL SITE BOUNDARY
- (583.68) GROUNDWATER ELEVATION (FEET MSL)
- —586— GROUNDWATER CONTOUR
- GROUNDWATER FLOW PATH (INFERRED)

0 75 150 300 Feet

Note:

WELL MW-707DD WAS NOT USED FOR CONTOURING BECAUSE IT DOES NOT INTERSECT WATER PRODUCING FRACTURES.

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

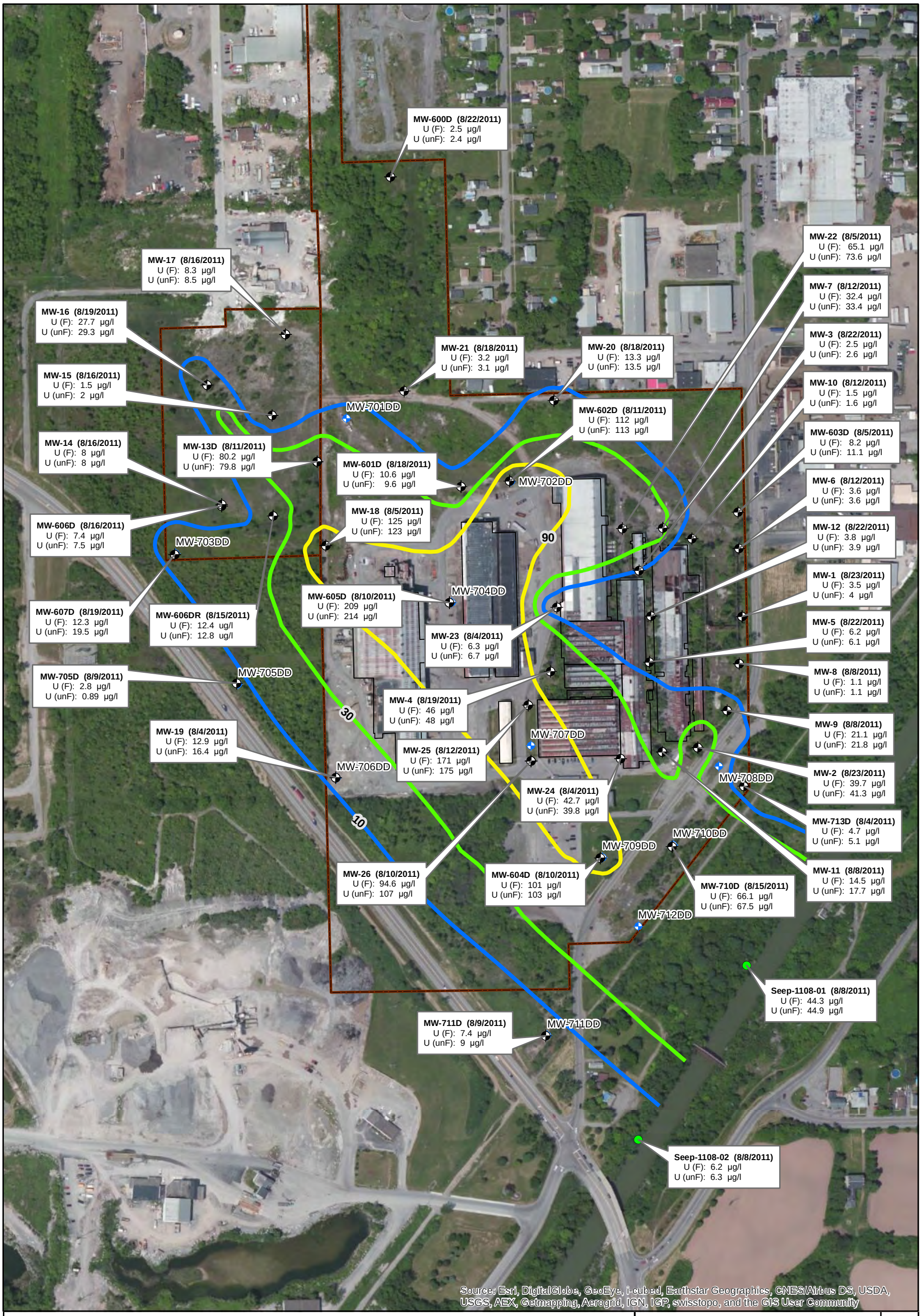
N W E S

POTENTIOMETRIC SURFACE MAP
DEEP WELLS
AUGUST 3, 2011

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/6/2012	1 inch = 300 feet	3

File: O:\Project\140416\140416-B7.dwg



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP SAMPLE
- EXTENT OF GROUNDWATER 10 µg/l
- EXTENT OF GROUNDWATER 30 µg/l
- EXTENT OF GROUNDWATER 90 µg/l
- GUTERL SITE BOUNDARY

0 75 150 300 Feet

U (F) = TOTAL URANIUM FILTERED
U (unF) = TOTAL URANIUM UNFILTERED
µg/l = MICROGRAMS PER LITER

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

N W E S

TOTAL URANIUM IN SHALLOW GROUNDWATER
(AUGUST 2011)

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
6/23/2014	1 inch = 300 feet	4

Date: 6/23/2014 Path: G:\Guterl\140416\GIS_Documents\Project_Maps\Fig 4_Guterl_174_GWUr_2011_Shallow_rev2.mxd

APPENDIX E

Remedial Investigation Figures and Tables Cited

Building Feature Survey
Remedial Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York
May, 2009

Building	Photo ID	Location within Building	Feature Number	Feature/Item	Material	Approximate Dimension or Volume	Notes
1	B1P1N	north room of Building 1, facing north	F1	misc. debris	wood & metal	10 CY wood 2 CY metal	
1	B1P2S	north room of Building 1, facing south	-----	misc. debris	wood & metal	-----	no new feature, different view of north room in building 1
1	B1P3S	center room of Building 1	F2	misc. equipment & debris (includes smelters & furnaces)	wood & metal	5 CY wood 10 CY metal	2 smelters and 3 furnaces in this room
1	B1P4NW	small elevated work room in southwest corner or Building 1	F3	asbestos materials & misc. debris	asbestos material, wood, metal	3 CY	
1	B1P5S	south room of Building 1	F4	misc. debris	wood & metal	5 CY	includes debris in small room at southern extent of building 1
2	B2P1S	Building 2 (north section), main room	F1	15-ton overhead crane	metal	-----	
2	B2P1S	Building 2 (north section), main room	F2	chemical vats & associated piping	metal	65' x 30' x 6'	not field measured, estimated from Orise drawings and field photo
2	B2P1S	Building 2 (north section), main room	F3	misc. debris	wood & metal	5 CY	
2	B2P1S	Building 2 (north section), main room	F4	misc. equipment & debris	wood & metal	1 yd wood 10 CY metal	no direct photo - debris from small room on west side of building 2 (north section)
2	B2P2SE	boiler room, Building 2 (north section)	F5	2 boilers	metal	2/3 x 56.5 x 53	photo is of 1 of the 2 boilers, dimensions estimated form URS drawing and field photo
2	B2P3SW	boiler room, Building 2 (north section)	F6	misc. debris	wood & metal	4 CY	debris on east side of boiler room
2	B2P4S	north part of Building 2 (center section)	F7	misc. debris (including pipe racks)	wood & metal	1 yd wood 20 CY metal	
2	B2P5S	middle part of Building 2 (center section)	F8	misc. debris	wood & metal	20 CY	
2	B2P6E	middle part of Building 2 (center section)	F9	fire bricks	bricks	12 CY	
2	B2P7S	southern part of Building 2 (center section)	F10	misc. debris	wood & metal	10 CY	
2	B2P8W	southern part of Building 2 (center section)	F11	ceramic material	ceramic	10 CY	
2		southern part of Building 2 (center section)	F12	15-ton overhead crane	metal	-----	no direct photo of this feature
2	B2P9S	room south of the locker room, Building 2 (center section)	F13	misc. debris	wood & metal	10 CY wood 5 CY metal	

Building Feature Survey
Remedial Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York
May, 2009

Building	Photo ID	Location within Building	Feature Number	Feature/Item	Material	Approximate Dimension or Volume	Notes
2		locker room, Building 2 (center section)	F14	lockers	metal	20 CY	no direct photo of this feature (inside locker room)
2		offices on east side of Building 2 (center section)	F15	misc. debris	wood & metal	10 CY	no direct photo of this feature (inside small offices along east side of building)
2		2 shop areas, SW corner, Building 2 (center section)	F16	misc. debris	wood & metal	10 CY wood 5 CY metal	no direct photo of this feature (inside shop areas) estimates include both shop rooms
2	B2P10N	Building 2 (south section)	F17	furnace	metal	8' x 6' x 40'	
2	B2P10N	Building 2 (south section)	F18	paperwork	paper	5 CY	
2	B2P10N	Building 2 (south section)	F19	misc. debris	wood & metal	5 CY	
2	B2P10N	Building 2 (south section)	F20	work benches	wood	5 CY	
2	B2P11W	Building 2 (south section)	F21	furnace	metal	20' x 20' x 10'	
2	B2P12SW	Building 2 (south section)	F22	fire bricks	brick	10 CY	
2	B2P13E	Building 2 (south section)	F23	misc. debris	wood & metal	5 CY	
2		east room in Building 2 (south section)	F24	misc. electrical material	electrical/metal	4 CY	no direct photo of this feature
2	B2P14SW	southwest corner of Building 2 (south section)	F25	3 silos	metal	1 @ 20' tall x 10' diameter 2 @ 18' tall x 8' diameter	
2	B2P14SW	southwest corner of Building 2 (south section)	F26	misc. equipment	metal	6' x 6' x 12'	
2	B2P15S	paper room in southeast section of Building 2	F27	paperwork	paper	10 CY	
3	B3P1S	west side of Building 3 (NW corner)	F1	steel cylinders	metal	(100 pieces) 2' long x 1-2' diameter x 1" thick	
3	B3P1S	north entrance to Building 3, overhead	F2	5-ton overhead crane	metal	-----	
3	B3P2S	east side of Building 3 (north section)	F3	misc. debris	wood & metal	2 CY	
3	B3P3NE	east side of Building 3 (north section)	F4	steel furnaces	metal	(2 units) each 8' x 20' x 15'	

Building Feature Survey
Remedial Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York
May, 2009

Building	Photo ID	Location within Building	Feature Number	Feature/Item	Material	Approximate Dimension or Volume	Notes
3	B3P4SW	east side of Building 3 (north section)	F5	metal machinery (hoods, grinders, misc.)	metal	5 CY	
3	B3P5S	north east corner of Building 3	F6	misc. equipment & debris	wood & metal	2CY	
3	B3P6SE	east side of Building 3 (north section), across from Building 8	F7	steel rolls	metal	55 @ 5' long x 1.5' diameter 37@ 4' long x 1.5' diameter 5 @ 8' long x 1.5' diameter	
3	B3P7SW	west side of Building 3 (north section), next to Building 6	F8	steel rolls	metal	73 @ 4-8' long x 1.5-2' diameter	
3	B3P8S	east side of Building 3 (North section), across from Feature 8 (F8)	F9	misc. equipment & debris	wood & metal	3 CY	
3	B3P9N	east side of Building 3 (north section), across from Building 6	F10	misc. equipment & debris	wood & metal	2 CY wood 6 CY metal	
3	B3P10S	south of Feature 10 (F10)	F11	misc. equipment & debris	metal	15 CY equipment 2 CY debris	
3	B3P11E	east side of Building 3, below hopper tracks	F12	cabinets & cafeteria heater	metal	3 CY	
3	B3P12S	Building 3 (E-W oriented trench)	F13	misc. debris	wood & metal	1 CY wood 1CY metal	
3	B3P13N	south section of cafeteria	F14	cafeteria kitchen	metal	5 CY	
3	B3P14S	N-S oriented trench (south section Building 3)	F15	trench rubble	wood & metal	2 CY wood 15 CY metal	
3	B3P15NE	east side of Building 3 (south section), next to N-S oriented trench	F16	3 furnaces	brick & metal	3 @ 12' x 8' x 30'	photo is only of the northern most furnace
3	B3P15NE	east side of Building 3 (south section), next to N-S oriented trench	F17	misc. debris	wood & metal	5 CY	no new photo for this feature - yardage is cumulative for debris located between the 3 furnaces in Feature 16 (F16)
3	B3P16SE	east side of Building 3 (south section), near southern extent of N-S oriented trench	F18	furnace	brick & metal	25' x 15' x 6'	northeast of press in Feature 19 (F19)
3	B3P16SE	east side of Building 3 (south section), near southern extent of N-S oriented trench	F19	press	metal with concrete base	20' x 15' x 4'	

Building Feature Survey
Remedial Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York
May, 2009

Building	Photo ID	Location within Building	Feature Number	Feature/Item	Material	Approximate Dimension or Volume	Notes
3	B3P17SE	south end of Building 3	F20	steel rolls	metal	85 @ 4' long x 1' diameter 10 @ 4' long x 1.5' diameter 9 @ 6' long x 2' diameter 8 @ 12' long x 2.5' diameter	
3	B3P18E	small room in south east corner of Building 3	F21	misc. debris	wood & metal	2 CY wood 2 CY metal	
3	B3P19W	small room at south end of Building 3	F22	equipment (steel rolls, lathes)	metal	50 @ 3-4' long x 1' diameter 3 lathes each 5' x 6' x 20 '	
3	B3P20NE	photo of a single lathe	F22	lathe	metal	-----	no new feature associated with this photo
5	B5P1E	inside Building 5	F1	electrical equipment	metal	2/3 of building (2/3 * 140' long x 30' wide)	
5	B5P2W	inside Building 5	F1	electrical equipment	metal	2/3 of building (2/3 * 140' long x 30' wide)	
6	B6P1NW	intersection area of Buildings 3, 6, & 8	F1	furnace	brick & metal	6' x 12' x 8'	not field measured, dimensions estimated from Oise drawings and photo.
6	B6P1NW	intersection area of Buildings 3, 6, & 8	F2	furnace	brick & metal	20' x 12' x 8'	not field measured, dimensions estimated from Orise drawings and photo.
6	B6P2W	view of Building 6 from outside exclusion zone in Building 3	F3	roll mill	metal	55' x 10' x 6'	not field measured, dimensions estimated from Orise drawings and photo.
6	B6P2W	view of Building 6 from outside exclusion zone in Building 3	F4	steel rolls	metal	20 racks of 10 rolls per rack each 4' long x 1' diameter	not field measured, dimensions estimated from building 6 entrance and photo.
6	B6P2W	view of Building 6 from outside exclusion zone in Building 3	F5	misc. debris	wood	5 CY	
8	B8P1W	at entrance of Building 8 looking to the west (southern most 1 of 3)	F1	furnace	brick & metal	20' x 12' x 8'	not field measured, dimensions estimated from drawings and photo.
8	B8P1W	view of Building 8 from outside exclusion zone in Building 3	F2	furnace	brick & metal	20' x 12' x 8'	not field measured, dimensions estimated from drawings and photo.
8	B8P2W	view of Building 8 from outside exclusion zone in Building 3	F3	steel rolls & misc. equipment	metal	10 rolls @ 6' long x 1.5' diameter + unknown amount misc. equipment & debris	not field measured
8	B8P3W	view of Building 8 from outside exclusion zone in Building 3	-----	misc. equipment & debris	metal equip. Wood & metal debris	-----	not field measured
35	B35P1S	west side of Building 35	F1	misc. wood shelves and benches	wood	2 CY	
35	B35P2NE	north east corner of Building 35	F2	misc. debris	wood & metal	5 CY	
35	B35P3N	center of Building 35, overhead	F3	5-ton overhead crane	metal	-----	
49	B49P1W	south east corner of Building 49	F1	furnace & fume hood	brick & metal	25' x 25' x 25	
49	B49P1W	south east corner of Building 49	F2	misc. debris	wood & metal	3 CY	
49	B49P2W	east side of Building 49	F3	furnace & fume hood	brick & metal	40' x 20' x 20'	

Building Feature Survey
Remedial Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York
May, 2009

Building	Photo ID	Location within Building	Feature Number	Feature/Item	Material	Approximate Dimension or Volume	Notes
49	B49P2W	east side of Building 49	F4	unknown steel equipment	metal	10' x 10' x 10'	
49	B49P3W	northeast corner of Building 49	F5	electrical transformer	metal	15' x 5' x 8'	
49	B49P3W	northeast corner of Building 49	F6a	misc. debris	wood & metal	2 CY	
49	B49P3W	northeast corner of Building 49	F6b	5-ton overhead crane	metal	-----	
49	B49P4N	north side of Building 49	F7	3 choppers (saws) & misc. debris	metal	3 choppers each 5' x 5' x 5' 1 yd wood and metal	
49	B49P5N	northwest corner of Building 49	F8	misc. equipment & debris	metal	5 CY	
49	B49P6S	loading dock in Building 49	F9	fire bricks & metal roll & misc. equipment & misc. debris	brick	fire brick @ 2 CY metal roll, 1 @ 6' long x 2' diameter debris @ 2 CY	
49	B49P7E	central area of Building 49	F10	5-ton overhead crane	metal	-----	
49	B49P7E	central area of Building 49	F11	furnace/heater blower	metal	6' x 4' x 8'	
49	B49P7E	central area of Building 49	F12	furnace	metal	12' x 12' x 6'	
49	B49P7E	central area of Building 49	F13	Press	metal	12' x 4' x 8'	
49	B49P7E	central area of Building 49	F14	metal cutter	metal	4' x 6' x 8'	
49	B49P7E	southern portion of Building 49	F15	misc. metal debris	metal	7 CY	green ferns growing in same general area where debris located
49	B49P8E	southern portion of Building 49	F16	2 furnaces	metal	7' x 40' x 10	
49	B49P8E	southern portion of Building 49	F17	press	metal	30' x 4' x 5'	
49	B49P8E	southern portion of Building 49	F18	misc. metal & debris	metal	5 CY	
49	B49P8E	southern portion of Building 49	F19	5-ton crane	metal	-----	
49	B49P9NW	close up photo of one of the furnaces in feature 16 (F16)	-----	furnace	metal	-----	feature in this photo already estimated from photo B49P8E.
49	B49P10NE	southeast corner of Building 49	F20	metal gear assembly	metal	6' x 8' x 8'	bottom of feature goes down into trench
49	B49P10NE	southeast corner of Building 49	F21	misc. debris (including 4 rolls, lockers, & refrigerator)	metal	4 rolls @ 5' long x 1.5' diameter	in this photo Feature 1 (F1) is in the background
49	B49P11SE	trench in the central-east side of Building 49	F22	misc. debris	wood & metal	2 CY wood 3 CY metal	debris in and around trench
49	B49P11SE	north and south sides of trench in central-east sides of Building 49	F23	metal heaters and associated duct work on N & S sides of trench	metal	7CY	
Outside	OutP1E	outside Building 2, east of the boiler room, next to the railroad tracks	F1	grinding stones	grinding stones	10 CY	

Building Feature Survey
Remedial Investigation
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York
May, 2009

Building	Photo ID	Location within Building	Feature Number	Feature/Item	Material	Approximate Dimension or Volume	Notes
Outside	OutP2W	outside Building 2, east of the boiler room, next to the railroad tracks	F2	100 misc. steel rolls & gears	metal	----	
Outside	OutP3S	north side of Building 2	F3	crushed fiberglass tank	fiberglass	5 CY	
Outside	OutP4S	north side of Building 2	F4	metal tanks	metal	1 @ ~12' long x ~10' diameter 1 @ ~15' long x ~10' diameter	

Remedial Investigation Photographs
Building Feature Survey

Former Guterl Specialty Steel FUSRAP Site
Lockport, NY

B35P1S

B35P2NE

B35P3N

B3P1S

B3P2S

B3P3NE

B3P4SW

B3P5S

B3P6SE

B3P7SW

B3P8S

B3P9N

B3P10S

B3P11E

B3P12S

B3P13N

B3P14S

B3P15NE

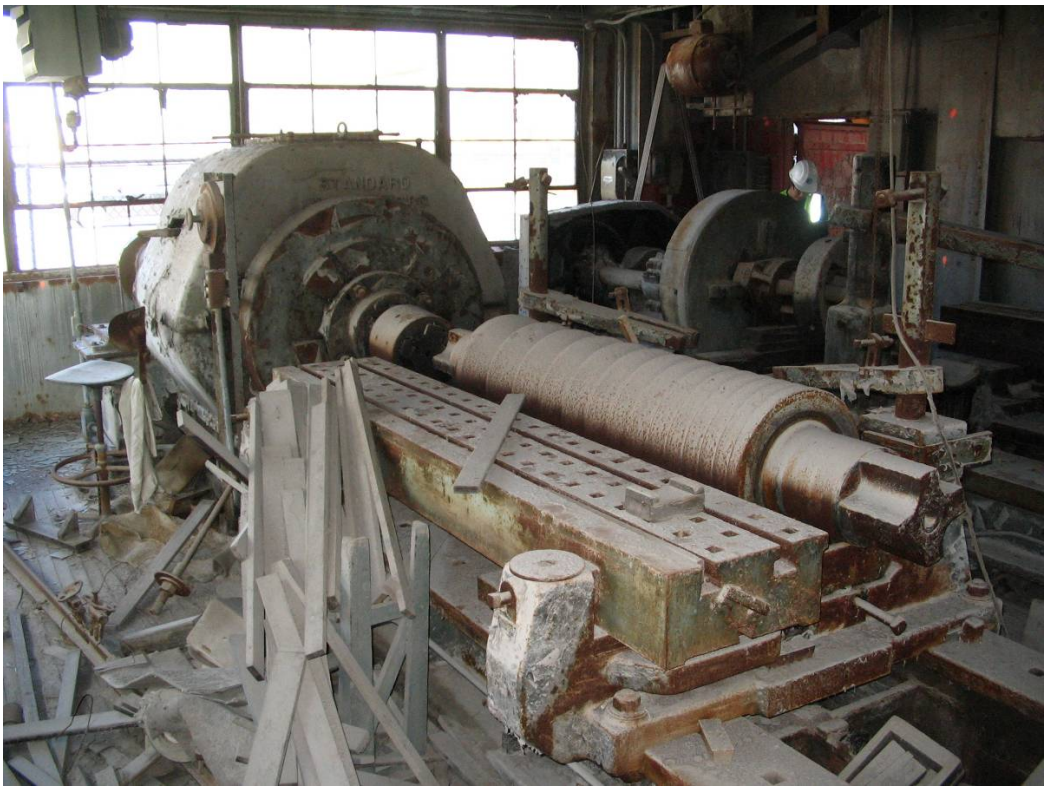
B3P16SE

B3P17SE

B3P18E

B3P19W

B3P20NE



B49P1W

B49P2W

B49P3W

B49P4N

B49P5N

B49P6S

B49P7E

B49P8E

B49P9NW

B49P10NE

B49P11SE

B5P1E

B5P2W

B6P1NW

B6P2W

B8P1W

B8P2W

B8P3W

B2P1S

B2P2SW

B2P3SE

B2P4S

B2P5S

B2P6E

B2P7S

B2P8W

B2B9SB

B2P10N

B2P11W

B2P12SW

B2P13E

B2P14SW

B2P15S

B1P1N

B1P2S

B1P3S

B1P4NW

B1P5S

OUTP1E

OUTP2W

OUTP3S

OUTP4S

FIGURES

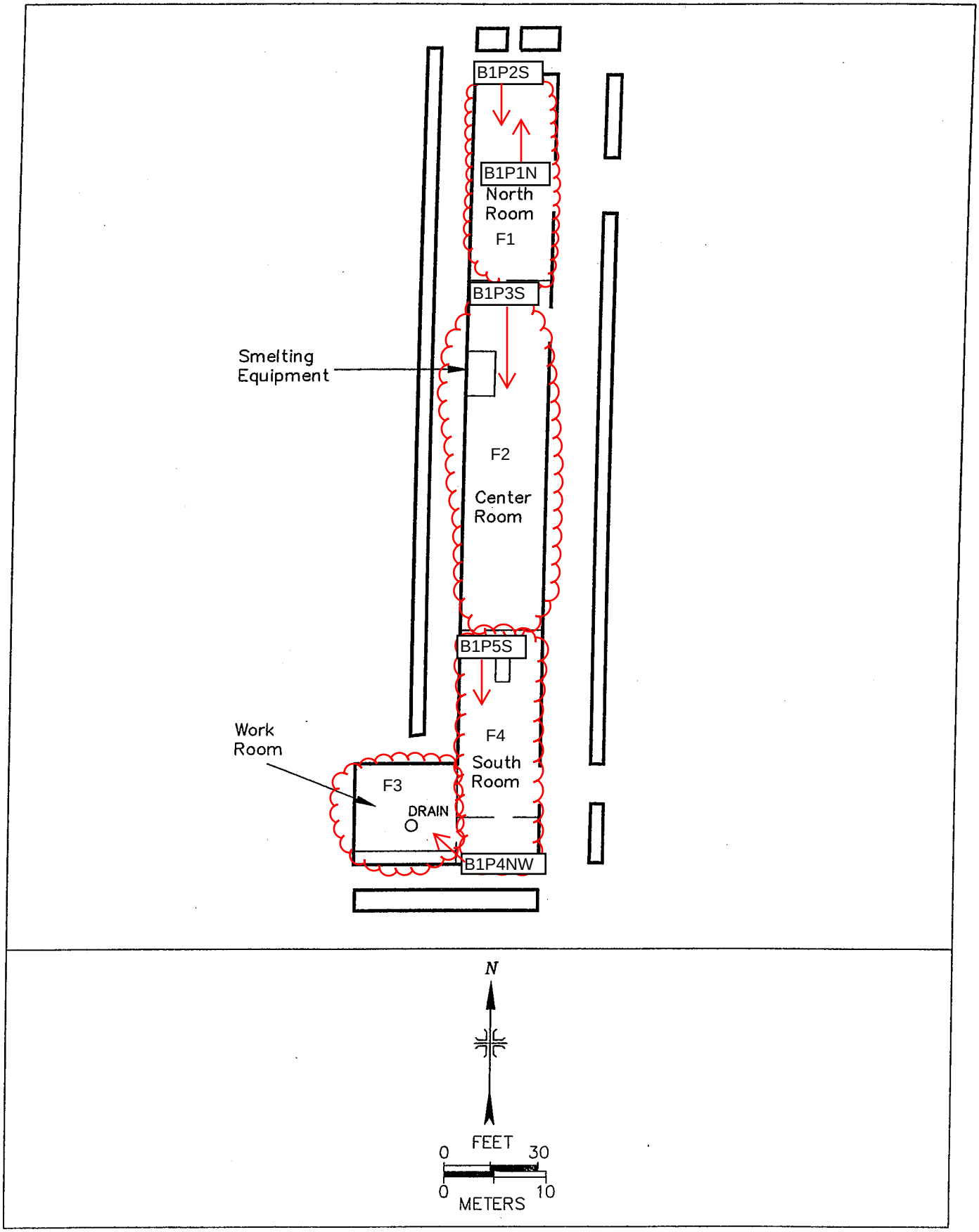


FIGURE 4: Building 1 – Floor Plan

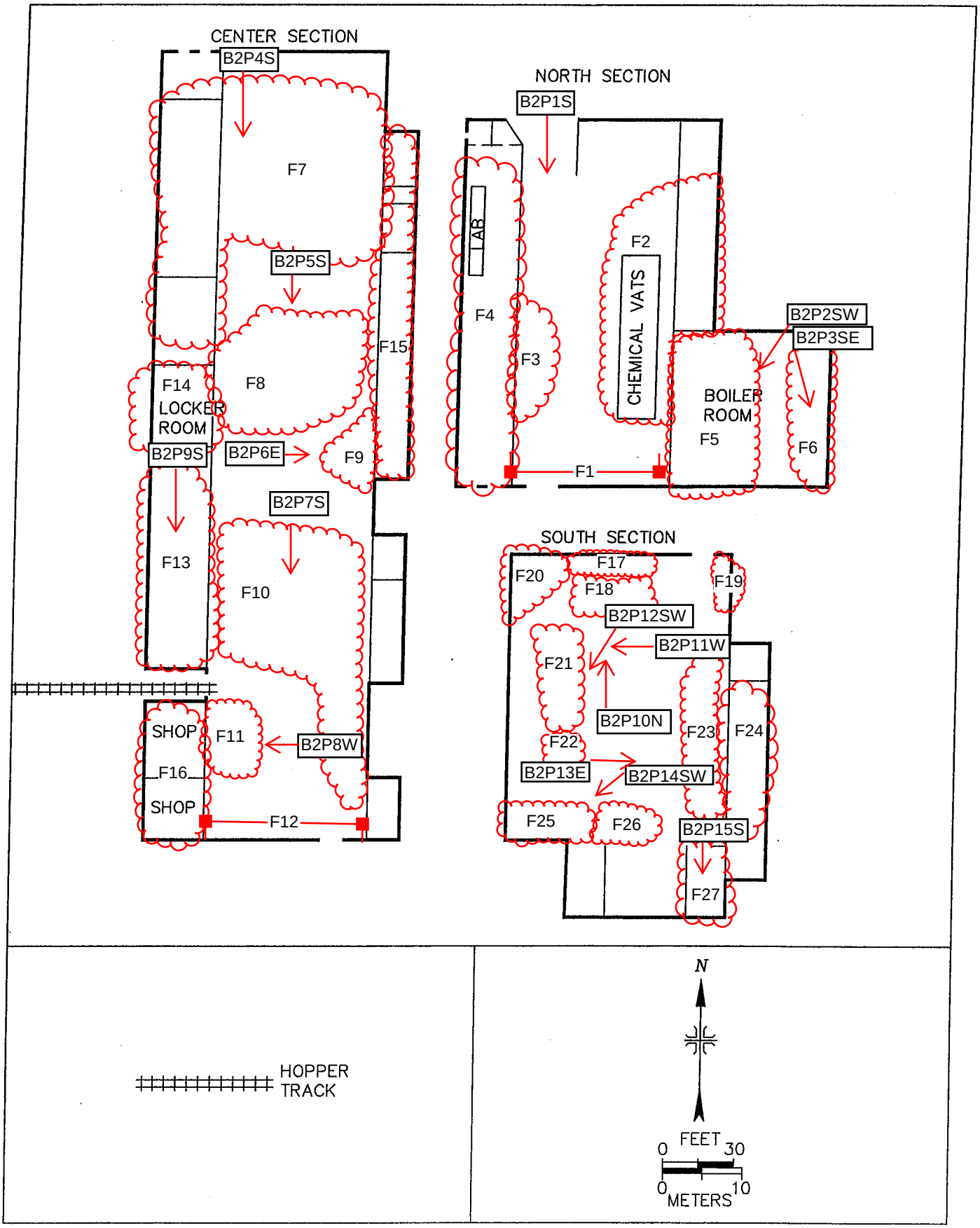


FIGURE 5: Building 2 – Floor Plan

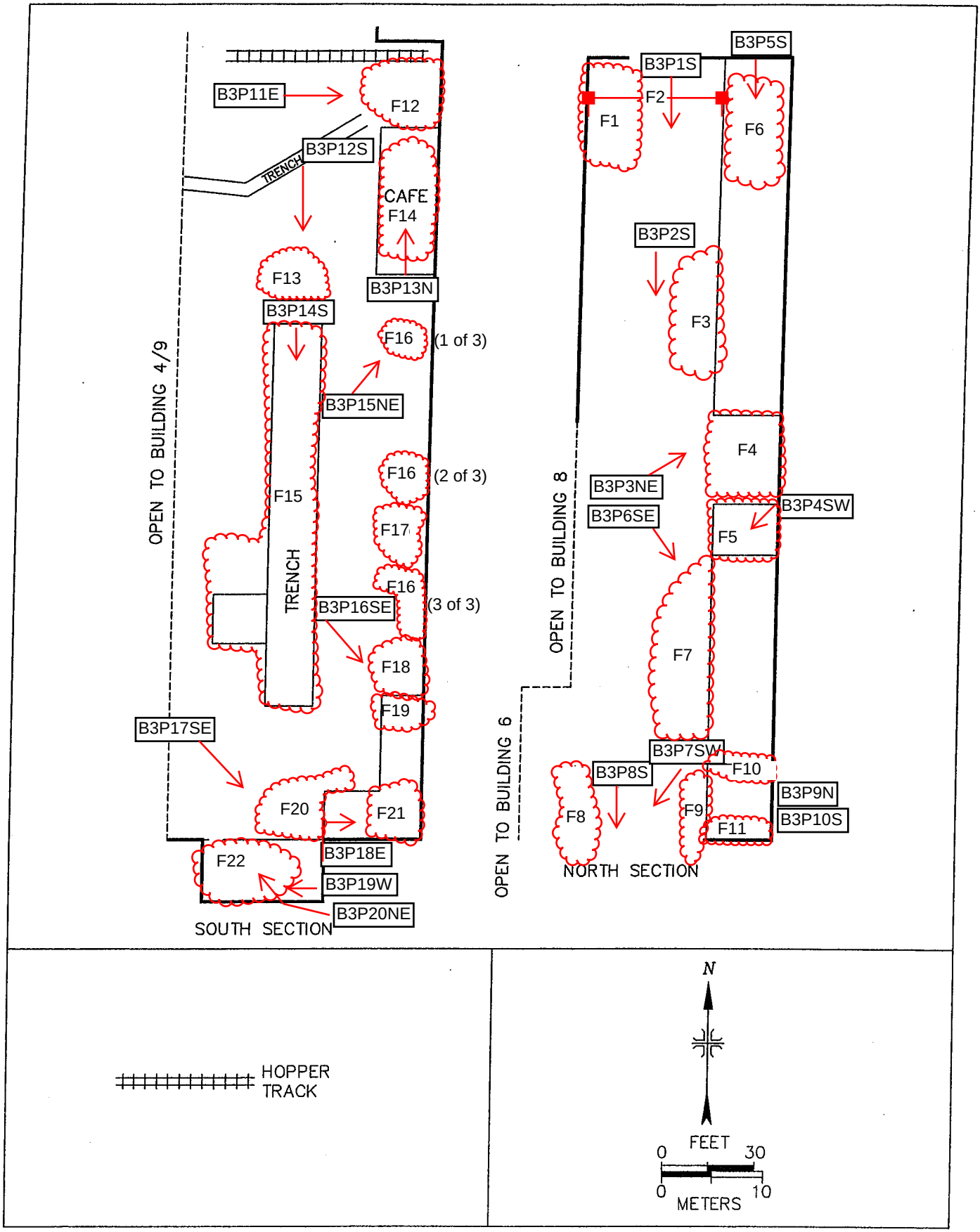


FIGURE 6: Building 3 – Floor Plan

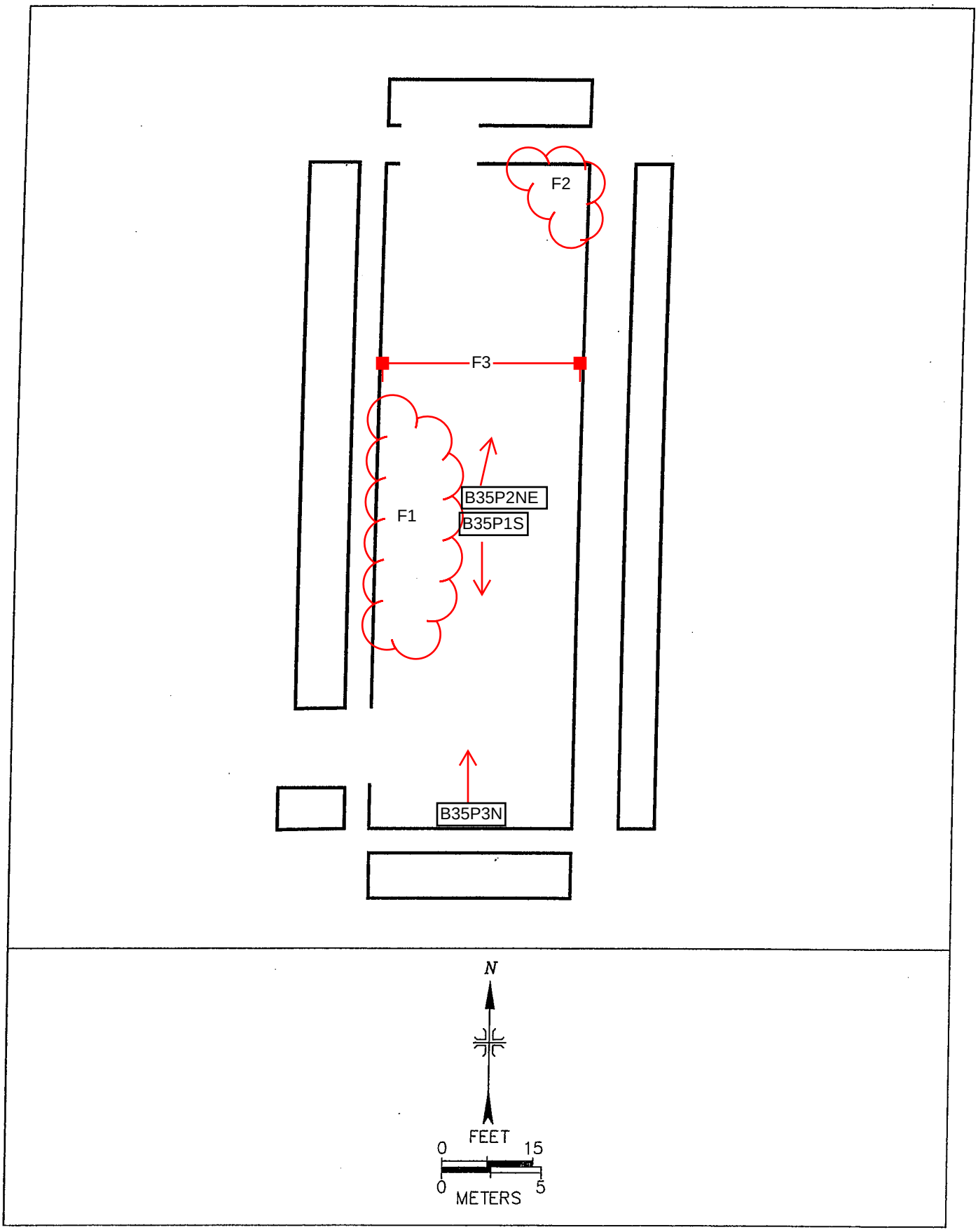


FIGURE 7: Building 35 – Floor Plan

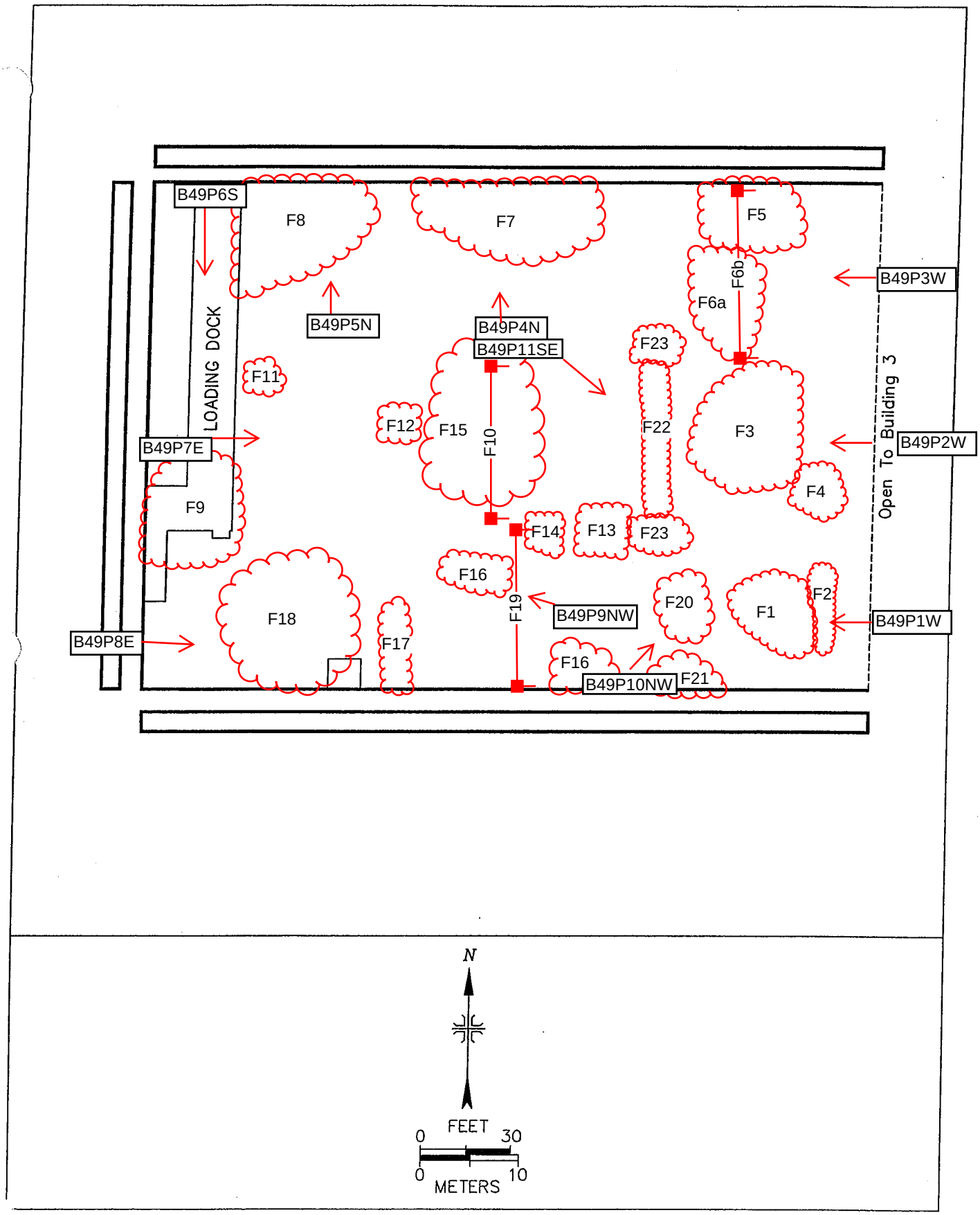


FIGURE 8: Building 4 and 9 – Floor Plan

401–045 (x)

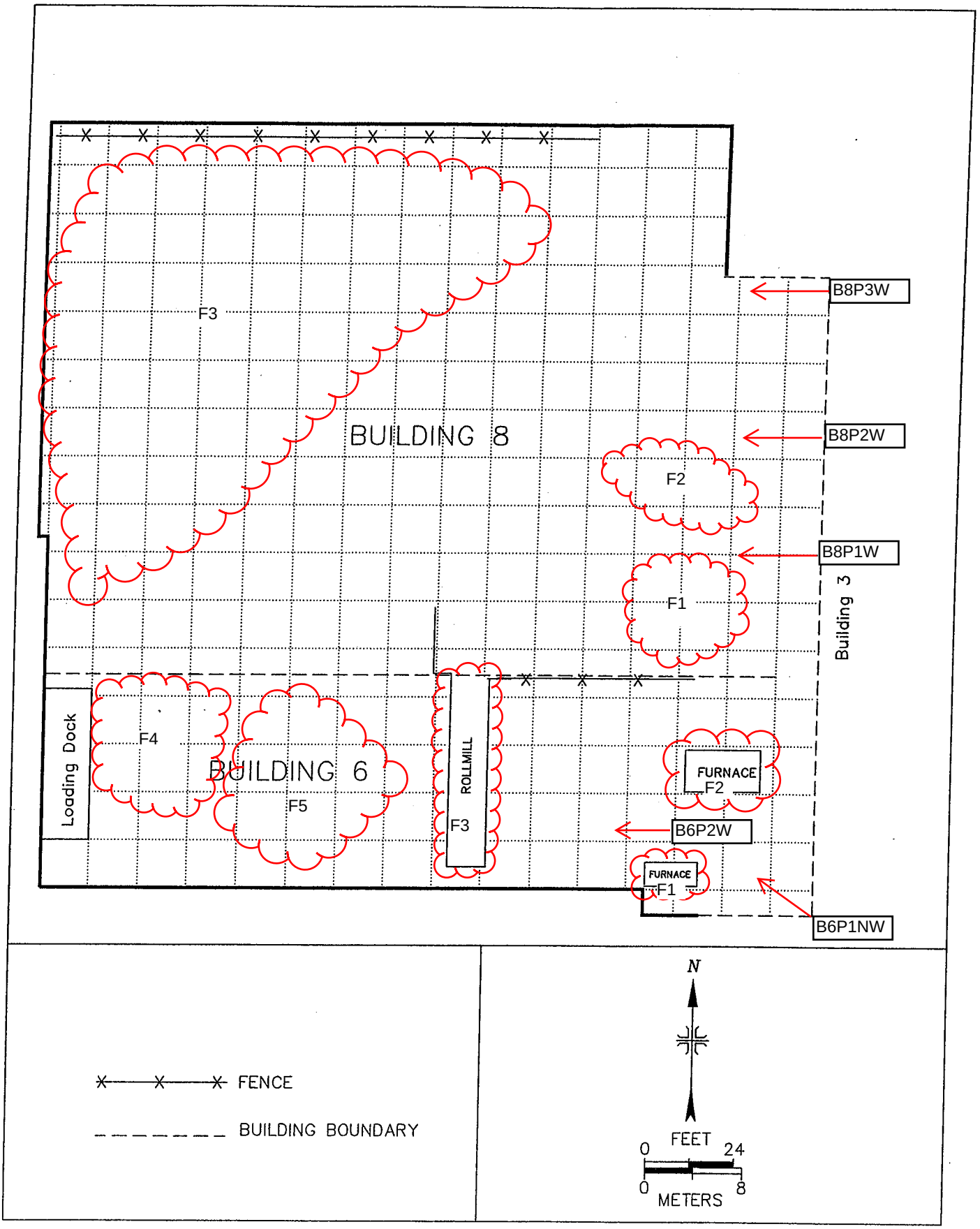
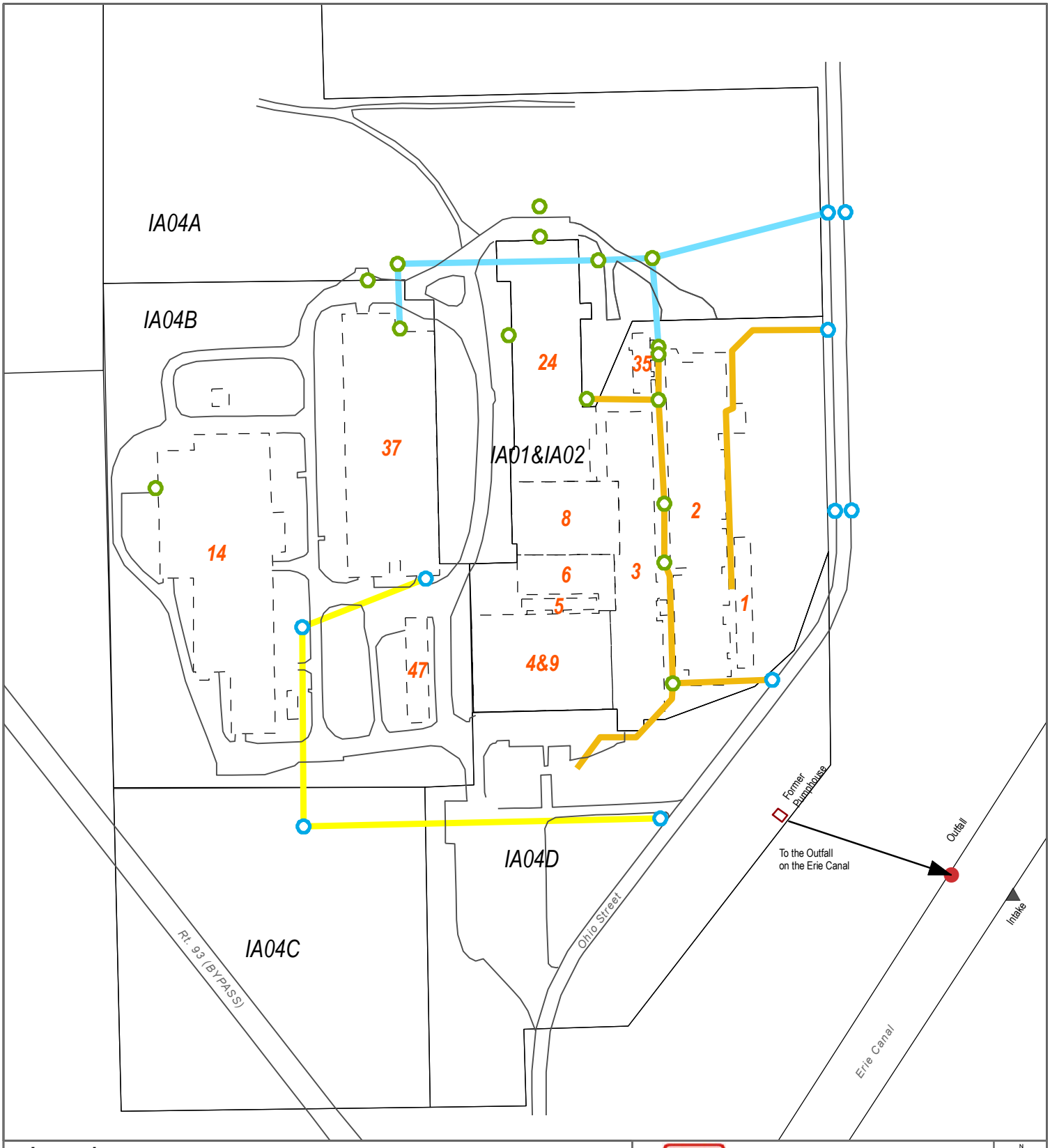


FIGURE 9: Building 6 and 8 – Floor Plan



Legend

- Catch Basin
- Manhole
- Pumphouse
- Paved Areas
- Combined Storm Sanitary Sewer
- Sanitary Sewer
- Storm Sewer
- 5 Guterl Buildings
- IAs
- Summit Street - City of Lockport Emergency Water Intake
- Former Guterl Steel Industrial Water Pump House Intake and Oil/Water Separator Outfall

United States Army Corps of Engineers
Buffalo District

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

SEWER LINES

Date:	Scale:	Figure No. :
11/10/09	1 inch = 200 feet	2-12

A08-A01-SW-007	
U-234	33
U-235	1.6
U-238	33
Th-228	0.12
Th-230	0.19
Th-232	-0.01
Ra-226	0.3
Ra-228	-0.4

A08-A01-007

A08-A01-SW-006	
U-234	2.7
U-235	0.15
U-238	2.5
Th-228	0.13
Th-230	0.05
Th-232	0.01
Ra-226	0.14
Ra-228	0.4

A08-A01-006

24

35

A

14

47

4&9

A08-B4-001

A08-B4-003

A08-B3-008

A08-B3-009

3

2

A08-A01-SW-012	
U-234	0.6
U-235	0.05
U-238	0.5
Th-228	0.18
Th-230	0.16
Th-232	0.03
Ra-226	0.1
Ra-228	0.4

A08-A01-012 (M)

A08-A01-SW-004	
U-234	0.5
U-235	0.05
U-238	0.3
Th-228	0.15
Th-230	0.12
Th-232	0.06
Ra-226	0.1
Ra-228	0.4

A08-A01-004

A08-A01-001

A08-A01-SW-001	
U-234	0.2
U-235	0.05
U-238	0.09
Th-228	0.2
Th-230	0.03
Th-232	-0.01
Ra-226	0.01
Ra-228	0.5

Ohio Street

Rt. 93

Erie Canal

1 inch = 165 feet

A08-B2-SW-003	
U-234	105
U-235	4.5
U-238	105
Th-228	1.2
Th-230	0.7
Th-232	0.6
Ra-226	0.4
Ra-228	0.5

A08-B2-003 (M)

A08-A01-SW-005	
U-234	0.03
U-235	0.02
U-238	0.04
Th-228	0.12
Th-230	0.12
Th-232	0.03
Ra-226	0.06
Ra-228	0.3

A08-A01-005

8

6

5

4&9

2

1

A08-B8-SW-002	
U-234	11
U-235	0.6
U-238	11
Th-228	0.1
Th-230	0
Th-232	-0.01
Ra-226	0.1
Ra-228	0.3

A08-B8-002 ?

A08-B8-SW-001	
U-234	13
U-235	0.5
U-238	13
Th-228	0.1
Th-230	0.2
Th-232	-0.01
Ra-226	0.1
Ra-228	0.7

A08-B8-001 ?

A08-B3-SW-003	
U-234	7
U-235	0.3
U-238	8
Th-228	0.03
Th-230	0.2
Th-232	0.02
Ra-226	0
Ra-228	0.2

A08-B3-001

A08-B3-SW-004	
U-234	6.1
U-235	0.3
U-238	6
Th-228	0.1
Th-230	0.1
Th-232	-0.02
Ra-226	0.2
Ra-228	0

A08-B3-004

A08-B3-SW-003	
U-234	7
U-235	0.3
U-238	8
Th-228	0.03
Th-230	0.2
Th-232	0.02
Ra-226	0
Ra-228	0.2

A08-B3-003

A08-A01-SW-011	
U-234	16
U-235	0.9
U-238	19
Th-228	0.05
Th-230	0.09
Th-232	-0.01
Ra-226	0.1
Ra-228	0.5

A08-A01-011

A08-B3-SW-015	
U-234	30
U-235	1.8
U-238	33
Th-228	0.1
Th-230	0.3
Th-232	0.1
Ra-226	0.2
Ra-228	0.5

A08-B3-015

A08-B3-SW-005	
U-234	14
U-235	0.5
U-238	13
Th-228	0
Th-230	0.1
Th-232	0.1
Ra-226	0
Ra-228	0.3

A08-B3-005

A08-B3-SW-014	
U-234	21
U-235	1
U-238	25
Th-228	0.1
Th-230	0.1
Th-232	0.03
Ra-226	0.1
Ra-228	0.4

A08-B3-014

A08-B3-SW-006	
U-234	19
U-235	0.9
U-238	20
Th-228	0.01
Th-230	0.4
Th-232	0.01
Ra-226	0.2
Ra-228	0.6

A08-B3-006

A08-B3-SW-013	
U-234	24
U-235	1.3
U-238	26
Th-228	0.2
Th-230	0.2
Th-232	0.05
Ra-226	0.3
Ra-228	0.8

A08-B3-013

A08-B04&B09-SW-002	
U-234	2.5
U-235	0.1
U-238	2.7
Th-228	0.1
Th-230	0.09
Th-232	0.05
Ra-226	0.1
Ra-228	0.6

A08-B4-002

A08-B04&B09-SW-003	
U-234	4.8
U-235	0.2
U-238	9
Th-228	0.07
Th-230	0.3
Th-232	-0.02
Ra-226	0.1
Ra-228	0.2

A08-B4-003

A08-B04&B09-SW-004	
U-234	0.4
U-235	0.02
U-238	0.6
Th-228	0.11
Th-230	0.05
Th-232	-0.01
Ra-226	0
Ra-228	-0.3

A08-B4-004

A08-B04&B09-SW-005	
U-234	1.7
U-235	0.1
U-238	1.4
Th-228	0.09
Th-230	0.07
Th-232	-0.02
Ra-226	-0.04
Ra-228	0.6

A08-B4-005

A08-B3-SW-012	
U-234	3.1
U-235	0.07
U-238	2.8
Th-228	0.1
Th-230	0.1
Th-232	-0.01
Ra-226	0.1
Ra-228	-0.9

A08-B3-012

A08-B3-SW-007	
U-234	0.7
U-235	0.1
U-238	0.6
Th-228	0
Th-230	0.3
Th-232	0.1
Ra-226	0
Ra-228	0

A08-B3-007

A08-B3-SW-008	
U-234	1.9
U-235	0.05
U-238	2
Th-228	0
Th-230	0.06
Th-232	-0.01
Ra-226	0.1
Ra-228	0.4

A08-B3-008

A08-B3-SW-009	
U-234	2.8
U-235	0.1
U-238	3.2
Th-228	0
Th-230	0
Th-232	0.1
Ra-226	0.07
Ra-228	0.1

A08-B3-009

A08-B3-SW-011	
U-234	2.2
U-235	0.2
U-238	2.9
Th-228	0.1
Th-230	0.3
Th-232	-0.03
Ra-226	0.1
Ra-228	0.2

A08-B3-011

A08-B04&B09-SW-001	
U-234	0.6
U-235	0.1
U-238	0.4
Th-228	0.04
Th-230	0.06
Th-232	0.02
Ra-226	0.2
Ra-228	0.3

A08-B4-001

A08-B1-SW-003	
U-234	16
U-235	0.8
U-238	18
Th-228	0.1
Th-230	0.1
Th-232	0.02
Ra-226	0.1
Ra-228	0.6

A08-B1-003

A08-B1-SW-006	
U-234	28
U-235	1
U-238	31
Th-228	0.1
Th-230	0.7
Th-232	0.06
Ra-226	0
Ra-228	0.3

A08-B1-006

A08-B1-SW-004	
U-234	13
U-235	0.6
U-238	13
Th-228	0.4
Th-230	0.2
Th-232	0.03
Ra-226	0.08
Ra-228	0

A08-B1-004

A08-B1-SW-002	
U-234	12
U-235	0.8
U-238	13
Th-228	0.2
Th-230	0.2
Th-232	0.02
Ra-226	0.1
Ra-228	0.3

A08-B1-002

A08-B2-SW-001	
U-234	4.2
U-235	0.2
U-238	4.7
Th-228	0.13
Th-230	0.26
Th-232	—
Ra-226	0.01
Ra-228	0.4

A08-B2-001

A08-B1-SW-001	
U-234	12
U-235	0.3
U-238	12
Th-228	0.4
Th-230	0.4
Th-232	-0.01
Ra-226	0.1
Ra-228	0

A08-B1-001

A08-B1-SW-005	
U-234	27
U-235	1.4
U-238	28
Th-228	0
Th-230	0.2
Th-232	0.02
Ra-226	0.07
Ra-228	0.3

A08-B1-005

To Inset A

Surface Water Sample Locations

Feature Descriptions

- Basement
- Basin
- Catch Basin
- Vault
- Drain Pipe
- Floor Trench
- Furnace pit
- ? Inaccessible
- Oil/Water Separator
- Outfall
- Pumphouse Reservoir
- Sewer Manhole
- Manhole
- Buildings

Notes:
pCi/L - picocuries per liter
All radiological results are presented in pCi/L.
U-235 concentration includes U-236, if present.
Uranium and thorium isotopes determined by alpha spectroscopy, radium isotopes determined by gas flow proportional counting.

United States Army Corps of Engineers
Buffalo District

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

NON-NATIVE SURFACE WATER
SAMPLE RESULTS - IA08

Date:	Scale:	Figure No. :
11/10/09	1 inch = 32 feet	4-29

A08-A01-SD-007	
U-234	18
U-235	0.8
U-238	18
Th-228	0.3
Th-230	0.4
Th-232	0.18
Ra-226	0.14
Ra-228	0.14

A08-A01-007

A08-A01-SD-008	
U-234	20
U-235	1
U-238	19
Th-228	0.4
Th-230	0.6
Th-232	0.5
Ra-226	0.8
Ra-228	0.5

A08-A01-008

A08-A01-SD-006	
U-234	1.9
U-235	0.06
U-238	2
Th-228	0.6
Th-230	0.7
Th-232	0.4
Ra-226	0.1
Ra-228	0.3

A08-A01-006

24

A08-B24-SD-004	
U-234	3.1
U-235	0.17
U-238	3.2
Th-228	0.4
Th-230	0.5
Th-232	0.4
Ra-226	0.3
Ra-228	0.1

A08-B24-004

A08-B24-SD-003	
U-234	17
U-235	0.8
U-238	17
Th-228	0.5
Th-230	0.6
Th-232	0.6
Ra-226	0.2
Ra-228	0.4

A08-B24-003

A08-B24-SD-005	
U-234	1.6
U-235	0.02
U-238	1.8
Th-228	0.09
Th-230	0.4
Th-232	0.03
Ra-226	0.12
Ra-228	0.04

A08-B24-005

A08-B24-SD-002	
U-234	20
U-235	0.8
U-238	20
Th-228	0.31
Th-230	0.4
Th-232	0.28
Ra-226	0.3
Ra-228	0.4

A08-B24-002

A08-B24-SD-006	
U-234	2.1
U-235	0.06
U-238	2.8
Th-228	2.1
Th-230	1.3
Th-232	2.1
Ra-226	1.9
Ra-228	1.8

A08-B24-006

A08-B24-SD-001	
U-234	21
U-235	1.2
U-238	22
Th-228	0.5
Th-230	0.4
Th-232	0.4
Ra-226	0.19
Ra-228	0.25

A08-B24-001

A08-B24-SD-007	
U-234	30
U-235	1.4
U-238	31
Th-228	0.8
Th-230	0.6
Th-232	0.8
Ra-226	0.4
Ra-228	0.5

A08-B24-007

8

A08-B8-SD-001	
U-234	92
U-235	4
U-238	92
Th-228	1.8
Th-230	0.6
Th-232	1.7
Ra-226	0.1
Ra-228	1.4

A08-B8-001 ?

A08-B8-SD-002	
U-234	199
U-235	11
U-238	224
Th-228	2.6
Th-230	1.1
Th-232	2.6
Ra-226	0.1
Ra-228	1.5

A08-B8-002 ?

A08-B6-SD-002	
U-234	42
U-235	2
U-238	42
Th-228	1.1
Th-230	0.7
Th-232	0.9
Ra-226	0.21
Ra-228	0.3

A08-B6-002 ?

6

A08-B6-SD-001	
U-234	49
U-235	2.6
U-238	51
Th-228	2.1
Th-230	0.7
Th-232	2
Ra-226	0.4
Ra-228	1.7

A08-B6-001 ?

A08-B3-SD-002	
U-234	1.9
U-235	0.14
U-238	1.9
Th-228	0.3
Th-230	0.3
Th-232	0.2
Ra-226	0.04
Ra-228	0.2

A08-B3-002

A08-B3-SD-003	
U-234	20
U-235	1.1
U-238	24
Th-228	0.7
Th-230	0.6
Th-232	0.5
Ra-226	0.36
Ra-228	0.3

3

A08-B3-003

A08-B3-004

A08-B3-SD-004	
U-234	30
U-235	1.3
U-238	33
Th-228	0.9
Th-230	0.5
Th-232	0.8
Ra-226	0.08
Ra-228	0.5

5

A08-B3-SD-005	
U-234	19
U-235	1.2
U-238	20
Th-228	0.3
Th-230	0.5
Th-232	0.2
Ra-226	0.06
Ra-228	0.1

A08-B3-005

A08-B3-SD-015	
U-234	9
U-235	0.5
U-238	9
Th-228	1.8
Th-230	1.8
Th-232	2
Ra-226	2
Ra-228	3

A08-B3-015

A08-A01-SD-011	
U-234	36
U-235	2.2
U-238	41
Th-228	0.5
Th-230	0.4
Th-232	0.4
Ra-226	0.2
Ra-228	0.3

A08-A01-011

A08-B3-SD-014	
U-234	5.6
U-235	0.3
U-238	6.1
Th-228	2.2
Th-230	2.1
Th-232	2.2
Ra-226	2.3
Ra-228	1.5

A08-B3-014

A08-B3-SD-006	
U-234	18
U-235	1
U-238	19
Th-228	0.3
Th-230	0.3
Th-232	0.17
Ra-226	0.15
Ra-228	0.2

A08-B3-006

A08-B3-SD-012	
U-234	8.1
U-235	0.4
U-238	7.9
Th-228	0.17
Th-230	0.15
Th-232	0.1
Ra-226	0.09
Ra-228	0.1

A08-B3-012

A08-B3-SD-013	
U-234	3.6
U-235	0.17
U-238	4
Th-228	1.8
Th-230	1.1
Th-232	1.7
Ra-226	1.6
Ra-228	2.6

A08-B3-013

A08-B3-SD-011	
U-234	3.5
U-235	0.12
U-238	3.5
Th-228	0.4
Th-230	0.2
Th-232	0.3
Ra-226	0.31
Ra-228	0.4

A08-B3-011

A08-B3-SD-007	
U-234	5.4
U-235	0.4
U-238	6.6
Th-228	0.2
Th-230	0.3
Th-232	0.14
Ra-226	0.2
Ra-228	0.2

A08-B3-007

A08-B3-SD-008	
U-234	278
U-235	14
U-238	289
Th-228	0.2
Th-230	0.5
Th-232	0.18
Ra-226	0.16
Ra-228	0.1

A08-B3-008

A08-B3-SD-009	
U-234	9.9
U-235	0.6
U-238	10.3
Th-228	0.6
Th-230	0.6
Th-232	0.5
Ra-226	0.4
Ra-228	0.28

A08-B3-009

A08-B3-SD-010	
U-234	10
U-235	0.5
U-238	11
Th-228	0.7
Th-230	2.4
Th-232	0.6
Ra-226	2.1
Ra-228	0.7

A08-B3-010

A08-A01-SD-002	
U-234	1.6
U-235	0.11
U-238	1.8
Th-228	0.6
Th-230	0.6
Th-232	0.4
Ra-226	0.5
Ra-228	0.3

A08-A01-002

A08-B04&B09-SD-002	
U-234	5.7
U-235	0.31
U-238	6.5
Th-228	0.29
Th-230	0.36
Th-232	0.23
Ra-226	0.3
Ra-228	0.1

A08-B4-002

A08-B04&B09-SD-003	
U-234	18
U-235	0.8
U-238	21
Th-228	0.3
Th-230	0.5
Th-232	0.19
Ra-226	0.1
Ra-228	0.2

A08-B4-003

A08-B04&B09-SD-004	
U-234	4
U-235	0.2
U-238	4.5
Th-228	0.22
Th-230	0.23
Th-232	0.13
Ra-226	0.11
Ra-228	0.1

A08-B4-004

4&9

A08-B04&B09-SD-005	
U-234	15
U-235	0.8
U-238	17
Th-228	0.16
Th-230	0.3
Th-232	0.15
Ra-226	0.1
Ra-228	0.3

A08-B4-005

A08-A01-SD-005	
U-234	1.8
U-235	0.16
U-238	1.8
Th-228	0.4
Th-230	0.3
Th-232	0.3
Ra-226	0.1
Ra-228	0.2

A08-A01-005

A08-A01-SD-003	
U-234	1.2
U-235	0.01
U-238	1
Th-228	0.5
Th-230	0.7
Th-232	0.5
Ra-226	0.17
Ra-228	0.3

A08-A01-003

A08-B04&B09-SD-001	
U-234	6.9
U-235	0.28
U-238	7.3
Th-228	0.35
Th-230	0.31
Th-232	0.25
Ra-226	0.3
Ra-228	0.2

A08-B4-001

A

14

47

4&9

3

2

1

A08-A01-SD-012	
U-234	6
U-235	0.2
U-238	5.5
Th-228	0.21
Th-230	0.9
Th-232	0.3
Ra-226	0.6
Ra-228	0.1

A08-A01-012 Ⓜ

A08-A01-SD-004	
U-234	10
U-235	0.7
U-238	11
Th-228	0.6
Th-230	0.5
Th-232	0.5
Ra-226	0.5
Ra-228	0.5

A08-A01-004

A08-A01-SD-001R	
U-234	6.2
U-235	0.31
U-238	6.7
Th-228	0.29
Th-230	0.4
Th-232	0.23
Ra-226	0.06
Ra-228	0.1

A08-A01-001

Ohio Street

Rt. 93

Erie Canal

1 inch = 165 feet

A08-A01-SD-009	
U-234	2.1
U-235	0.13
U-238	2.2
Th-228	0.4
Th-230	0.5
Th-232	0.3
Ra-226	0.4
Ra-228	0.3

A08-A01-009

A08-A01-SD-013	
U-234	2.6
U-235	0.13
U-238	2.5
Th-228	0.9
Th-230	1
Th-232	0.9
Ra-226	0.5
Ra-228	0.6

A08-A01-013

A08-A01-SD-010	
U-234	6.4
U-235	0.3
U-238	6.6
Th-228	0.5
Th-230	0.4
Th-232	0.4
Ra-226	0.1
Ra-228	0.3

A08-A01-010

35

A08-B2-SD-002	
U-234	5.6
U-235	0.2
U-238	5.6
Th-228	0.5
Th-230	0.6
Th-232	0.4
Ra-226	0.25
Ra-228	0.3

A08-B2-002

A08-B2-SD-003	
U-234	5.5
U-235	0.2
U-238	5.7
Th-228	0.5
Th-230	0.7
Th-232	0.7
Ra-226	1.1
Ra-228	1

A08-B2-003 Ⓜ

2

A08-B1-SD-003	
U-234	48
U-235	3
U-238	52
Th-228	0.4
Th-230	0.4
Th-232	0.3
Ra-226	0.3
Ra-228	0.3

A08-B1-003

A08-B1-SD-006	
U-234	12
U-235	0.7
U-238	14
Th-228	0.4
Th-230	0.6
Th-232	0.4
Ra-226	0.2
Ra-228	0.3

A08-B1-006

A08-B1-SD-004	
U-234	69
U-235	3.3
U-238	78
Th-228	1.2
Th-230	0.8
Th-232	0.8
Ra-226	1.5
Ra-228	0.9

A08-B1-004

1

A08-B1-SD-002	
U-234	3
U-235	0.08
U-238	3.6
Th-228	0.2
Th-230	0.3
Th-232	0.2
Ra-226	0.24
Ra-228	0.3

A08-B1-002

A08-B2-SD-001	
U-234	1.2
U-235	0.04
U-238	1.3
Th-228	1.5
Th-230	0.8
Th-232	1.4
Ra-226	0.65
Ra-228	1.8

A08-B2-001

A08-B1-SD-001	
U-234	7.5
U-235	0.3
U-238	8
Th-228	0.3
Th-230	0.4
Th-232	0.2
Ra-226	0.31
Ra-228	0.2

A08-B1-001

A08-B1-SD-005	
U-234	23
U-235	1.2
U-238	25
Th-228	0.27
Th-230	0.4
Th-232	0.28
Ra-226	0.23
Ra-228	0.2

A08-B1-005

A08-B1-SL-001	
U-234	1.5
U-235	0.09
U-238	1.7
Th-228	0.31
Th-230	0.34
Th-232	0.37
Ra-226	0.14
Ra-228	0.13

A08-B1SL-001

To Inset A

Sediment Sample Locations

Feature Descriptions

- Basement
- Basin
- Catch Basin
- Vault
- Drain Pipe
- Floor Trench
- Furnace pit
- ? Inaccessible
- Oil/Water Separator
- Outfall
- Pumphouse Reservoir
- Sewer Manhole
- Manhole
- Buildings

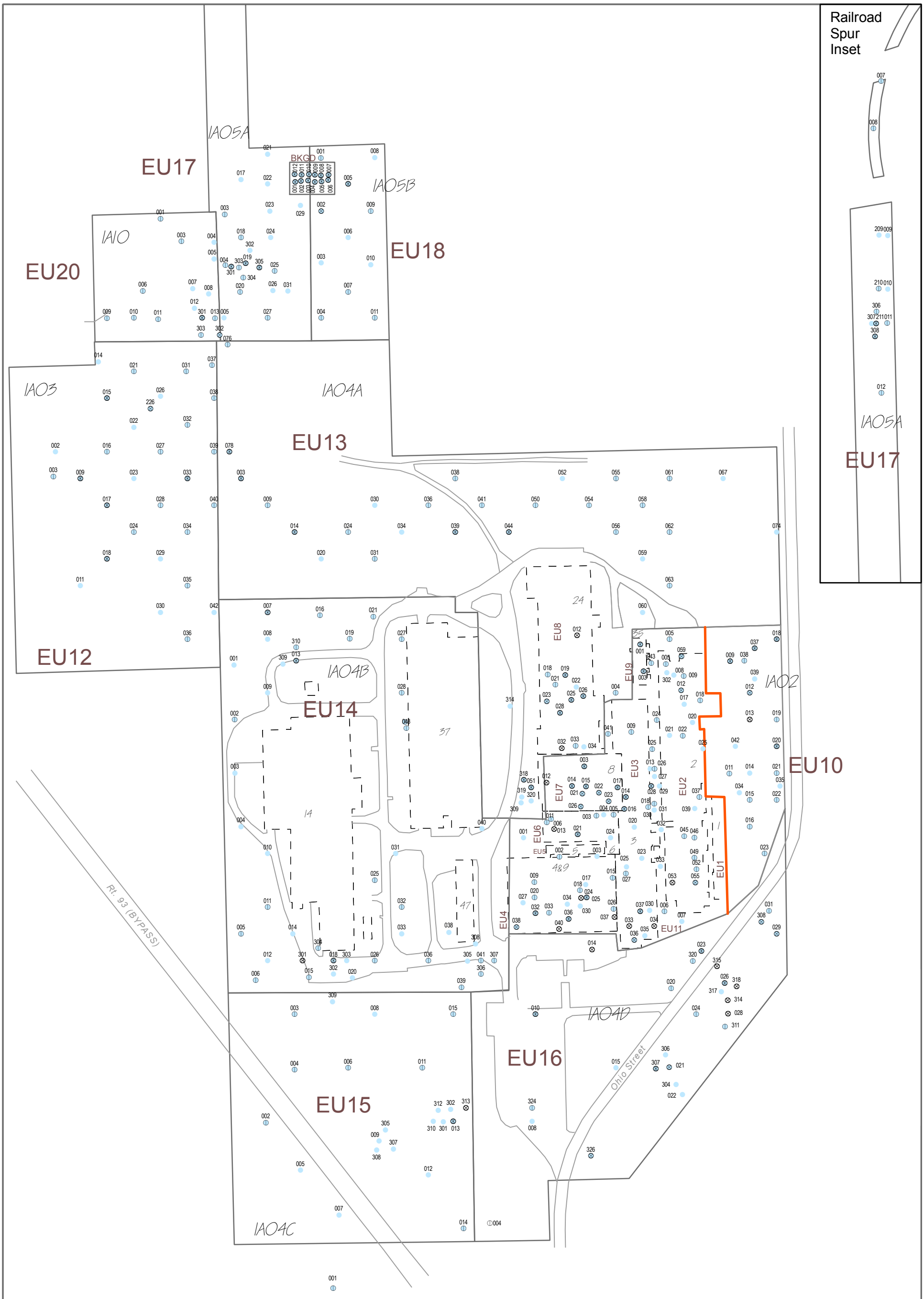
Notes:
pCi/g – picocuries per gram
All radiological results are presented in pCi/g.
U-235 concentration includes U-236, if present.
U-234, U-235, U-238, Th-228, Th-230, and Th-232 were analyzed by alpha spectroscopy.
Ra-226 and Ra-228 were analyzed by gamma spectroscopy.

United States Army Corps of Engineers
Buffalo District

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

NON-NATIVE SEDIMENT SAMPLE RESULTS - IA08

Date:	Scale:	Figure No. :
11/10/09	1 inch = 32 feet	4-30



- Radium Analysis
- Gamma Spectroscopy Analysis
- Alpha Spectroscopy Analysis
- EU10-EU11 Boundary
- Paved Areas
- EU 19 Exposure Units (EU)
- Guterl Buildings

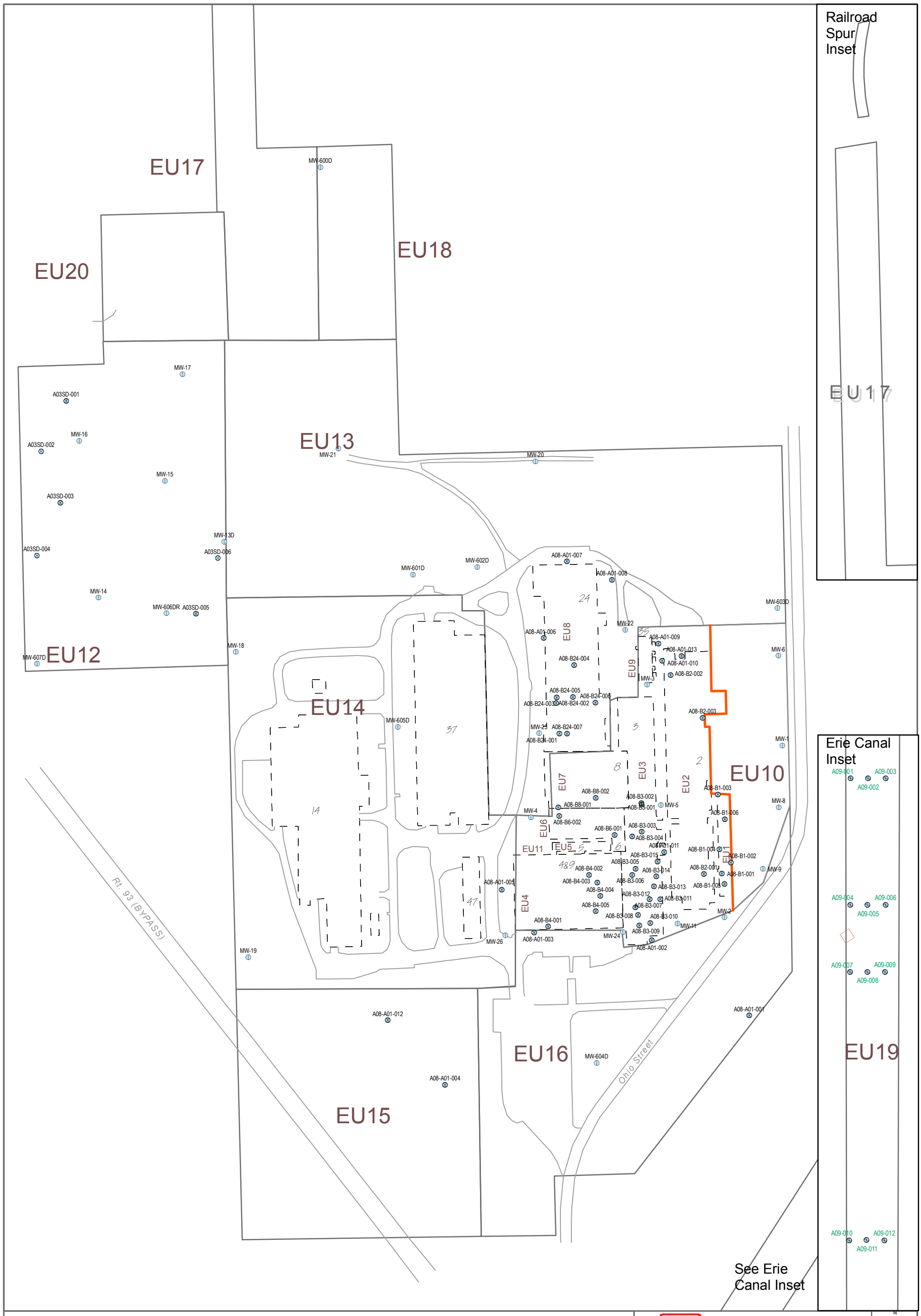
Station IDs:
IA-Station Number (e.g., A02-001)
Building No.-Station Number (e.g., B24-008)

United States Army Corps of Engineers
Buffalo District

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

EXPOSURE UNITS FOR THE BASELINE RISK ASSESSMENT SOIL SAMPLES

Date:	Scale:	Figure No. :
11/10/09	1 inch = 225 feet	6-1



- Radium Analysis
- Gamma Spectroscopy Analysis
- Alpha Spectroscopy Analysis
- EU10-EU11 Boundary
- Paved Areas
- Guterl Buildings
- Exposure Units (EU)
- Former Guteral Steel Industrial Water Pump House Intake and Oil/Water Separator Overflow Outfall

Native sediment samples are identified by a green station ID, e.g. A9-001

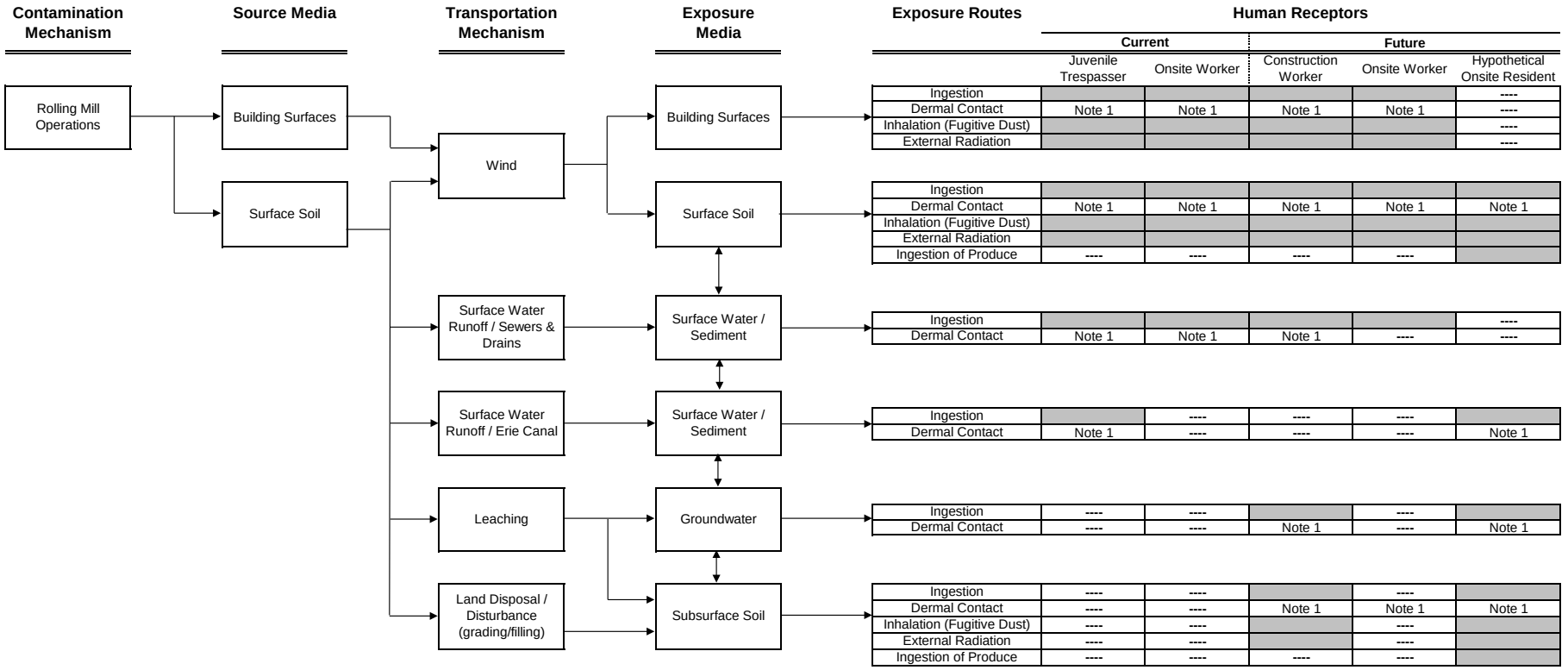
United States Army Corps of Engineers
Buffalo District

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

EXPOSURE UNITS FOR THE BASELINE RISK ASSESSMENT SEDIMENT, SURFACE WATER, AND GROUNDWATER SAMPLES

Date:	Scale:	Figure No. :
11/10/09	1 inch = 225 feet	6-2

Figure 6-3
Generalized Conceptual Site Model
Potential Pathways for Human Exposure
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York



Note 1: Dermal contact with this medium is possible for this receptor but is not significant for the radionuclides present at this site because of their very low absorption rates. Therefore, this exposure route will not be evaluated quantitatively in the human health risk assessment.

TABLES

TABLE 2-1
SUMMARY OF EXCISED AREA BUILDINGS
REMEDIAL INVESTIGATION FORMER GUTERL SPECIALTY STEEL CORPORATION FUSRAP SITE

Building	Year	~ Floor Space		Use of Building
#	Built [a]	(sf)	(sm)	
1	1913	8780	816	Manufactured Gas House, Metal Smelting (USACE, 2001)
2	1914	68900	6401	Metal Rolling/Manufacturing (ORNL, 1978)
3	1920/1946/1951	67800	6299	Mill Area/Metal Rolling and Grinding (ORNL, 1978); additions to north and south, respectively.
4	1920/1951	28000	2601	Mill Area/Metal Rolling/Manufacturing and Loading Dock (ORNL, 1978); addition to west.
9	1918/1951	19400	1802	Mill Area/Metal Rolling/Manufacturing and Loading Dock (ORNL, 1978); addition to west.
5	1918	3770	350	Housed Heat Exchanger (ORNL, 1978); Transformer Station and Power House (ORISE, 1999)
6	1918	15090	1402	Metal Rolling and Loading Dock (ORNL, 1978)
8	1918	27880	2590	Metal Rolling and Loading Dock (ORNL, 1978); Cold Rolling (ORISE, 1999)
24SW	1941/1951	10750	999	Mill Area (ORNL, 1978); Allegheny general storage (ORISE, 1999); addition to north.
24SE	1959	19350	1798	Mill Area (ORNL, 1978); Allegheny general storage (ORISE, 1999)
24N	1966	36250	3368	Mill Area (ORNL, 1978); Allegheny general storage (ORISE, 1999)
35	1950	3280	305	Metal Rolling and Grinding (USACE, 2001); Allegheny general storage (ORISE, 1999)

Notes:

[a] Dates of construction are based on Industrial Risk Insurers, 1985. Additions to original construction are listed to the right of original construction date.

[b] Building 24 is not in the Excised Area but is included here to consolidate this basic information.

(sf) - square feet

(sm) - square meters

SW - southwest

SE - southest

N - north

TABLE 3-4
SCREENING LEVELS FOR BUILDING SURFACES
REMEDIAL INVESTIGATION FORMER GUTERL SPECIALTY STEEL CORPORATION FUSRAP SITE

Nuclide [a]	***Average (dpm/100 cm^2)*** [b c]	***Maximum (dpm/100 cm^2)*** [b d]	***Removable (dpm/100 cm^2)*** [b e]
Natural U, ^{235}U, ^{238}U and associated decay products [f]	5,000	15,000	1,000
Natural Th, ^{232}Th [f]	1,000	3,000	200

Notes:
[a] Where surface contamination by both alpha- and beta/gamma-emitting nuclides exists, the limits established for alpha- and beta/gamma-emitting nuclides should apply independently.
[b] As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive materials as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency and geometric factors associated with the instrumentation.
[c] Measurements of average contaminant should not be averaged over more than 1 square meter. For objects of less surface area, the average should be derived for each object.
[d] The maximum contamination level applies to an area of not more than 100 cm^2.
[e] The amount of removable radioactive material per 100 cm^2 of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.
[f] The radium isotopes are progeny in the thorium and uranium decay chains and, hence, the listed values include them with their parent radionuclides.
SOURCE: Table 6-4, USACE Engineer Manual 385-1-80, *Radiation Protection Manual*, 30 May 1997.

TABLE 3-32
SUMMARY OF AVERAGE SOIL BACKGROUND CONCENTRATIONS
REMEDIAL INVESTIGATION FORMER GUTERL SPECIALTY STEEL CORPORATION FUSRAP SITE

Method	Concentration (pCi/g) [a]							
	^{226}Ra	^{228}Ra	^{228}Th	^{230}Th	^{232}Th	^{234}U	^{235}U	^{238}U
Onsite laboratory gamma	—	0.33 ± 0.16[b] 0.644 ± 0.018[b] 1.4 ± 0.2[b]	0.33 ± 0.16[b] 0.644 ± 0.018[b] 1.4 ± 0.2[b]	—	0.33 ± 0.16 0.644 ± 0.018 1.4 ± 0.2	0.18 ± 0.16[c] 0.82 ± 0.05[c] 1.9 ± 0.08[c]	0.18 ± 0.16[d] 0.82 ± 0.05[d] 1.9 ± 0.08[d]	0.18 ± 0.16 0.82 ± 0.05 1.9 ± 0.8
Offsite laboratory gamma	0.51 ± 0.14 0.82 ± 0.04 1.37 ± 0.19	0.6 ± 0.2 0.79 ± 0.05 1.1 ± 0.3	0.6 ± 0.2[b] 0.79 ± 0.05[b] 1.1 ± 0.3[b]	—	0.6 ± 0.2 0.79 ± 0.05 1.1 ± 0.3	—	0.0 ± 0.3 0.11 ± 0.07 0.2 ± 0.2	0 ± 3[e] 1.44 ± 0.20[e] 3.0 ± 1.4[e]
Alpha	—	0.59 ± 0.13[b] 0.80 ± 0.04[b] 1.1 ± 0.2[b]	0.56 ± 0.15 0.85 ± 0.04 1.1 ± 0.2	0.67 ± 0.16 0.88 ± 0.04 1.2 ± 0.2	0.59 ± 0.13 0.80 ± 0.04 1.1 ± 0.2	0.44 ± 0.10 0.68 ± 0.03 0.93 ± 0.18	0.009 ± 0.015 0.026 ± 0.005 0.07 ± 0.04	0.46 ± 0.10 0.70 ± 0.03 1.06 ± 0.20
GFPC	0.56 ± 0.20 1.02 ± 0.05 1.4 ± 0.3	0.4 ± 0.2 0.72 ± 0.07 1.3 ± 0.5	—	—	—	—	—	—
ICP-MS [f]	—	—	—	—	—	— (4 ± 2) x 10^{-3} µg/g —	2.7 x 10^{-3} µg/g[g] (5 ± 3) x 10^{-3} µg/g —	0.37 µg/g (0.7 ± 0.4) µg/g 0.98 µg/g

Notes:

[a] The three values shown for each method and COPC are the minimum reported concentration, the weighted average concentration, and the maximum reported concentration.

[b] ^{228}Ra and ^{228}Th concentrations derived from ^{232}Th concentration assuming secular equilibrium.

[c] ^{234}U concentration derived from ^{238}U concentration assuming secular equilibrium.

[d] ^{235}U concentration derived from ^{238}U concentration assuming natural abundance.

[e] Gamma spectroscopy ^{238}U concentrations from the offsite laboratory are not used in this report because of concerns about their accuracy. They are shown for information purposes only.

[f] Bracketed numbers are the laboratory reporting limits. Specific activity of ^{238}U is 0.336 pCi/µg (converted from value in Table 3.4.1-8), so (0.7 ± 0.4) µg/g × 0.336 pCi/µg = (0.25 ± 0.15) pCi/g.

[g] This laboratory-reported value is greater than the laboratory detection limit but less than the laboratory reporting limit.

TABLE 3-36
RADIONUCLIDE CONCENTRATIONS IN BACKGROUND (CLASS 3 AREAS) BUILDING MATERIAL SAMPLES
REMEDIAL INVESTIGATION FORMER GUTERL SPECIALTY STEEL CORPORATION FUSRAP SITE

Sample ID [a]	Concentration (pCi/g)[b]											
	^{226}Ra		^{228}Ra		^{228}Th	^{230}Th	^{232}Th		^{234}U	^{235}U		^{238}U
	GFPC	Gamma	GFPC	Gamma	Alpha	Alpha	Alpha	Gamma	Alpha	Alpha	Gamma	Alpha
Brick												
B05-BM-002	1.2 ± 0.3	1.0 ± 0.2	0.8 ± 0.4	1.0 ± 0.3	1.1 ± 0.3	1.2 ± 0.3	1.2 ± 0.3	1.0 ± 0.3	0.78 ± 0.20	0.04 ± 0.05	–0.1 ± 1.2	0.80 ± 0.20
B08-BM-002	1.0 ± 0.3	1.3 ± 0.3	1.1 ± 0.5	1.5 ± 0.3	1.3 ± 0.4	1.2 ± 0.3	1.3 ± 0.4	1.5 ± 0.3	3.1 ± 0.6	0.17 ± 0.11	0.2 ± 0.4	3.4 ± 0.6
B35-BM-002	0.7 ± 0.2	0.73 ± 0.13	0.1 ± 0.4	0.66 ± 0.15	0.8 ± 0.2	1.8 ± 0.4	0.66 ± 0.15	0.66 ± 0.15	0.67 ± 0.18	0.06 ± 0.06	0.1 ± 0.2	1.0 ± 0.2
Ceramic tile												
B03-BM-007	1.4 ± 0.3	1.6 ± 0.2	0.6 ± 0.4	2.2 ± 0.3	1.5 ± 0.4	1.4 ± 0.3	1.6 ± 0.4	2.2 ± 0.3	1.3 ± 0.3	0.07 ± 0.08	0± 0.7	1.4 ± 0.3
Cinder Block												
B04&B09-BM-004	1.0 ± 0.2	0.82 ± 0.19	0.4 ± 0.4	0.5 ± 0.2	0.67 ± 0.20	1.1 ± 0.3	0.57 ± 0.18	0.5 ± 0.2	1.0 ± 0.2	0.03 ± 0.04	0.0 ± 0.4	1.0 ± 0.2
B24-BM-004	0.27 ± 0.15	0.37 ± 0.11	-1.0 ± 0.3	0.08 ± 0.13	0.21 ± 0.12	0.38 ± 0.14	0.19 ± 0.10	0.08 ± 0.13	0.30 ± 0.12	0.03 ± 0.05	0.07 ± 0.16	0.29 ± 0.12
Particle Board												
B02-BM-010	0.15 ± 0.12	0.5 ± 0.5	0.0 ± 0.3	0.2 ± 0.9	0.25 ± 0.11	0.27 ± 0.12	0.26 ± 0.11	0.2 ± 0.9	2.2 ± 0.4	0.07 ± 0.06	0.2 ± 0.6	2.6 ± 0.4
Wallboard												
B01-BM-003	0.56 ± 0.18	0.0 ± 0.3	-0.1 ± 0.4	0.00 ± 0.16	0.14 ± 0.09	0.15 ± 0.09	0.06 ± 0.05	0.00 ± 0.16	0.65 ± 0.18	0.03 ± 0.04	0.1 ± 0.5	0.74 ± 0.19
Wood												
B06-BM-006	-0.2 ± 0.2	-0.1 ± 0.9	-0.7 ± 0.8	-1 ± 18	0.07 ± 0.07	0.12 ± 0.09	0.04 ± 0.06	-1 ± 18	4.0 ± 0.7	0.21 ± 0.13	0.2 ± 1.5	4.5 ± 0.8

Notes:

[a] Laboratory duplicate and field duplicate results are combined with original sample results using weighted averaging.

[b] GFPC denotes Gas Flow Proportional Counting, Gamma denotes Gamma Spectroscopy, Alpha denotes Alpha Spectroscopy

pCi/g = picocuries per gram

TABLE 6-1
ALPHA SPEC SAMPLE IDs FOR HHRA BY EXPOSURE UNITS
REMEDIAL INVESTIGATION FORMER GUTERL SPECIALITY STEEL CORPORATION FUSRAP SITE

IA01 - Excised Area, Building Interiors									IA02 - Building Exterior Areas		IA03 - Landfill Area	IA04 - NCIDA Property				IA05 - Railroad Right-of-Way		IA06 - Off-Site NE Properties	IA07 - Groundwater	IA08 - Site Utilities	IA09 - Erie Barge Canal	IA10 - Lot 4.1 ("Lombardi Property")	Building Material Background Samples	Off-Site Background Soil Samples
EU1 - Building 1	EU2 - Building 2	EU3 - Building 3	EU4 - Building 4/9	EU5 - Building 5	EU6 - Building 6	EU7 - Building 8	EU8 - Building 24	EU9 - Building 35	EU10 - E. of Buildings	EU11 - Between Buildings	EU12 - Landfill	EU13 - IA04A	EU14 - IA04B	EU15 - IA04C	EU16 - IA04D	EU17 - IA05A	EU18 - IA05B	---[a]	---[b]	---[c]	EU19	EU20	---[d]	---[e]
Building Materials:	*Building Materials:*	*Building Materials:*	*Building Materials:*	*Building Materials:*	*Building Materials:*	*Building Materials:*	*Building Materials:*	*Building Materials:*	*Surface Soil:*	*Surface Soil:*	*Surface Soil:*	*Surface Soil:*	*Surface Soil:*	*Surface Soil:*	*Surface Soil:*	*Surface Soil:*	*Surface Soil:*				*Sediment:*	*Surface Soil:*	B01-BM-003	*Total Soil:*
B01-BM-001	B02-BM-001	B03-BM-001	B04&B09-BM-001	B05BM001	B06-BM-001	B08-BM-001	B24-BM-001	B35-BM-001	A02SL-011-01	A02SL-001-01	A03SL-002-01	A04ASL-003-01	A04BSL-001-01	A04CSL-001-01	A04DSL-015-01	A05ASL-003-01	A05BSL-001-01				A09-SD-001	A10SL-001-01[f]	B02-BM-010	BKGSL-001-01
B01-BM-002	B02-BM-002	B03-BM-002	B04&B09-BM-002		B06-BM-002	*Surface Soil:*	B24-BM-002	*Surface Soil:*	A02SL-012-01[h]	A02SL-002-01	A03SL-009-01	A04ASL-009-01	A04BSL-002-01	A04CSL-002-01	A04DSL-020-01	A05ASL-004-01	A05BSL-003-01				A09-SD-002	A10SL-003-01[f]	B03-BM-007	BKGSL-001-02
Sediment:	B02-BM-003	B03-BM-003	B04&B09-BM-003		B06-BM-003	B08SL-003-01	B24-BM-003	B35SL-001-01[f]	A02SL-014-01	A02SL-003-01[i]	A03SL-011-01	A04ASL-014-01	A04BSL-003-01[f]	A04CSL-003-01	A04DSL-021-01	A05ASL-005-01	A05BSL-004-01				A09-SD-003	A10SL-004-01[f]	B04&B09-BM-004	BKGSL-002-01
A08-B1-SD-001	B02-BM-004	B03-BM-004	*Surface Soil:*		B06-BM-004	B08SL-014-01[f]	B24SL-601-01	*Subsurface Soil:*	A02SL-015-01	A02SL-005-01	A03SL-018-01	A04ASL-020-01	A04BSL-004-01	A04CSL-005-01	A04DSL-023-01	A05ASL-007-01	A05BSL-005-01				A09-SD-004	A10SL-005-01[f]	B05BM002	BKGSL-002-04
A08-B1-SD-002	B02-BM-005	B03-BM-005	B04&B09SL-015-01		B06-BM-005	B08SL-015-01[f]	B24SL-602-01	B35SL-003-07	A02SL-016-01	A02SL-007-01	A03SL-021-01	A04ASL-024-01	A04BSL-005-01	A04CSL-006-01	A04DSL-024-01	A05ASL-008-01	A05BSL-006-01				A09-SD-005	A10SL-006-01[f]	B06-BM-006	BKGSL-003-01
A08-B1-SD-003	B02-BM-006	B03-BM-006	B04&B09SL-017-01		*Surface Soil:*	B08SL-017-01[f]	B24SL-603-01		A02SL-020-01	A02SL-024-01	A03SL-026-01	A04ASL-031-01	A04BSL-006-01	A04CSL-007-01	A04DSL-026-01	A05ASL-009-01[f]	A05BSL-007-01				A09-SD-006	A10SL-007-01[f]	B08-BM-002	BKGSL-003-09
A08-B1-SD-004	B02-BM-007	*Surface Soil:*	B04&B09SL-018-01		B06SL-003-01	B08SL-022-01[f]	*Surface Soil:*		A02SL-022-01	A02SL-025-01	A03SL-027-01	A04ASL-034-01	A04BSL-008-01	A04CSL-008-01	A04DSL-029-01	A05ASL-011-01	A05BSL-008-01				A09-SD-007	A10SL-008-01[f]	B24-BM-004	BKGSL-004-01
A08-B1-SD-005	B02-BM-008	B03SL-009-01[f]	B04&B09SL-020-01[f]		B06SL-005-01	B08SL-023-01	B24SL-019-01[f]		A02SL-023-01	A02SL-026-01	A03SL-028-01	A04ASL-038-01	A04BSL-009-01	A04CSL-009-01	A04DSL-204-01[h]	A05ASL-012-01	A05BSL-009-01				A09-SD-008	A10SL-009-01[f]	B35-BM-002	BKGSL-004-02
A08-B1-SD-006	B02-BM-009	B03SL-013-01[f]	B04&B09SL-026-01		B06SL-006-01[f]	*Subsurface Soil:*	B24SL-021-01[f]		A02SL-034-01	A02SL-027-01[f]	A03SL-029-01	A04ASL-044-01	A04BSL-010-01	A04CSL-011-01	A04DSL-220-01	A05ASL-017-01	A05BSL-010-01				A09-SD-009	A10SL-010-01[f]		BKGSL-005-01
A08-B1-SL-001	*Surface Soil:*	B03SL-014-01	B04&B09SL-027-01[f]		B06SL-021-01	B08SL-003-05	B24SL-022-01[f]		A02SL-035-01	A02SL-028-01[f]	A03SL-031-01	A04ASL-051-01	A04BSL-011-01	A04CSL-012-01	A04DSL-307-01	A05ASL-018-01	A05BSL-011-01				A09-SD-010	A10SL-012-01[f]		BKGSL-005-02
Surface Water:	B02SL-005-01[f]	B03SL-016-01	B04&B09SL-030-01[f]		B06SL-024-01[f]	B08SL-015-09	B24SL-026-01[f]		A02SL-038-01	A02SL-029-01	A03SL-033-01	A04ASL-054-01	A04BSL-013-01	A04CSL-013-01	A04DSL-308-01	A05ASL-019-01	*Subsurface Soil:*				A09-SD-011	A10SL-013-01[f]		BKGSL-006-01
A08-B1-SW-001	B02SL-008-01[f]	B03SL-020-01	B04&B09SL-032-01[f]		*Subsurface Soil:*	B08SL-017-05	B24SL-028-01[f]		A02SL-042-01	A02SL-030-01	A03SL-035-01	A04ASL-055-01	A04BSL-014-01	A04CSL-014-01	A04DSL-317-01	A05ASL-020-01	A05BSL-001-12				A09-SD-012	A10SL-301-01[j]		BKGSL-006-03
A08-B1-SW-002	B02SL-009-01[f]	B03SL-023-01[f]	B04&B09SL-034-01[f]		B06SL-004-05	B08SL-021-06	B24SL-033-01[f]		A02SL-215-01	A02SL-032-01	A03SL-036-01	A04ASL-056-01	A04BSL-016-01	A04CSL-015-01	A04DSL-326-01	A05ASL-021-01	A05BSL-001-13				*Surface Water:*	A10SL-303-01		BKGSL-007-01
A08-B1-SW-003	B02SL-012-01[f]	B03SL-030-01	*Subsurface Soil:*		B06SL-006-02	B08SL-023-03	B24SL-034-01[f]		A02SL-216-01	A02SL-033-01	A03SL-037-01	A04ASL-058-01	A04BSL-019-01	A04CSL-301-01	*Subsurface Soil:*	A05ASL-022-01	A05BSL-002-11				A09-SW-001	*Subsurface Soil:*		BKGSL-007-04
A08-B1-SW-004	B02SL-018-01[f]	B03SL-035-01[f]	B04&B09SL-009-02		B06SL-011-05	B08SL-026-02	*Subsurface Soil:*		A02SL-234-01	A02SL-041-01	A03SL-038-01	A04ASL-059-01	A04BSL-021-01	A04CSL-305-01	A04DSL-008-05	A05ASL-023-01	A05BSL-003-03				A09-SW-002	A10SL-004-02		BKGSL-008-01
A08-B1-SW-005	B02SL-020-01	B03SL-037-01	B04&B09SL-015-02		B06SL-021-05	*Sediment:*	B24SL-018-02		*Subsurface Soil:*	A02SL-043-01	A03SL-040-01	A04ASL-060-01	A04BSL-025-01	A04CSL-307-01	A04DSL-022-06	A05ASL-024-01	A05BSL-004-03				A09-SW-003	A10SL-009-02		BKGSL-008-03
A08-B1-SW-006	B02SL-045-01[f]	*Subsurface Soil:*	B04&B09SL-017-02		B06SL-021-06	A08-B8-SD-001	B24SL-018-03		A02SL-009-04	*Subsurface Soil:*	A03SL-042-01	A04ASL-061-01	A04BSL-026-01[f]	A04CSL-308-01	A04DSL-023-03	A05ASL-025-01	A05BSL-005-03				A09-SW-004	A10SL-010-02		BKGSL-009-01
	B02SL-046-01	B03SL-014-05	B04&B09SL-018-02		*Sediment:*	A08-B8-SD-002	B24SL-019-02		A02SL-012-02	A02SL-004-07	A03SL-203-01	A04ASL-062-01	A04BSL-027-01	A04CSL-309-01	A04DSL-031-03	A05ASL-026-01	A05BSL-006-11				A09-SW-005	A10SL-011-02		BKGSL-009-03
	B02SL-049-01[f]	B03SL-016-05	B04&B09SL-025-02		A08-B6-SD-001	*Surface Water:*	B24SL-021-02		A02SL-015-10	A02SL-005-02	A03SL-209-01	A04ASL-203-01	A04BSL-028-01	A04CSL-310-01	A04DSL-210-02	A05ASL-029-01	A05BSL-007-03				A09-SW-006	A10SL-013-02		BKGSL-010-01
	B02SL-059-01[f]	B03SL-018-02	B04&B09SL-033-02		A08-B6-SD-002	A08-B8-SW-001	B24SL-023-02		A02SL-015-11	A02SL-006-03	A03SL-217-01	A04ASL-214-01	A04BSL-033-01	A04CSL-312-01	A04DSL-304-03	A05ASL-210-01	A05BSL-007-10				A09-SW-007	A10SL-301-02		BKGSL-010-03
	B02SL-302-01[f]	B03SL-025-03	B04&B09SL-036-02			A08-B8-SW-002	B24SL-025-02		A02SL-016-02	A02SL-007-05	A03SL-221-01	A04ASL-220-01	A04BSL-039-01	*Subsurface Soil:*	A04DSL-306-02	A05ASL-211-01	A05BSL-008-02				A09-SW-008	A10SL-302-02		BKGSL-011-01
	B02SL-721-01[g]	B03SL-027-03	B04&B09SL-038-02				B24SL-026-02		A02SL-016-03	A02SL-024-07	A03SL-224-01	A04ASL-238-01	A04BSL-042-01	A04CSL-003-02	A04DSL-307-02	A05ASL-219-01	A05BSL-010-03				A09-SW-009	A10SL-302-13		BKGSL-011-08
	B02SL-739-01[g]	B03SL-030-02	B04&B09SL-038-03				*Sediment:*		A02SL-018-03	A02SL-028-02	A03SL-226-01	A04ASL-241-01	A04BSL-043-01	A04CSL-004-02	A04DSL-311-02	A05ASL-226-01	A05BSL-010-04				A09-SW-010	A10SL-303-02		BKGSL-012-01
	Subsurface Soil:	B03SL-036-02	*Sediment:*				A08-B24-SD-001		A02SL-019-02	A02SL-030-06	A03SL-228-01	A04ASL-244-01	A04BSL-221-01	A04CSL-006-02	A04DSL-320-05	A05ASL-301-01	A05BSL-011-03				A09-SW-011	A10SL-303-13		BKGSL-012-04
	B02SL-009-02	*Sediment:*	A08-B04&B09-SD-001				A08-B24-SD-002		A02SL-019-06	A02SL-031-06	A03SL-231-01	A04ASL-276-01	A04BSL-303-01[f]	A04CSL-006-03	A04DSL-324-03	A05ASL-302-01	*Groundwater:*				A09-SW-012	A10SL-303-18		
	B02SL-012-02	A08-B3-SD-002	A08-B04&B09-SD-002				A08-B24-SD-003		A02SL-020-02	*Groundwater:*	A03SL-232-01	A04ASL-278-01	A04BSL-307-01[f]	A04CSL-011-03	A04DSL-324-04	A05ASL-303-01	A05BMW600D							
	B02SL-017-05	A08-B3-SD-003	A08-B04&B09-SD-003				A08-B24-SD-004		A02SL-020-03	A02-MW3	A03SL-233-01	A04ASL-309-01	A04BSL-308-01	A04CSL-011-04	*Groundwater:*	A05ASL-304-01								
	B02SL-018-02	A08-B3-SD-004	A08-B04&B09-SD-004				A08-B24-SD-005		A02SL-021-03	A02-MW4	A03SL-234-01	A04ASL-318-01	A04BSL-309-01	A04CSL-013-02	A04DMW24	A05ASL-305-01								
	B02SL-018-03	A08-B3-SD-005	A08-B04&B09-SD-005				A08-B24-SD-006		A02SL-021-04	A02-MW5	A03SL-237-01	A04ASL-319-01	A04BSL-310-01	A04CSL-302-05	A04DMW604D	A05ASL-307-01								
	B02SL-022-03	A08-B3-SD-006	*Surface Water:*				A08-B24-SD-007		A02SL-022-04	A02-MW11	A03SL-239-01	A04ASL-320-01	*Subsurface Soil:*	A04CSL-307-02	*Sediment:*	A05ASL-308-01								
	B02SL-025-02	A08-B3-SD-007	A08-B04&B09-SW-001						A02SL-023-02	*Sediment:*	*Subsurface Soil:*	*Subsurface Soil:*	A04BSL-007-06	A04CSL-308-02	A08-A01-SD-001R	*Subsurface Soil:*								
	B02SL-037-05	A08-B3-SD-008	A08-B04&B09-SW-002						A02SL-035-02	A08-A01-SD-003	A03SL-009-02	A04ASL-003-03	A04BSL-008-03	A04CSL-309-05	A08-A01-SD-005	A05ASL-004-02								
	B02SL-049-02	A08-B3-SD-009	A08-B04&B09-SW-003						A02SL-037-05	A08-A01-SD-009	A03SL-011-02	A04ASL-051-02	A04BSL-012-06	A04CSL-310-02		A05ASL-007-03								
	B02SL-052-03	A08-B3-SD-010	A08-B04&B09-SW-004						A02SL-037-06	A08-A01-SD-010	A03SL-015-02	A04ASL-052-02	A04BSL-013-07	A04CSL-312-02		A05ASL-008-07								
	B02SL-052-05	A08-B3-SD-011	A08-B04&B09-SW-005						A02SL-039-03	A08-A01-SD-011	A03SL-018-03	A04ASL-055-02	A04BSL-014-07	*Sediment:*		A05ASL-009-07								
	B02SL-055-03	A08-B3-SD-012							A02SL-216-13	A08-A01-SD-013	A03SL-022-02	A04ASL-056-04	A04BSL-015-06	A08-A01-SD-004		A05ASL-010-07								
	B02SL-302-05	A08-B3-SD-013							A02SL-229-02	*Surface Water:*	A03SL-028-03	A04ASL-056-05	A04BSL-015-07	A08-A01-SD-012		A05ASL-010-08								
	Sediment:	A08-B3-SD-014							A02SL-234-02	A08-A01-SW-001	A03SL-028-05	A04ASL-058-02	A04BSL-016-03			A05ASL-011-06								
	A08-B2-SD-001	A08-B3-SD-015							*Groundwater:*	A08-A01-SW-004	A03SL-030-02	A04ASL-062-02	A04BSL-018-06			A05ASL-012-06								
	A08-B2-SD-002	*Surface Water:*							A02MW1	A08-A01-SW-005	A03SL-031-02	A04ASL-063-03	A04BSL-018-07			A05ASL-012-07								
	A08-B2-SD-003	A08-B3-SW-001							A02MW2	A08-A01-SW-006	A03SL-035-02	A04ASL-067-02	A04BSL-019-02			A05ASL-017-03								
	A08-A01-SD-002	A08-B3-SW-003							A02MW06	A08-A01-SW-007	A03SL-038-10	A04ASL-203-06	A04BSL-020-06			A05ASL-018-02								
	Surface Water:	A08-B3-SW-004							A02MW08	A08-A01-SW-011	A03SL-039-02	A04ASL-209-10	A04BSL-025-03			A05ASL-022-03								
	A08-B2-SW-001	A08-B3-SW-005							A02MW09	A08-A01-SW-012	A03SL-042-02	A04ASL-214-05	A04BSL-031-06			A05ASL-023-03								
	A08-B2-SW-003	A08-B3-SW-006									A03SL-214-06	A04ASL-214-06	A04BSL-031-07			A05ASL-024-02								
		A08-B3-SW-007									A03SL-216-10	A04ASL-214-09	A04BSL-032-06			A05ASL-027-03								
		A08-B3-SW-008									A03SL-217-13	A04ASL-220-14	A04BSL-032-07			A05ASL-029-03								
		A08-B3-SW-009									A03SL-217-14	A04ASL-224-10	A04BSL-036-05			A05ASL-031-03								
		A08-B3-SW-011									A03SL-222-10	A04ASL-224-11	A04BSL-038-07			A05ASL-209-25								
		A08-B3-SW-012									A03SL-223-05	A04ASL-224-14	A04BSL-040-03			A05ASL-219-02								
		A08-B3-SW-013									A03SL-224-02	A04ASL-230-05	A04BSL-041-05			A05ASL-301-02								
		A08-B3-SW-014									A03SL-224-05	A04ASL-236-09	A04BSL-042-02			A05ASL-301-06								
		A08-B3-SW-015									A03SL-227-04	A04ASL-238-05	A04BSL-043-02			A05ASL-303-13								
											A03SL-228-06	A04ASL-239-03	A04BSL-219-03			A05ASL-303-14								
											A03SL-231-02	A04ASL-244-02	A04BSL-302-06			A05ASL-304-02								
											A03SL-231-05	A04ASL-250-04	A04BSL-304-03			A05ASL-304-13								
											A03SL-232-06	A04ASL-274-11	A04BSL-305-06			A05ASL-304-14								
											A03SL-233-07	A04ASL-276-05	A04BSL-306-03			A05ASL-305-02								
											A03SL-239-11	A04ASL-278-10	A04BSL-308-02			A05ASL-305-03								
											A03SL-240-06	A04ASL-314-03	A04BSL-310-06			A05ASL-305-13								
											A03SL-240-07	A04ASL-318-02	A04BSL-310-07			A05ASL-306-03								
											Sediment:	*Groundwater:*	*Groundwater:*											
											A03-SD-001	A04AMW20	A04BMW18											
											A03-SD-002	A04AMW21	A04BMW19											
											A03-SD-003	A04AMW22	A04BMW26											
											A03-SD-004	A04AMW23	A04BMW605D											
											A03-SD-005	A04AMW601D												
											A03-SD-006	A04AMW602D												
											Groundwater:	A04AMW603D												
											A03MW13D	Sediment												
											A03MW14	A08-A01-SD-006												
											A03MW15	A08-A01-SD-007												
											A03MW16	A08-A01-SD-008												
											A03MW17													
											A03MW606DR													
											A03MW607D													

Notes:
Samples were analyzed at the off-site laboratory for isotopic uranium and isotopic thorium by alpha spectroscophy; a minimum of 50% of samples were analyzed for isotopic radium by gas flow proportional counting.
Blank cell indicates no sample for the medium and IA/EU other than what is indicated in occupied cells.
[a] No exposure units are associated with IA06, Off-Site NE Properties, as this area is considered non-impacted and will be designated for No Further Action.
[b] No exposure units are associated with IA07, Groundwater, as data from each monitoring well will be evaluated with the other media for each exposure unit within which it lies.
[c] No exposure units are associated with IA08, Site Utilities, as sediment or surface water data from each ditch or trench will be evaluated with the other media for each exposure unit within which it lies.
[d] Volumentric background reference samples for building materials were collected as Class 3 samples within the Excised Area to avoid damaging existing structures outside of the area.
[e] Soil background samples were not assigned an exposure unit number; soil background was not designated as surface or subsurface soil.
[f] This sample was collected immediately below the current building floor and is considered a surface soil sample for exposure purposes assuming that the building will be demolished.
[g] B02SL-721-01 and B02SL-739-01 are detritus samples being evaluated with surface soil data because they are dust/dirt and more closely resembled soil matrix (see Section 3.7.3 for more detail).
[h] Samples A02SL-012-01 and A04DSL-204-01 were only analyzed for Ra and not for isotopes of U and Th.
[i] A02SL-003-01 was originally labeled as A02SL-703-01. Surface soil collected at A02-003 location could not be drilled due to utility access issues; it was not collected by drilling.
[j] Sample A10SL-301-01 is a surface soil sample collected just outside the boundary of EU20 to delineate the extent of contamination it EU20.
EU = exposure units
IA = investigative area
NCIDA = Niagara County Industrial Development Agency
NE = northeast

TABLE 6-4
RECEPTOR-SPECIFIC AND SCENARIO-SPECIFIC RESRAD PARAMETER VALUES
REMEDIAL INVESTIGATION FORMER GUTERL SPECIALTY STEEL CORPORATION FUSRAP SITE

RESRAD Parameter	Units	RESRAD Default	Risk Variability[a]	Proposed Values[b]	Receptor or Scenario	Comment/Reference
Area of contaminated zone	m^2	10,000	3	67000	All receptors	Contaminated zone selected to represent all terrestrial EUs; individual EU values presented on Table 6-5
Thickness of contaminated zone	m	2.0	1	1	All receptors	Thickness of contaminated zone selected to represent all terrestrial EUs; individual EU values presented in Table 6-5
Length parallel to aquifer flow	m	100	4	600	All receptors	Value selected based on actual length of plume parallel to aquifer flow; individual EU values presented in Table 6-5
Time since placement of material	yr	0.0	-	Use default	All receptors	Using site-specific modeling option
Cover depth	m	0.0	3	Use default	All receptors	Cover will eliminate direct ingestion and inhalation pathways
Density of cover material	g/cm^3	1.5	3	Not used	All receptors	According to Manual Appendix A and E and DCH Section 2, omitted if cover depth = 0; geologist/hydrologist consulted
Cover depth erosion rate	m/yr	0.001	5	Not used	All receptors	If cover erodes, direct ingestion and inhalation pathways are relevant
Density of contaminated zone	g/cm^3	1.5	4	1.31	All receptors	Based on combining averages for each area
Contaminated zone erosion rate	m/yr	0.001	3	6.00E-05	All receptors	Can erode entire contaminated lens if value is large enough; assumed a conservative 2% slope and nonfarming use; DCH manual Section 14 for further discussion
Contaminated zone total porosity	unitless	0.4	5	0.3	All receptors	Geotech evaluation based on soil moisture of 15% for tills
Contaminated zone field capacity	unitless	0.2	7	0.15	All receptors	Based on available water content of 15%
Contaminated zone hydraulic conductivity	m/yr	10	7	3.15	All receptors	Based on native soil Shelby tube permeability lab tests (avg of two tests 1.3E-06 cm/sec), NYSDEC 2000 reference of 3.67E-07 cm/sec for a remolded sample, and Earth Tech geotechnical assessment of soil boring data (i.e., theoretical range based on soil types) of 1E-05 cm/sec to 1E-07 cm/sec
Contaminated zone b parameter	unitless	5.3	7	7.3	All receptors	Based on average manual and low hydraulic conductivity of till and silty clay soil type
Average annual wind speed	m/sec	2.0	6	4.5	All receptors	Averaged between Rochester and Buffalo windspeeds
Evapotranspiration coefficient	unitless	0.5	5	5.70E-01	All receptors	Based on average site-specific information; geologist/hydrologist consulted
Precipitation	m/yr	1.0	5	0.94	All receptors	Obtained from SEVIEW Climatic Database for Lockport 2 NE
Irrigation (I_r)	m/yr	0.2	5	0.2	Gardening	Small home garden will require watering.
Irrigation mode	unitless	Overhead	-	Use default	Gardening	Used in residential future scenario
Runoff coefficient	unitless	0.2	5	2.50E-01	All receptors	Value was selected to reflect poor drainage and silty soils that show infiltration and leaching capacity.
Watershed area for nearby stream or pond	m^2	1E+06	5	Use default	All receptors	Surface water dependent pathways; see Manual Appendix E and DCH Section 17
Accuracy for water/soil computations	unitless	0.001	-	Use default	All receptors	Related to water/soil concentration ratios; see Manual Appendix E
Saturated zone density	g/cm^3	1.5	4	2.61	All receptors	Estimate for dolostone based on reference[c] and USACE data.
Saturated zone total porosity	unitless	0.4	4	0.13	All receptors	Based on average site-specific information; geologist/hydrologist consulted
Saturated zone effective porosity	unitless	0.2	3	0.03	All receptors	Based on average site-specific information; geologist/hydrologist consulted
Saturated zone field capacity	unitless	0.2	7	0.03	All receptors	Geologist/hydrologist consulted
Saturated zone hydraulic conductivity	m/yr	100	3	1,540	All receptors	Geomean of measured hydraulic conductivity of bedrock and model manual; hydraulic conductivities ranged from 7.1x10E-05 cm/sec at monitoring well MW-15 to 8.9x10E-02 cm/sec at monitoring well MW-3. The average hydraulic conductivity for the site is 4.91x10E-03 cm/sec.
Saturated zone hydraulic gradient	unitless	0.02	3	0.007	All receptors	Based on site data
Saturated zone b parameter	unitless	5.3	7	2	All receptors	Average; based on geomean of measured hydraulic conductivity of bedrock and model manual
Water table drop rate	m/yr	0.001	7	0.87	All receptors	Value derived from natural seasonal variation and not due to pumping; seasonal low in November subtracted from seasonal high in March.
Well pump intake depth (m below water table)	m	10	5	Use default	All receptors	No site-specific pumping information available; assuming default.

TABLE 6-4
RECEPTOR-SPECIFIC AND SCENARIO-SPECIFIC RESRAD PARAMETER VALUES
REMEDIAL INVESTIGATION FORMER GUTERL SPECIALTY STEEL CORPORATION FUSRAP SITE

RESRAD Parameter	Units	RESRAD Default	Risk Variability[a]	Proposed Values[b]	Receptor or Scenario	Comment/Reference
Model: Nondispersion (ND)	unitless	ND		Site-specific	All receptors	See Manual Appendix E
Well pumping rate	m^3/yr	250	4	Use default	All receptors	No site-specific pumping information available; assuming default.
Number of unsaturated zone strata[d]	unitless	1	-	1	All receptors	Combined native soil and fill; assume all properties similar for both soil types
Unsaturated zone thickness	m	4.0	4	0.3	All receptors	Approximate average thickness based on RI boring data.
Unsaturated zone soil density	g/cm^3	1.5	7	1.31	All receptors	Based on combining averages for each area
Unsaturated zone total porosity	unitless	0.4	7	0.3	All receptors	Geotech evaluation based on soil moisture of 15% for tills
Unsaturated zone effective porosity	unitless	0.2	7	0.15	Resident, construction worker	Geotech evaluation based on soil properties; on-site worker and juvenile trespasser have drinking water pathway supressed, therefore not applicable.
Unsatuated zone field capacity	unitless	0.2	7	0.15	All receptors	Based on available water content of about 15%
Unsaturated zone b parameter	unitless	5	7	7.3	All receptors	Average; based on manual and low hydraulic conductivity of till and silty clay soil type
Unsaturated zone hydraulic conductivity	m/yr	10	7	3.15	All receptors	Based on lab tests and geotech evaluation of expected value
Distribution coefficients	cm^3/g	-[e]	4	Site-specific[f]	All receptors	Radionuclide-specific; impacts all pathways, not just groundwater
Inhalation rate	m^3/yr	8,400	6	Site-specific	All receptors	Average over entire 365-day year; default equivalent to 0.9589 m^3/hr
				5,548	Resident adult	Assuming adult male rate of 15.2 m^3/day (EFH, Table 1-2)
				2,765	Resident child	Assuming 1-5 year old rate of 7.55 m^3/day (EFH, Table 5-23)
				4,991	Adult/child Resident	Age-averaged exposure assuming 24 years as adult + 6 years as child.
				7,300	On-site worker	Assuming RAGS default rate of 20 m^3/day for workers
				7,300	Construction worker	Assuming RAGS default rate of 20 m^3/day for workers; differs from the RESRAD Build inhalation due to the different activities between the two construction workers; RESRAD Build construction worker is a renovation/demolition scenario
				5,110	Juvenile Trespasser	Avg. for 7-16 year old male of 14 m^3/day (EFH, Table 5-23)
Mass loading for inhalation	g/m^3	0.0001	5	Use default	Non-construction	RESRAD default used
				6.00E-04	Construction	DCH Section 35
Exposure duration	yr	30	7	Site-specific	All receptors	Same as ED in standard RAGS equations
				30	Resident adult	Duration for resident (EFH, RAGS)
				6	Resident child	Assuming 6 years of childhood spent at site
				25	On-site worker	Duration for occupational receptor (EFH, RAGS)
				1	Construction worker	Assuming construction activities during one calendar year
				10	Juvenile Trespasser	Assumed for off-site adolescent receptor through ages 7-16
Shielding factor, inhalation	unitless	0.4	6	Use default	All receptors	Fraction of outdoor air that is filtered/diluted; 1.0 = no filtering/dilution; RESRAD default used
Shielding factor, external gamma	unitless	0.7	4	Use default	All receptors	Fraction of outdoor gamma that is shielded; 1.0 = no shielding; RESRAD default used
				0.4	Building occupant	SSG Section 2; 60% shielding for all indoor receptors
Fraction of time spent indoors	unitless	0.5	5	Site-specific	All receptors	Fraction of 8,760 hours spent indoors on-site
				0.655	Resident adult	16.4 hr/day for 350 days/yr for resident (EFH, Table 1-2)
				0.655	Resident child	16.4 hr/day for 350 days/yr for resident (EFH, Table 1-2)
				0.20	On-site worker	7 of 8 hours per day for 250 days per year (assumed)
				0.0	All other receptors	No indoor exposure
Fraction of time spent outdoors (on site)	unitless	0.25	5	Site-specific	All receptors	Fraction of 8,760 hours spent outdoors on-site
				0.0799	Resident adult	2 hrs/day for 350 days/yr for resident (EFH, Table 1-2)
				0.223	Resident child	5 hrs/day on weekdays or 7 hrs/day on weekends for 350 days per year for children
						ages 1-11 (EFH, Table 1-2)
				0.0285	On-site worker	1 of 8 hrs/day for 250 days/yr (assumed)
				0.228	Construction worker	Assumes one full work-year for a supervisor-type worker
				0.011	Juvenile Trespasser	Assumes 4 hr/wk averaged over 24 wks/yr (1 day/week for 6 months).
Shape factor flag, external gamma	unitless	1.0	-	Use default	All receptors	Default = uniform circular
Fruits, vegetables and grain consumption	kg/yr	160	2	Use default	Gardening	RESRAD default used

TABLE 6-4
RECEPTOR-SPECIFIC AND SCENARIO-SPECIFIC RESRAD PARAMETER VALUES
REMEDIAL INVESTIGATION FORMER GUTERL SPECIALTY STEEL CORPORATION FUSRAP SITE

RESRAD Parameter	Units	RESRAD Default	Risk Variability[a]	Proposed Values[b]	Receptor or Scenario	Comment/Reference
				469	Resident adult	22.4 g/kg-day (12.4 for fruit and 10 for vegetables) minus leafy vegetable rate for 60
						kg adult; 60 kg used because intake rate data includes child data (EFH, Table 1-2)
				118	Resident child	22.4 g/kg-day (12.4 for fruit and 10 for vegetables) minus leafy vegetable rate for 15
						kg child (EFH, Table 1-2)
				N/C	All other receptors	Not used
Leafy vegetable consumption	kg/yr	14	5	Site-specific	Gardening	Average over entire 365-day year; (EFH Volume III)
				21.4	Resident adult	NUREG/CR-5512 Volume 4 default for resident farmer
				4.59	Resident child	Adult value scaled by child-to-adult body weight factor
				N/C	All other receptors	Not used
Soil ingestion rate	g/yr	36.5	4	Site-specific	All receptors	Average over entire 365-day year; default equivalent to 100 mg/day
				36.5	Resident adult	100 mg/day for residential adult (RAGS)
				73.0	Resident child	200 mg/day for residential child (RAGS)
				43.8	Adult/child Resident	Age-averaged exposure assuming 24 years as adult + 6 years as child.
				18.25	On-site worker	50 mg/day for industrial worker rate (RAGS)
				120.5	Construction worker	330 mg/day for assuming outdoor summer activities (EPA 2002, Exhibit 5-2)
				54.75	Juvenile Trespasser	150 mg/day assuming average of adult and child rates (RAGS)
Drinking water intake	L/yr	510	3	Site-specific	All receptors	Average over entire 365-day year; default equivalent to 1.397 L/day
				869	Resident adult	34 ml/kg-day for 70 kg adult (EFH, Table 1-2)
				186	Resident child	34 ml/kg-day for 15 kg child (EFH, Table 1-2)
				73	Construction worker	Based on an assumed incidental ingestion rate of 0.2 L/day
				N/C	All other receptors	Typically limited to above residential or farming scenarios
Contamination fraction of drinking water	unitless	1.0	-	1.0	All receptors	Typically set to 1.0; Manual Appendix E
Contamination fraction of irrigation water	unitless	1.0	-	1.0	Gardening	Assumes that home gardens are irrigated
Contamination fraction of plant food	unitless	-1[g]	-	0.05	Gardening	Typical for small suburban garden.
Mass loading for foliar deposition	g/m^3	0.0001	7	0.0001	Gardening	Used Manual Appendix E
Depth of soil mixing layer	m	0.15	5	0.15	All receptors	Relevant when contaminated thickness < 0. 15 m or cover thickness < 15 cm (original cover can erode to < 15 cm); default assumes tilling
Depth of roots	m	0.9	3	Use default	Gardening	RESRAD default used
Drinking water fraction from ground water	unitless	1.0	-	1.0	All receptors	Default assume 0% from surface water; set to 0.0 for 100% from surface water
Household water fraction from ground water	unitless	1.0	-	1.0	Resident only	Default assume 0% from surface water; set to 0.0 for 100% from surface water
Irrigation fraction from ground water	unitless	1.0	-	1.0	Gardening	Assumes that home gardens are not irrigated.
Wet weight crop yield for non-leafy	kg/m^2	0.7	5	Use default	Gardening	RESRAD default used
Wet weight crop yield for leafy	kg/m^2	1.5	7	Use default	Gardening	RESRAD default used
Wet weight crop yield for fodder	kg/m^2	1.1	7	Not Used	Gardening	Not used
Growing season for non-leafy	years	0.17	7	Use default	Gardening	RESRAD default used
Growing season for leafy	years	0.25	7	Use default	Gardening	RESRAD default used
Growing season for fodder	years	0.08	7	Not Used	Gardening	Not used
Translocation factor for non-leafy	unitless	0.1	7	Use default	Gardening	RESRAD default used
Translocation factor for leafy	unitless	1.0	7	Use default	Gardening	RESRAD default used
Translocation factor for fodder	unitless	0.1	7	Not Used	Gardening	Not used
Dry foliar interception fraction for non-leafy	unitless	0.25	7	Use default	Gardening	RESRAD default used
Dry foliar interception fraction for leafy	unitless	0.25	7	Use default	Gardening	RESRAD default used

TABLE 6-4
RECEPTOR-SPECIFIC AND SCENARIO-SPECIFIC RESRAD PARAMETER VALUES
REMEDIAL INVESTIGATION FORMER GUTERL SPECIALTY STEEL CORPORATION FUSRAP SITE

RESRAD Parameter	Units	RESRAD Default	Risk Variability[a]	Proposed Values[b]	Receptor or Scenario	Comment/Reference
Dry foliar interception fraction for fodder	unitless	0.25	7	Not Used	Gardening	Not used
Wet foliar interception fraction for leafy	unitless	0.25	7	Use default	Gardening	RESRAD default used
Wet foliar interception fraction for non-leafy	unitless	0.25	6	Use default	Gardening	RESRAD default used
Wet foliar interception fraction for fodder	unitless	0.25	7	Not Used	Gardening	Not used
Weathering removal constant for vegetation	1/yr	20	6	Use default	Gardening	RESRAD default used
Storage time: fruits, non-leafy vegetables, and grain	days	14	7	Use default	Gardening	RESRAD default used
Storage time: leafy vegetables	days	1.0	7	Use default	Gardening	RESRAD default used
Storage time: well water	days	1.0	7	Use default	Gardening	RESRAD default used
Storage time: surface water	days	1.0	7	Use default	Gardening	RESRAD default used
Pathway - external gamma	unitless	active	-	Active	All receptors	See Manual Appendix A
Pathway - inhalation (w/o radon)	unitless	active	-	Active	All receptors	See Manual Appendix B
Pathway - plant ingestion	unitless	active	-	Active	Gardening	See Manual Appendix D
				Inactive	All other receptors	Typically active for resident or subsistence farmer only
Pathway - drinking water	unitless	active	-	Active	Resident	See Manual Appendix E
				Inactive	All other receptors	Typically active for resident or subsistence farmer only
Pathway - soil ingestion	unitless	active	-	Active	All receptors	See Manual Appendix F

[a] From NUREG/CR-6697 Table 4.1; represents variability of radiological dose (same relationship with risk assumed) on parameter ranging from 1 (extremely sensitive) to 7 (insensitive). Dash (-) shown if no values listed in NUREG/CR-6697.

[b] Site-specific information/data (either physical, behavioral or metabolic) should be used whenever available. For this table, general information is provided in the Comment/Reference column when the Proposed Values is "site-specific."

[c] From Olhoeft, G.R. and Johnson, G.R., 1989. Densities of rocks and minerals. In: Carmichael, R.S., ed., Practical Handbook of Physical Properties of rocks and Minerals. CRC Press, Boca Raton, p. 141-176, as cited in: Dorsch, J. 1997. Effective Porosity and Density of Carbonate Rocks (Maynardvile Limestone and Copper Ridge Dolomite) within Bear Creek Valley on the Oak Ridge Reservation Based on Modern Petrophysical Techniques. ORNL/GWPO-026, Figure 5.

[d] The unsaturated zone may contain as many as four layers, including fill, reworked fill and native soil, reworked native soil, and native soil.

[e] Radionuclide-specific and can be soil-type-specific. See RESRAD support documentation for potential defaults.

[f] Values based on laboratory results. The value to use will depend on the modeled path.
(1) For unsaturated zone flow in native, uncontaminated soil, 70 mL/gm will be used.
(2) For unsaturated zone flow in contaminated soil/fill, 38.53 mL/gm (average of three samples) will be used.
(3) For saturated flow (bedrock), 0.22 mL/gm will be used.

[g] Adjusted automatically by RESRAD based on the contaminated surface area.

DCH = *Data Collection Handbook to Support Modeling the Impacts of Radioactive Material in Soil*(ANL 1993)
EFH = *Exposure Factors Handbook* (EPA 1997)
EPA 2002 = *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites* . USEPA-OSWER 9355.4-24, December 2002.
Manual = *User's Manual for RESRAD Version 6* (ANL 2001)
N/C = not considered
RAGS = *Risk Assessment Guidance for Superfund* (EPA 1989)
SSG = *Soil Screening Guidance for Radionuclides: Technical Background Document (EPA 2000)*

avg = average
cm = centimeters
cm/sec = centimeters per second
cm^3/g = cubit centimeters per gram
days/yr = days per year
ED = exposure duration
EU = exposure unit
g/cm^3 = grams per cubic centimeter
g/kg-day = grams per kilogram per day
g/m^3 = grams per cubic meter
g/yr - grams per year
hr/day = hours per day
hr/wk = hours per week
kg = kilogram
kg/m^2 = kilograms per square meter
kg/yr = kilograms per year
L/day - liters per day
L/yr - liters per year
m = meters
m/sec = meters per second
m/yr = meters per year
m^2 = square meters
m^3/day = cubic meters per day
m^3/hr = cubic meters per hour
m^3/yr = cubic meters per year
mg/L = milligrams per liter
mL/g = mililiters per gram
mL/kg-day = milliliters per kilogram per day
NE = northeast
RI = remedial investigation
w/o = without
wk/yr = weeks per year
yr = year

TABLE 6-13
SELECTED CARCINOGENIC RISKS, RADIATION DOSES, AND HAZARD INDICES BY EU
REMEDIAL INVESTIGATION FORMER GUTERL SPECIALTY STEEL CORPORATION FUSRAP SITE

Scenario	Time (years)	Gross EPC Total Dose (mrem/yr)	Background Total Dose (mrem/yr)	Net EPC Total Dose (mrem/yr)	Gross Groundwater Dose	Background Groundwater Dose	Net Groundwater Dose	Gross Surface Water Dose	Background Surface Water Dose	Net Surface Water Dose	Gross Building Surface Dose	Background Building Surface Dose	Net Building Surface Dose	Gross Sediment Dose	Background Sediment Dose	Net Sediment Dose	Gross Soil Dose	Background Soil Dose	Net Soil Dose	Gross EPC Total Risk	Background Total Risk	Net EPC Total Risk	Gross Groundwater Risk	Background Groundwater Risk	Net Groundwater Risk	Gross Surface Water Risk	Background Surface Water Risk	Net Surface Water Risk	Gross Building Surface Risk	Background Building Surface Risk	Net Building Surface Risk	Gross Sediment Risk	Background Sediment Risk	Net Sediment Risk	Gross Soil Risk	Background Soil Risk	Net Soil Risk	Gross EPC Hazard Index	Background Hazard Index	Net EPC Hazard Index
Exposure Unit 1																																								
Juvenile Trespasser	0	0.10	0.008	0.10	--	--	--	1.92E-02	1.24E-03	1.80E-02	4.85E-02	0.00E+00	4.85E-02	3.65E-02	6.83E-03	3.06E-02	--	--	--	3E-07	5E-08	3E-07	--	--	--	5.78E-08	5.95E-09	5.20E-08	1.32E-08	0.00E+00	1.32E-08	2.50E-07	4.04E-08	2.11E-07	--	--	--	**4E-03**	4E-05	4E-03
On-site Worker	0	12	0.042	12	--	--	--	1.00E-01	6.44E-03	9.39E-02	1.16E+01	0.00E+00	1.16E+01	1.90E-01	3.56E-02	1.59E-01	--	--	--	7E-06	6E-07	7E-06	--	--	--	7.53E-07	7.74E-08	6.77E-07	3.14E-06	0.00E+00	3.14E-06	3.25E-06	5.26E-07	2.74E-06	--	--	--	**2E-02**	**2E-04**	2E-02
Construction Worker	0	**591**	0.042	**591**	--	--	--	1.00E-01	6.44E-03	9.39E-02	**5.91E+02**	0.00E+00	**5.91E+02**	1.90E-01	3.56E-02	1.59E-01	--	--	--	5E-05	2E-08	5E-05	--	--	--	3.01E-08	3.10E-09	2.71E-08	5.37E-05	0.00E+00	5.37E-05	1.30E-07	2.10E-08	1.10E-07	--	--	--	**2E-02**	**7E-03**	2E-02
Exposure Unit 1																																							
Juvenile Trespasser	1	0.048	0	0.048	--	--	--	NC	NC	NC	4.79E-02	0.00E+00	4.79E-02	NC	NC	NC	--	--	--	1E-08	0E+00	1E-08	--	--	--	NC	NC	NC	1.26E-08	0.00E+00	1.26E-08	NC	NC	NC	--	--	--	NC	NC	NC
On-site Worker	1	12	0	12	--	--	--	NC	NC	NC	1.15E+01	0.00E+00	1.15E+01	NC	NC	NC	--	--	--	3E-06	0E+00	3E-06	--	--	--	NC	NC	NC	3.01E-06	0.00E+00	3.01E-06	NC	NC	NC	--	--	--	NC	NC	NC
Construction Worker	1	**591**	0	**591**	--	--	--	NC	NC	NC	**5.91E+02**	0.00E+00	**5.91E+02**	NC	NC	NC	--	--	--	5E-05	0E+00	5E-05	--	--	--	NC	NC	NC	5.32E-05	0.00E+00	5.32E-05	NC	NC	NC	--	--	--	NC	NC	NC
Exposure Unit 1																																							
Juvenile Trespasser	10	0.042	0.000	0.042	--	--	--	NC	NC	NC	4.21E-02	0.00E+00	4.21E-02	NC	NC	NC	--	--	--	9E-09	0E+00	9E-09	--	--	--	NC	NC	NC	9.09E-09	0.00E+00	9.09E-09	NC	NC	NC	--	--	--	NC	NC	NC
On-site Worker	10	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC
Construction Worker	10	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC
Exposure Unit 1																																							
Juvenile Trespasser	25	0.032	0.000	0.032	--	--	--	NC	NC	NC	3.25E-02	0.00E+00	3.25E-02	NC	NC	NC	--	--	--	3E-09	0E+00	3E-09	--	--	--	NC	NC	NC	3.42E-09	0.00E+00	3.42E-09	NC	NC	NC	--	--	--	NC	NC	NC
On-site Worker	25	8.6	0.0	8.6	--	--	--	NC	NC	NC	8.60E+00	0.00E+00	8.60E+00	NC	NC	NC	--	--	--	1E-06	0E+00	1E-06	--	--	--	NC	NC	NC	1.02E-06	0.00E+00	1.02E-06	NC	NC	NC	--	--	--	NC	NC	NC
Construction Worker	25	0.00	0.00	0.00	--	--	--	NC	NC	NC	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	--	--	--	0E+00	0E+00	0E+00	--	--	--	NC	NC	NC	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	--	--	--	NC	NC	NC
Exposure Unit 2																																							
Juvenile Trespasser	0	0.77	0.29	0.48	--	--	--	7.61E-02	1.24E-03	7.49E-02	2.94E-02	0.00E+00	2.94E-02	1.38E-02	6.83E-03	7.00E-03	6.53E-01	2.80E-01	3.72E-01	5E-06	2E-06	3E-06	--	--	--	2.17E-07	5.95E-09	2.11E-07	6.99E-09	0.00E+00	6.99E-09	8.43E-08	4.04E-08	4.39E-08	4.81E-06	2.06E-06	2.75E-06	**8E-03**	**2E-04**	8E-03
On-site Worker	0	18	4	14	--	--	--	3.96E-01	6.44E-03	3.90E-01	7.62E+00	0.00E+00	7.62E+00	7.20E-02	3.56E-02	3.64E-02	9.88E+00	4.26E+00	5.62E+00	**2E-04**	8E-05	**1E-04**	--	--	--	2.82E-06	7.74E-08	2.75E-06	1.50E-06	0.00E+00	1.50E-06	1.10E-06	5.26E-07	5.72E-07	**1.75E-04**	7.71E-05	9.78E-05	**3E-02**	**6E-04**	3E-02
Construction Worker	0	**476**	6	**470**	--	--	--	3.96E-01	6.44E-03	3.90E-01	**4.62E+02**	0.00E+00	**4.62E+02**	7.20E-02	3.56E-02	3.64E-02	1.35E+01	5.98E+00	7.47E+00	5E-05	4E-06	5E-05	--	--	--	1.13E-07	3.10E-09	1.10E-07	4.18E-05	0.00E+00	4.18E-05	4.39E-08	2.10E-08	2.29E-08	9.74E-06	4.39E-06	5.35E-06	**8E-02**	**1E-02**	7E-02
Exposure Unit 2																																							
Juvenile Trespasser	1	0.029	0.000	0.029	--	--	--	NC	NC	NC	2.92E-02	0.00E+00	2.92E-02	NC	NC	NC	NC	NC	NC	7E-09	0E+00	7E-09	--	--	--	NC	NC	NC	6.75E-09	0.00E+00	6.75E-09	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	1	7.6	0.0	7.6	--	--	--	NC	NC	NC	7.60E+00	0.00E+00	7.60E+00	NC	NC	NC	NC	NC	NC	1E-06	0E+00	1E-06	--	--	--	NC	NC	NC	1.45E-06	0.00E+00	1.45E-06	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	1	**462**	0	**462**	--	--	--	NC	NC	NC	**4.62E+02**	0.00E+00	**4.62E+02**	NC	NC	NC	NC	NC	NC	4E-05	0E+00	4E-05	--	--	--	NC	NC	NC	4.17E-05	0.00E+00	4.17E-05	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 2																																							
Juvenile Trespasser	10	0.028	0.000	0.028	--	--	--	NC	NC	NC	2.80E-02	0.00E+00	2.80E-02	NC	NC	NC	NC	NC	NC	5E-09	0E+00	5E-09	--	--	--	NC	NC	NC	5.25E-09	0.00E+00	5.25E-09	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	10	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	10	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 2																																							
Juvenile Trespasser	25	0.026	0.000	0.026	--	--	--	NC	NC	NC	2.60E-02	0.00E+00	2.60E-02	NC	NC	NC	NC	NC	NC	3E-09	0E+00	3E-09	--	--	--	NC	NC	NC	2.85E-09	0.00E+00	2.85E-09	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	25	7.0	0.0	7.0	--	--	--	NC	NC	NC	6.98E+00	0.00E+00	6.98E+00	NC	NC	NC	NC	NC	NC	7E-07	0E+00	7E-07	--	--	--	NC	NC	NC	7.16E-07	0.00E+00	7.16E-07	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	25	0.00	0.00	0.00	--	--	--	NC	NC	NC	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	0E+00	0E+00	0E+00	--	--	--	NC	NC	NC	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 2																																							
Juvenile Trespasser	58	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	58	25	6	19	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	2.47E+01	6.14E+00	1.85E+01	1E-05	4E-06	8E-06	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	1.19E-05	4.11E-06	7.77E-06	NC	NC	NC
Exposure Unit 2																																							
Juvenile Trespasser	1000	0.30	0.15	0.15	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	3.03E-01	1.51E-01	1.51E-01	2E-06	1E-06	1E-06	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	2.28E-06	1.14E-06	1.14E-06	NC	NC	NC
On-site Worker	1000	4.6	2.3	2.3	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	4.58E+00	2.29E+00	2.29E+00	9E-05	4E-05	4E-05	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	8.64E-05	4.31E-05	4.32E-05	NC	NC	NC
Construction Worker	1000	6.3	3.4	2.9	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	6.31E+00	3.41E+00	2.89E+00	4E-06	2E-06	2E-06	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	4.50E-06	2.45E-06	2.04E-06	NC	NC	NC
Exposure Unit 3																																							
Juvenile Trespasser	0	1.11	0.29	0.82	--	--	--	1.26E-02	1.24E-03	1.14E-02	6.28E-01	0.00E+00	6.28E-01	4.90E-02	6.83E-03	4.22E-02	4.24E-01	2.80E-01	1.43E-01	4E-06	2E-06	2E-06	--	--	--	3.83E-08	5.95E-09	3.28E-08	3.81E-07	0.00E+00	3.81E-07	3.24E-07	4.04E-08	2.84E-07	3.02E-06	2.06E-06	9.58E-07	**8E-03**	**2E-04**	7E-03
On-site Worker	0	**124**	4	**120**	--	--	--	6.55E-02	6.44E-03	5.96E-02	**1.18E+02**	0.00E+00	**1.18E+02**	2.55E-01	3.56E-02	2.20E-01	6.38E+00	4.26E+00	2.12E+00	**2E-04**	8E-05	**1E-04**	--	--	--	4.99E-07	7.74E-08	4.27E-07	7.09E-05	0.00E+00	7.09E-05	4.22E-06	5.26E-07	3.69E-06	**1.12E-04**	7.71E-05	3.48E-05	**3E-02**	**6E-04**	3E-02
Construction Worker	0	**62**	6	**55**	--	--	--	6.55E-02	6.44E-03	5.96E-02	**4.54E+01**	0.00E+00	**4.54E+01**	2.55E-01	3.56E-02	2.20E-01	1.58E+01	5.98E+00	9.78E+00	2E-05	4E-06	1E-05	--	--	--	2.00E-08	3.10E-09	1.71E-08	5.10E-06	0.00E+00	5.10E-06	1.69E-07	2.10E-08	1.48E-07	1.01E-05	4.39E-06	5.71E-06	**3E-01**	**1E-02**	3E-01
Exposure Unit 3																																							
Juvenile Trespasser	1	0.61	0.00	0.61	--	--	--	NC	NC	NC	6.05E-01	0.00E+00	6.05E-01	NC	NC	NC	NC	NC	NC	4E-07	0E+00	4E-07	--	--	--	NC	NC	NC	3.60E-07	0.00E+00	3.60E-07	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	1	**113**	0	**113**	--	--	--	NC	NC	NC	**1.13E+02**	0.00E+00	**1.13E+02**	NC	NC	NC	NC	NC	NC	7E-05	0E+00	7E-05	--	--	--	NC	NC	NC	6.73E-05	0.00E+00	6.73E-05	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	1	**45**	0	**45**	--	--	--	NC	NC	NC	**4.54E+01**	0.00E+00	**4.54E+01**	NC	NC	NC	NC	NC	NC	5E-06	0E+00	5E-06	--	--	--	NC	NC	NC	4.75E-06	0.00E+00	4.75E-06	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 3																																							
Juvenile Trespasser	10	0.40	0.00	0.40	--	--	--	NC	NC	NC	3.99E-01	0.00E+00	3.99E-01	NC	NC	NC	NC	NC	NC	2E-07	0E+00	2E-07	--	--	--	NC	NC	NC	2.36E-07	0.00E+00	2.36E-07	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	10	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	10	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 3																																							
Juvenile Trespasser	25	0.056	0.000	0.056	--	--	--	NC	NC	NC	5.64E-02	0.00E+00	5.64E-02	NC	NC	NC	NC	NC	NC	3E-08	0E+00	3E-08	--	--	--	NC	NC	NC	3.29E-08	0.00E+00	3.29E-08	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	25	9.5	0.0	9.5	--	--	--	NC	NC	NC	9.53E+00	0.00E+00	9.53E+00	NC	NC	NC	NC	NC	NC	5E-06	0E+00	5E-06	--	--	--	NC	NC	NC	5.45E-06	0.00E+00	5.45E-06	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	25	0.00	0.00	0.00	--	--	--	NC	NC	NC	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	0E+00	0E+00	0E+00	--	--	--	NC	NC	NC	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 3																																							
Juvenile Trespasser	58	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	58	**111**	6	**105**	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	**1.11E+02**	6.14E+00	**1.05E+02**	4E-05	4E-06	3E-05	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	3.62E-05	4.11E-06	3.21E-05	NC	NC	NC
Exposure Unit 3																																							
Juvenile Trespasser	1000	0.190	0.151	0.039	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	1.90E-01	1.51E-01	3.92E-02	1E-06	1E-06	3E-07	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	1.43E-06	1.14E-06	2.94E-07	NC	NC	NC
On-site Worker	1000	2.88	2.29	0.59	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	2.88E+00	2.29E+00	5.92E-01	5E-05	4E-05	1E-05	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	5.43E-05	4.31E-05	1.12E-05	NC	NC	NC
Construction Worker	1000	5.2	3.4	1.7	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	5.16E+00	3.41E+00	1.75E+00	3E-06	2E-06	9E-07	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	3.40E-06	2.45E-06	9.49E-07	NC	NC	NC
Exposure Unit 4																																							
Juvenile Trespasser	0	0.60	0.29	0.31	--	--	--	5.92E-03	1.24E-03	4.77E-03	1.45E-01	0.00E+00	1.45E-01	1.47E-02	6.83E-03	1.10E-02	4.30E-01	2.80E-01	1.50E-01	3E-06	2E-06	1E-06	--	--	--	2.19E-08	5.95E-09	1.63E-08	8.82E-08	0.00E+00	8.82E-08	1.02E-07	4.04E-08	7.41E-08	3.14E-06	2.06E-06	1.08E-06	**3E-03**	**2E-04**	3E-03
On-site Worker	0	**34**	4	**30**	--	--	--	3.08E-02	6.44E-03	2.49E-02	**2.73E+01**	0.00E+00	**2.73E+01**	7.65E-02	3.56E-02	5.73E-02	6.51E+00	4.26E+00	2.26E+00	**1E-04**	8E-05	6E-05	--	--	--	2.85E-07	7.74E-08	2.12E-07	1.64E-05	0.00E+00	1.64E-05	1.33E-06	5.26E-07	9.64E-07	**1.18E-04**	7.71E-05	4.13E-05	**1E-02**	**6E-04**	1E-02
Construction Worker	0	20	6	14	--	--	--	3.08E-02	6.44E-03	2.49E-02	1.04E+01	0.00E+00	1.04E+01	7.65E-02	3.56E-02	5.73E-02	9.14E+00	5.98E+00	3.15E+00	8E-06	4E-06	3E-06	--	--	--	1.14E-08	3.10E-09	8.50E-09	1.20E-06	0.00E+00	1.20E-06	5.33E-08	2.10E-08	3.86E-08	6.59E-06	4.39E-06	2.20E-06	**4E-02**	**1E-02**	3E-02
Exposure Unit 4																																							
Juvenile Trespasser	1	0.14	0.00	0.14	--	--	--	NC	NC	NC	1.40E-01	0.00E+00	1.40E-01	NC	NC	NC	NC	NC	NC	8E-08	0E+00	8E-08	--	--	--	NC	NC	NC	8.36E-08	0.00E+00	8.36E-08	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	1	**26**	0	**26**	--	--	--	NC	NC	NC	**2.62E+01**	0.00E+00	**2.62E+01**	NC	NC	NC	NC	NC	NC	2E-05	0E+00	2E-05	--	--	--	NC	NC	NC	1.56E-05	0.00E+00	1.56E-05	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	1	10	0	10	--	--	--	NC	NC	NC	1.04E+01	0.00E+00	1.04E+01	NC	NC	NC	NC	NC	NC	1E-06	0E+00	1E-06	--	--	--	NC	NC	NC	1.13E-06	0.00E+00	1.13E-06	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 4																																							
Juvenile Trespasser	10	0.092	0.000	0.092	--	--	--	NC	NC	NC	9.23E-02	0.00E+00	9.23E-02	NC	NC	NC	NC	NC	NC	5E-08	0E+00	5E-08	--	--	--	NC	NC	NC	5.47E-08	0.00E+00	5.47E-08	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	10	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	10	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 4																																							
Juvenile Trespasser	25	0.013	0.000	0.013	--	--	--	NC	NC	NC	1.31E-02	0.00E+00	1.31E-02	NC	NC	NC	NC	NC	NC	8E-09	0E+00	8E-09	--	--	--	NC	NC	NC	7.62E-09	0.00E+00	7.62E-09	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	25	2.2	0.0	2.2	--	--	--	NC	NC	NC	2.21E+00	0.00E+00	2.21E+00	NC	NC	NC	NC	NC	NC	1E-06	0E+00	1E-06	--	--	--	NC	NC	NC	1.26E-06	0.00E+00	1.26E-06	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	25	0.00	0.00	0.00	--	--	--	NC	NC	NC	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	0E+00	0E+00	0E+00	--	--	--	NC	NC	NC	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 4																																							
Juvenile Trespasser	58	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	58	17	6	11	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	1.72E+01	6.14E+00	1.11E+01	8E-06	4E-06	4E-06	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	8.42E-06	4.11E-06	4.31E-06	NC	NC	NC
Exposure Unit 4																																							
Juvenile Trespasser	1000	0.212	0.151	0.061	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	2.12E-01	1.51E-01	6.12E-02	2E-06	1E-06	5E-07	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	1.60E-06	1.14E-06	4.60E-07	NC	NC	NC
On-site Worker	1000	3.21	2.29	0.93	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	3.21E+00	2.29E+00	9.26E-01	6E-05	4E-05	2E-05	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	6.06E-05	4.31E-05	1.75E-05	NC	NC	NC
Construction Worker	1000	4.7	3.4	1.3	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	4.75E+00	3.41E+00	1.34E+00	3E-06	2E-06	9E-07	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	3.38E-06	2.45E-06	9.34E-07	NC	NC	NC
Exposure Unit 5																																							
Juvenile Trespasser	0	0.015	0.000	0.015	--	--	--	--	--	--	1.52E-02	0.00E+00	1.52E-02	--	--	--	--	--	--	9E-09	0E+00	9E-09	--	--	--	--	--	--	8.58E-09	0.00E+00	8.58E-09	--	--	--	--	--	--	5E-09	2E-08	0E+00
On-site Worker	0	3.0	0.0	3.0	--	--	--	--	--	--	2.96E+00	0.00E+00	2.96E+00	--	--	--	--	--	--	2E-06	0E+00	2E-06	--	--	--	--	--	--	1.61E-06	0.00E+00	1.61E-06	--	--	--	--	--	--	1E-07	4E-07	0E+00
Construction Worker	0	25	0	25	--	--	--	--	--	--	2.45E+01	0.00E+00	2.45E+01	--	--	--	--	--	--	3E-06	0E+00	3E-06	--	--	--	--	--	--	2.71E-06	0.00E+00	2.71E-06	--	--	--	--	--	--	**2E-03**	**7E-03**	0E+00
Exposure Unit 5																																							
Juvenile Trespasser	1	0.015	0.000	0.015	--	--	--	--	--	--	1.47E-02	0.00E+00	1.47E-02	--	--	--	--	--	--	8E-09	0E+00	8E-09	--	--	--	--	--	--	8.11E-09	0.00E+00	8.11E-09	--	--	--	--	--	--	NC	NC	NC
On-site Worker	1	2.9	0.0	2.9	--	--	--	--	--	--	2.87E+00	0.00E+00	2.87E+00	--	--	--	--	--	--	2E-06	0E+00	2E-06	--	--	--	--	--	--	1.52E-06	0.00E+00	1.52E-06	--	--	--	--	--	--	NC	NC	NC
Construction Worker	1	25	0	25	--	--	--	--	--	--	2.45E+01	0.00E+00	2.45E+01	--	--	--	--	--	--	2E-06	0E+00	2E-06	--	--	--	--	--	--	2.47E-06	0.00E+00	2.47E-06	--	--	--	--	--	--	NC	NC	NC
Exposure Unit 5

TABLE 6-13
SELECTED CARCINOGENIC RISKS, RADIATION DOSES, AND HAZARD INDICES BY EU
REMEDIAL INVESTIGATION FORMER GUTERL SPECIALTY STEEL CORPORATION FUSRAP SITE

Scenario	Time (years)	Gross EPC Total Dose (mrem/yr)	Background Total Dose (mrem/yr)	Net EPC Total Dose (mrem/yr)	Gross Groundwater Dose	Background Groundwater Dose	Net Groundwater Dose	Gross Surface Water Dose	Background Surface Water Dose	Net Surface Water Dose	Gross Building Surface Dose	Background Building Surface Dose	Net Building Surface Dose	Gross Sediment Dose	Background Sediment Dose	Net Sediment Dose	Gross Soil Dose	Background Soil Dose	Net Soil Dose	Gross EPC Total Risk	Background Total Risk	Net EPC Total Risk	Gross Groundwater Risk	Background Groundwater Risk	Net Groundwater Risk	Gross Surface Water Risk	Background Surface Water Risk	Net Surface Water Risk	Gross Building Surface Risk	Background Building Surface Risk	Net Building Surface Risk	Gross Sediment Risk	Background Sediment Risk	Net Sediment Risk	Gross Soil Risk	Background Soil Risk	Net Soil Risk	Gross EPC Hazard Index	Background Hazard Index	Net EPC Hazard Index
Exposure Unit 6																																								
Juvenile Trespasser	0	4.2	0.3	3.8	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	4.61E-02	6.83E-03	3.98E-02	4.16E+00	2.80E-01	3.79E+00	3E-05	2E-06	3E-05	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	2.94E-07	4.04E-08	2.56E-07	2.98E-05	2.06E-06	2.70E-05	**1E-02**	**2E-04**	1E-02
On-site Worker	0	**63**	4	**58**	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	2.40E-01	3.56E-02	2.07E-01	**6.30E+01**	4.26E+00	**5.73E+01**	**1E-03**	8E-05	**1E-03**	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	3.83E-06	5.26E-07	3.34E-06	**1.16E-03**	7.71E-05	**1.06E-03**	**5E-02**	**6E-04**	4E-02
Construction Worker	0	**90**	6	**84**	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	2.40E-01	3.56E-02	2.07E-01	**9.02E+01**	5.98E+00	**8.42E+01**	7E-05	4E-06	6E-05	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	1.53E-07	2.10E-08	1.34E-07	6.57E-05	4.39E-06	6.13E-05	**2E-01**	**1E-02**	2E-01
Exposure Unit 6																																							
Juvenile Trespasser	1	0.00	0.00	0.00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	0E+00	0E+00	0E+00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	1	0.00	0.00	0.00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	0E+00	0E+00	0E+00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	1	0.00	0.00	0.00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	0E+00	0E+00	0E+00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 6																																							
Juvenile Trespasser	10	0.00	0.00	0.00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	0E+00	0E+00	0E+00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	10	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	10	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 6																																							
Juvenile Trespasser	25	0.00	0.00	0.00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	0E+00	0E+00	0E+00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	25	0.00	0.00	0.00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	0E+00	0E+00	0E+00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	25	0.00	0.00	0.00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	0E+00	0E+00	0E+00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 6																																							
Juvenile Trespasser	58	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	58	**124**	6	**117**	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	**1.24E+02**	6.14E+00	**1.17E+02**	6E-05	4E-06	6E-05	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	6.22E-05	4.11E-06	5.81E-05	NC	NC	NC
Exposure Unit 6																																							
Juvenile Trespasser	1000	3.7	0.2	3.6	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	3.75E+00	1.51E-01	3.56E+00	3E-05	1E-06	3E-05	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	2.82E-05	1.14E-06	2.68E-05	NC	NC	NC
On-site Worker	1000	**57**	2	**54**	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	**5.68E+01**	2.29E+00	**5.39E+01**	**1E-03**	4E-05	**1E-03**	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	**1.07E-03**	4.31E-05	**1.02E-03**	NC	NC	NC
Construction Worker	1000	**53**	3	**49**	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	**5.25E+01**	3.41E+00	**4.91E+01**	4E-05	2E-06	4E-05	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	3.79E-05	2.45E-06	3.54E-05	NC	NC	NC
Exposure Unit 7																																							
Juvenile Trespasser	0	**48**	0.3	**48**	--	--	--	1.04E-02	1.24E-03	9.35E-03	5.22E-01	0.00E+00	5.22E-01	1.58E-01	6.83E-03	1.52E-01	**4.74E+01**	2.80E-01	**4.71E+01**	**3E-04**	2E-06	**3E-04**	--	--	--	3.49E-08	5.95E-09	2.95E-08	3.16E-07	0.00E+00	3.16E-07	1.03E-06	4.04E-08	9.97E-07	**3.21E-04**	2.06E-06	**3.19E-04**	**3E+00**	**2E-04**	**3E+00**
On-site Worker	0	**769**	4	**765**	--	--	--	5.40E-02	6.44E-03	4.87E-02	**9.79E+01**	0.00E+00	**9.79E+01**	8.23E-01	3.56E-02	7.90E-01	**6.71E+02**	4.26E+00	**6.66E+02**	**1E-02**	8E-05	**1E-02**	--	--	--	4.54E-07	7.74E-08	3.84E-07	5.87E-05	0.00E+00	5.87E-05	1.35E-05	5.26E-07	1.30E-05	**1.07E-02**	7.71E-05	**1.07E-02**	**9E+00**	**6E-04**	**9E+00**
Construction Worker	0	**562**	6	**556**	--	--	--	5.40E-02	6.44E-03	4.87E-02	**6.05E+01**	0.00E+00	**6.05E+01**	8.23E-01	3.56E-02	7.90E-01	**5.01E+02**	5.98E+00	**4.95E+02**	**3E-04**	4E-06	**3E-04**	--	--	--	1.82E-08	3.10E-09	1.54E-08	6.90E-06	0.00E+00	6.90E-06	5.39E-07	2.10E-08	5.19E-07	**2.75E-04**	4.39E-06	**2.70E-04**	**2E+01**	**1E-02**	**2E+01**
Exposure Unit 7																																							
Juvenile Trespasser	1	0.50	0.00	0.50	--	--	--	NC	NC	NC	5.02E-01	0.00E+00	5.02E-01	NC	NC	NC	NC	NC	NC	3E-07	0E+00	3E-07	--	--	--	NC	NC	NC	3.00E-07	0.00E+00	3.00E-07	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	1	**94**	0	**94**	--	--	--	NC	NC	NC	**9.44E+01**	0.00E+00	**9.44E+01**	NC	NC	NC	NC	NC	NC	6E-05	0E+00	6E-05	--	--	--	NC	NC	NC	5.58E-05	0.00E+00	5.58E-05	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	1	**60**	0	**60**	--	--	--	NC	NC	NC	**6.05E+01**	0.00E+00	**6.05E+01**	NC	NC	NC	NC	NC	NC	6E-06	0E+00	6E-06	--	--	--	NC	NC	NC	6.45E-06	0.00E+00	6.45E-06	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 7																																							
Juvenile Trespasser	10	0.33	0.00	0.33	--	--	--	NC	NC	NC	3.32E-01	0.00E+00	3.32E-01	NC	NC	NC	NC	NC	NC	2E-07	0E+00	2E-07	--	--	--	NC	NC	NC	1.96E-07	0.00E+00	1.96E-07	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	10	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	10	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 7																																							
Juvenile Trespasser	25	0.048	0.000	0.048	--	--	--	NC	NC	NC	4.82E-02	0.00E+00	4.82E-02	NC	NC	NC	NC	NC	NC	3E-08	0E+00	3E-08	--	--	--	NC	NC	NC	2.75E-08	0.00E+00	2.75E-08	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	25	8.3	0.0	8.3	--	--	--	NC	NC	NC	8.27E+00	0.00E+00	8.27E+00	NC	NC	NC	NC	NC	NC	5E-06	0E+00	5E-06	--	--	--	NC	NC	NC	4.57E-06	0.00E+00	4.57E-06	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	25	0.00	0.00	0.00	--	--	--	NC	NC	NC	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	0E+00	0E+00	0E+00	--	--	--	NC	NC	NC	0.00E+00	0.00E+00	0.00E+00	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 7																																							
Juvenile Trespasser	58	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	58	**6481**	**6481**	**6481**	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	**6.49E+03**	6.14E+00	**6.48E+03**	**2E-03**	4E-06	**2E-03**	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	**1.93E-03**	4.11E-06	**1.93E-03**	NC	NC	NC
Exposure Unit 7																																							
Juvenile Trespasser	1000	0.72	0.72	0.72	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	8.72E-01	1.51E-01	7.21E-01	6E-06	1E-06	5E-06	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	6.46E-06	1.14E-06	5.32E-06	NC	NC	NC
On-site Worker	1000	11	11	11	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	1.31E+01	2.29E+00	1.08E+01	**2E-04**	4E-05	**2E-04**	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	**2.44E-04**	4.31E-05	**2.01E-04**	NC	NC	NC
Construction Worker	1000	**55**	**55**	**55**	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	**5.87E+01**	3.41E+00	**5.53E+01**	2E-05	2E-06	2E-05	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	2.32E-05	2.45E-06	2.08E-05	NC	NC	NC
Exposure Unit 8																																							
Juvenile Trespasser	0	0.43	0.43	0.43	--	--	--	--	--	--	3.40E-01	0.00E+00	3.40E-01	2.67E-02	6.83E-03	1.99E-02	3.53E-01	2.80E-01	7.28E-02	3E-06	2E-06	8E-07	--	--	--	--	--	--	2.06E-07	0.00E+00	2.06E-07	1.65E-07	4.04E-08	1.25E-07	2.56E-06	2.06E-06	4.99E-07	**3E-03**	**2E-04**	3E-03
On-site Worker	0	**65**	**65**	**65**	--	--	--	--	--	--	**6.36E+01**	0.00E+00	**6.36E+01**	1.39E-01	3.56E-02	1.04E-01	5.33E+00	4.26E+00	1.07E+00	**1E-04**	8E-05	6E-05	--	--	--	--	--	--	3.84E-05	0.00E+00	3.84E-05	2.15E-06	5.26E-07	1.63E-06	9.53E-05	7.71E-05	1.82E-05	**1E-02**	**6E-04**	1E-02
Construction Worker	0	19	19	19	--	--	--	--	--	--	1.65E+01	0.00E+00	1.65E+01	1.39E-01	3.56E-02	1.04E-01	8.91E+00	5.98E+00	2.92E+00	1E-05	4E-06	5E-06	--	--	--	--	--	--	3.07E-06	0.00E+00	3.07E-06	8.62E-08	2.10E-08	6.51E-08	6.42E-06	4.39E-06	2.03E-06	**9E+00**	**1E-02**	**9E+00**
Exposure Unit 8																																							
Juvenile Trespasser	1	0.33	0.33	0.33	--	--	--	--	--	--	3.27E-01	0.00E+00	3.27E-01	NC	NC	NC	NC	NC	NC	2E-07	0E+00	2E-07	--	--	--	--	--	--	1.95E-07	0.00E+00	1.95E-07	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	1	**61**	**61**	**61**	--	--	--	--	--	--	**6.13E+01**	0.00E+00	**6.13E+01**	NC	NC	NC	NC	NC	NC	4E-05	0E+00	4E-05	--	--	--	--	--	--	3.64E-05	0.00E+00	3.64E-05	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	1	16	16	16	--	--	--	--	--	--	1.65E+01	0.00E+00	1.65E+01	NC	NC	NC	NC	NC	NC	3E-06	0E+00	3E-06	--	--	--	--	--	--	2.86E-06	0.00E+00	2.86E-06	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 8																																							
Juvenile Trespasser	10	0.22	0.22	0.22	--	--	--	--	--	--	2.16E-01	0.00E+00	2.16E-01	NC	NC	NC	NC	NC	NC	1E-07	0E+00	1E-07	--	--	--	--	--	--	1.28E-07	0.00E+00	1.28E-07	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	10	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	10	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 8																																							
Juvenile Trespasser	25	0.030	0.000	0.030	--	--	--	--	--	--	2.99E-02	0.00E+00	2.99E-02	NC	NC	NC	NC	NC	NC	2E-08	0E+00	2E-08	--	--	--	--	--	--	1.77E-08	0.00E+00	1.77E-08	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	25	5.0	0.0	5.0	--	--	--	--	--	--	5.00E+00	0.00E+00	5.00E+00	NC	NC	NC	NC	NC	NC	3E-06	0E+00	3E-06	--	--	--	--	--	--	2.93E-06	0.00E+00	2.93E-06	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	25	16	0	16	--	--	--	--	--	--	1.64E+01	0.00E+00	1.64E+01	NC	NC	NC	NC	NC	NC	3E-06	0E+00	3E-06	--	--	--	--	--	--	3.04E-06	0.00E+00	3.04E-06	NC	NC	NC	NC	NC	NC	NC	NC	NC
Exposure Unit 8																																							
Juvenile Trespasser	58	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	58	16	6	10	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	1.62E+01	6.14E+00	1.01E+01	8E-06	4E-06	4E-06	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	8.04E-06	4.11E-06	3.94E-06	NC	NC	NC
Exposure Unit 8																																							
Juvenile Trespasser	1000	0.193	0.151	0.042	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	1.93E-01	1.51E-01	4.20E-02	1E-06	1E-06	3E-07	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	1.45E-06	1.14E-06	3.16E-07	NC	NC	NC
On-site Worker	1000	2.92	2.29	0.64	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	2.92E+00	2.29E+00	6.36E-01	6E-05	4E-05	1E-05	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	5.51E-05	4.31E-05	1.20E-05	NC	NC	NC
Construction Worker	1000	5.1	3.4	1.7	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	5.14E+00	3.41E+00	1.73E+00	4E-06	2E-06	1E-06	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	3.68E-06	2.45E-06	1.23E-06	NC	NC	NC
Exposure Unit 9																																							
Juvenile Trespasser	0	0.41	0.28	0.19	--	--	--	--	--	--	5.01E-03	0.00E+00	5.01E-03	--	--	--	4.10E-01	2.80E-01	1.82E-01	3E-06	2E-06	1E-06	--	--	--	--	--	--	2.81E-09	0.00E+00	2.81E-09	--	--	--	2.95E-06	2.06E-06	1.28E-06	**1E-03**	**1E-04**	9E-04
On-site Worker	0	7.2	4.3	3.7	--	--	--	--	--	--	9.77E-01	0.00E+00	9.77E-01	--	--	--	6.21E+00	4.26E+00	2.75E+00	**1E-04**	8E-05	4E-05	--	--	--	--	--	--	5.26E-07	0.00E+00	5.26E-07	--	--	--	**1.02E-04**	7.71E-05	3.98E-05	**3E-03**	**4E-04**	3E-03
Construction Worker	0	23	6	17	--	--	--	--	--	--	8.60E+00	0.00E+00	8.60E+00	--	--	--	1.47E+01	5.98E+00	8.75E+00	1E-05	4E-06	7E-06	--	--	--	--	--	--	8.42E-07	0.00E+00	8.42E-07	--	--	--	1.07E-05	4.39E-06	6.31E-06	**2E-02**	**9E-03**	2E-02
Exposure Unit 9																																							
Juvenile Trespasser	1	0.0048	0.0000	0.0048	--	--	--	--	--	--	4.85E-03	0.00E+00	4.85E-03	--	--	--	NC	NC	NC	3E-09	0E+00	3E-09	--	--	--	--	--	--	2.65E-09	0.00E+00	2.65E-09	--	--	--	NC	NC	NC	NC	NC	NC
On-site Worker	1	0.95	0.00	0.95	--	--	--	--	--	--	9.46E-01	0.00E+00	9.46E-01	--	--	--	NC	NC	NC	5E-07	0E+00	5E-07	--	--	--	--	--	--	4.97E-07	0.00E+00	4.97E-07	--	--	--	NC	NC	NC	NC	NC	NC
Construction Worker	1	8.6	0.0	8.6	--	--	--	--	--	--	8.60E+00	0.00E+00	8.60E+00	--	--	--	NC	NC	NC	8E-07	0E+00	8E-07	--	--	--	--	--	--	7.92E-07	0.00E+00	7.92E-07	--	--	--	NC	NC	NC	NC	NC	NC
Exposure Unit 9																																							
Juvenile Trespasser	10	0.0034	0.0000	0.0034	--	--	--	--	--	--	3.36E-03	0.00E+00	3.36E-03	--	--	--	NC	NC	NC	2E-09	0E+00	2E-09	--	--	--	--	--	--	1.75E-09	0.00E+00	1.75E-09	--	--	--	NC	NC	NC	NC	NC	NC
On-site Worker	10	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC
Construction Worker	10	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC
Exposure Unit 9																																							
Juvenile Trespasser	25	0.00089	0.00000	0.00089	--	--	--	--	--	--	8.89E-04	0.00E+00	8.89E-04	--	--	--	NC	NC	NC	3E-10	0E+00	3E-10	--	--	--	--	--	--	2.93E-10	0.00E+00	2.93E-10	--	--	--	NC	NC	NC	NC	NC	NC
On-site Worker	25	0.20	0.00	0.20	--	--	--	--	--	--	1.96E-01	0.00E+00	1.96E-01	--	--	--	NC	NC	NC	5E-08	0E+00	5E-08	--	--	--	--	--	--	5.33E-08	0.00E+00	5.33E-08	--	--	--	NC	NC	NC	NC	NC	NC
Construction Worker	25	0.00	0.00	0.00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	--	--	--	NC	NC	NC	0E+00	0E+00	0E+00	--	--	--	--	--	--	0.00E+00	0.00E+00	0.00E+00	--	--	--	NC	NC	NC	NC	NC	NC
Exposure Unit 9																																							
Juvenile Trespasser	58	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC
Construction Worker	58	21	6	15	--	--	--	--	--	--	NC	NC	NC	--	--	--	2.07E+01	6.14E+00	1.45E+01	1E-05	4E-06	8E-06	--	--	--	--	--	--	NC	NC	NC	--	--	--	1.18E-05	4.11E-06	7.73E-06	NC	NC	NC
Exposure Unit 9																																							
Juvenile Trespasser	1000	0.233	0.151	0.087	--	--	--	--	--	--	NC	NC	NC	--	--	--	2.33E-01	1.51E-01	8.67E-02	2E-06	1E-06	7E-07	--	--	--	--	--	--	NC	NC	NC	--	--	--	1.76E-06	1.14E-06	6.54E-07	NC	NC	NC
On-site Worker	1000	3.5	2.3	1.3	--	--	--	--	--	--	NC	NC	NC	--	--	--	3.53E+00	2.29E+00	1.31E+00	7E-05	4E-05	2E-05	--	--	--	--	--	--	NC	NC	NC	--	--	--	6.67E-05	4.31E-05	2.48E-05	NC	NC	NC
Construction Worker	1000	8.9	3.4	5.5	--	--	--	--	--	--	NC	NC	NC	--	--	--	8.93E+00	3.41E+00	5.52E+00	6E-06	2E-06	4E-06	--	--	--	--	--	--	NC	NC	NC	--	--	--	6.40E-06	2.45E-06	3.95E-06	NC	NC	NC
Exposure Unit 10																																							
Juvenile Trespasser	0	0.40	0.28	0.12	NA	NA	NA	--	--	--	--	--	--	--	--	--	4.01E-01	2.80E-01	1.21E-01	3E-06	2E-06	9E-07	NA	NA	NA	--	--	--	--	--	--	--	--	--	2.97E-06	2.06E-06	9.10E-07	**2E-03**	**1E-04**	2E-03
On-site Worker	0	6.1	4.3	1.8	NA	NA	NA	--	--	--	--	--	--	--	--	--	6.05E+00	4.26E+00	1.80E+00	**1E-04**	8E-05	3E-05	NA	NA	NA	--	--	--	--	--	--	--	--	--	**1.06E-04**	7.71E-05	2.93E-05	**7E-03**	**4E-04**	7E-03
Construction Worker	0	11.2	6.3

TABLE 6-13
SELECTED CARCINOGENIC RISKS, RADIATION DOSES, AND HAZARD INDICES BY EU
REMEDIAL INVESTIGATION FORMER GUTERL SPECIALTY STEEL CORPORATION FUSRAP SITE

Scenario	Time (years)	Gross EPC Total Dose (mrem/yr)	Background Total Dose (mrem/yr)	Net EPC Total Dose (mrem/yr)	Gross Groundwater Dose	Background Groundwater Dose	Net Groundwater Dose	Gross Surface Water Dose	Background Surface Water Dose	Net Surface Water Dose	Gross Building Surface Dose	Background Building Surface Dose	Net Building Surface Dose	Gross Sediment Dose	Background Sediment Dose	Net Sediment Dose	Gross Soil Dose	Background Soil Dose	Net Soil Dose	Gross EPC Total Risk	Background Total Risk	Net EPC Total Risk	Gross Groundwater Risk	Background Groundwater Risk	Net Groundwater Risk	Gross Surface Water Risk	Background Surface Water Risk	Net Surface Water Risk	Gross Building Surface Risk	Background Building Surface Risk	Net Building Surface Risk	Gross Sediment Risk	Background Sediment Risk	Net Sediment Risk	Gross Soil Risk	Background Soil Risk	Net Soil Risk	Gross EPC Hazard Index	Background Hazard Index	Net EPC Hazard Index
Exposure Unit 10																																								
Juvenile Trespasser	58	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC
Construction Worker	58	22	6	16	1.04E+00	0.00E+00	1.04E+00	--	--	--	--	--	--	--	--	--	2.14E+01	6.14E+00	1.53E+01	1E-05	4E-06	6E-06	2.92E-07	0.00E+00	2.92E-07	--	--	--	--	--	--	--	--	--	1.02E-05	4.11E-06	6.08E-06	NC	NC	NC
Resident - Adult	58	**187**	25	**162**	1.67E+01	0.00E+00	1.67E+01	--	--	--	--	--	--	--	--	--	**1.70E+02**	2.45E+01	**1.45E+02**	**2E-03**	**4E-04**	**1E-03**	**1.41E-04**	0.00E+00	**1.41E-04**	--	--	--	--	--	--	--	--	--	**1.71E-03**	**3.98E-04**	**1.31E-03**	NC	NC	NC
Exposure Unit 10																																							
Juvenile Trespasser	1000	0.182	0.151	0.031	NA	NA	NA	--	--	--	--	--	--	--	--	--	1.82E-01	1.51E-01	3.11E-02	1E-06	1E-06	2E-07	NA	NA	NA	--	--	--	--	--	--	--	--	--	1.37E-06	1.14E-06	2.34E-07	NC	NC	NC
On-site Worker	1000	2.76	2.29	0.47	NA	NA	NA	--	--	--	--	--	--	--	--	--	2.76E+00	2.29E+00	4.71E-01	5E-05	4E-05	9E-06	NA	NA	NA	--	--	--	--	--	--	--	--	--	5.20E-05	4.31E-05	8.87E-06	NC	NC	NC
Construction Worker	1000	5.5	3.4	2.1	NC	NC	NC	--	--	--	--	--	--	--	--	--	5.52E+00	3.41E+00	2.10E+00	4E-06	2E-06	1E-06	NC	NC	NC	--	--	--	--	--	--	--	--	--	3.93E-06	2.45E-06	1.48E-06	NC	NC	NC
Resident - Adult	1000	15	9	6	NC	NC	NC	--	--	--	--	--	--	--	--	--	1.53E+01	9.02E+00	6.26E+00	**3E-04**	**2E-04**	**1E-04**	NC	NC	NC	--	--	--	--	--	--	--	--	--	**3.37E-04**	**2.07E-04**	**1.30E-04**	NC	NC	NC
Exposure Unit 11																																							
Juvenile Trespasser	0	0.53	0.29	0.25	NA	NA	NA	2.38E-02	1.24E-03	2.27E-02	--	--	--	3.22E-02	6.83E-03	2.59E-02	4.71E-01	2.80E-01	1.99E-01	4E-06	2E-06	2E-06	NA	NA	NA	7.14E-08	5.95E-09	6.57E-08	--	--	--	2.12E-07	4.04E-08	1.75E-07	3.42E-06	2.06E-06	1.41E-06	**1E-02**	**2E-04**	1E-02
On-site Worker	0	7.3	4.3	3.1	NA	NA	NA	1.24E-01	6.44E-03	1.18E-01	--	--	--	1.67E-01	3.56E-02	1.35E-01	7.03E+00	4.26E+00	2.89E+00	**1E-04**	8E-05	5E-05	NA	NA	NA	9.30E-07	7.74E-08	8.55E-07	--	--	--	2.77E-06	5.26E-07	2.28E-06	**1.18E-04**	7.71E-05	4.28E-05	**4E-02**	**6E-04**	4E-02
Construction Worker	0	11.4	6.3	5.3	5.09E-01	2.83E-01	4.39E-01	1.24E-01	6.44E-03	1.18E-01	--	--	--	1.67E-01	3.56E-02	1.35E-01	1.06E+01	5.98E+00	4.57E+00	8E-06	5E-06	3E-06	1.51E-07	1.24E-07	3.72E-08	3.10E-09	3.42E-08	--	--	--	1.11E-07	2.10E-08	9.12E-08	7.27E-06	4.39E-06	2.88E-06	**2E-01**	**4E-03**	2E-01
Resident - Adult	0	**35**	21	18	8.20E+00	4.56E+00	7.07E+00	NA	NA	NA	--	--	--	NA	NA	NA	**2.66E+01**	1.61E+01	1.05E+01	**6E-04**	**4E-04**	**2E-04**	7.27E-05	7.26E-05	6.00E-05	NA	NA	NA	--	--	--	NA	NA	NA	**5.29E-04**	**3.48E-04**	**1.81E-04**	**5E-01**	**3E-02**	5E-01
Resident - Chic	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	NA	NA	NA	NA	NA	NA	**1E+00**	**4E-02**	9E-01
Exposure Unit 11																																							
Juvenile Trespasser	58	NC	NC	NC	NA	NA	NA	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NA	NA	NA	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	NA	NA	NA	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NA	NA	NA	NC	NC	NC	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	58	**44**	6	**38**	1.04E+00	0.00E+00	1.04E+00	NC	NC	NC	--	--	--	NC	NC	NC	**4.32E+01**	6.14E+00	**3.71E+01**	2E-05	4E-06	1E-05	2.92E-07	0.00E+00	2.92E-07	NC	NC	NC	--	--	--	NC	NC	NC	1.57E-05	4.11E-06	1.16E-05	NC	NC	NC
Resident - Adult	58	**461**	25	**436**	1.67E+01	0.00E+00	1.67E+01	NA	NA	NA	--	--	--	NA	NA	NA	**4.44E+02**	2.45E+01	**4.20E+02**	**4E-03**	**4E-04**	**4E-03**	**1.41E-04**	0.00E+00	**1.41E-04**	NA	NA	NA	--	--	--	NA	NA	NA	**3.84E-03**	**3.98E-04**	**3.44E-03**	NC	NC	NC
Exposure Unit 11																																							
Juvenile Trespasser	1000	0.166	0.151	0.018	NA	NA	NA	NC	NC	NC	--	--	--	NC	NC	NC	1.66E-01	1.51E-01	1.77E-02	1E-06	1E-06	1E-07	NA	NA	NA	NC	NC	NC	--	--	--	NC	NC	NC	1.25E-06	1.14E-06	1.33E-07	NC	NC	NC
On-site Worker	1000	2.52	2.29	0.27	NA	NA	NA	NC	NC	NC	--	--	--	NC	NC	NC	2.52E+00	2.29E+00	2.68E-01	5E-05	4E-05	5E-06	NA	NA	NA	NC	NC	NC	--	--	--	NC	NC	NC	4.75E-05	4.31E-05	5.06E-06	NC	NC	NC
Construction Worker	1000	4.4	3.4	1.0	NC	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	4.45E+00	3.41E+00	1.05E+00	8E-06	5E-06	2E-06	7E-07	NC	NC	NC	NC	NC	--	--	--	NC	NC	NC	3.10E-06	2.45E-06	6.55E-07	NC	NC	NC
Resident - Adult	1000	13.96	9.02	4.98	NC	NC	NC	NA	NA	NA	--	--	--	NA	NA	NA	1.40E+01	9.02E+00	4.98E+00	**3E-04**	**2E-04**	7E-05	NC	NC	NC	NA	NA	NA	--	--	--	NA	NA	NA	**2.79E-04**	**2.07E-04**	7.23E-05	NC	NC	NC
Exposure Unit 12																																							
Juvenile Trespasser	0	0.333	0.287	0.046	NA	NA	NA	--	--	--	--	--	--	9.84E-03	6.83E-03	3.01E-03	3.23E-01	2.80E-01	4.29E-02	2E-06	2E-06	3E-07	NA	NA	NA	--	--	--	--	--	--	6.12E-08	4.04E-08	2.08E-08	2.38E-06	2.06E-06	3.17E-07	**2E-03**	**2E-04**	2E-03
On-site Worker	0	4.93	4.29	0.64	NA	NA	NA	--	--	--	--	--	--	5.13E-02	3.56E-02	1.57E-02	4.88E+00	4.26E+00	6.24E-01	9E-05	8E-05	1E-05	NA	NA	NA	--	--	--	--	--	--	7.97E-07	5.26E-07	2.71E-07	8.71E-05	7.71E-05	1.01E-05	**6E-03**	**6E-04**	6E-03
Construction Worker	0	9.4	6.3	3.3	4.10E-01	2.83E-01	3.41E-01	--	--	--	--	--	--	5.13E-02	3.56E-02	1.57E-02	8.97E+00	5.98E+00	2.98E+00	6E-06	5E-06	2E-06	1.24E-07	1.50E-07	9.74E-08	--	--	--	--	--	--	3.19E-08	2.10E-08	1.08E-08	6.26E-06	4.39E-06	1.87E-06	**1E-01**	**4E-03**	1E-01
Resident - Adult	0	**29**	21	12	6.60E+00	4.56E+00	5.49E+00	--	--	--	--	--	--	NA	NA	NA	2.26E+01	1.61E+01	6.57E+00	**5E-04**	**4E-04**	**2E-04**	5.98E-05	7.26E-05	4.71E-05	--	--	--	--	--	--	NA	NA	NA	**4.54E-04**	**3.48E-04**	**1.06E-04**	**5E-01**	**3E-02**	4E-01
Resident - Chic	0	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	**7E-01**	**4E-02**	7E-01
Exposure Unit 12																																							
Juvenile Trespasser	58	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	58	**32**	6	**25**	1.04E+00	0.00E+00	1.04E+00	--	--	--	--	--	--	NC	NC	NC	**3.05E+01**	6.14E+00	2.43E+01	1E-05	4E-06	8E-06	2.92E-07	0.00E+00	2.92E-07	--	--	--	--	--	--	NC	NC	NC	1.16E-05	4.11E-06	7.54E-06	NC	NC	NC
Resident - Adult	58	**317**	25	**292**	1.67E+01	0.00E+00	1.67E+01	--	--	--	--	--	--	NA	NA	NA	**3.00E+02**	2.45E+01	**2.75E+02**	**3E-03**	**4E-04**	**2E-03**	**1.41E-04**	0.00E+00	**1.41E-04**	--	--	--	--	--	--	NA	NA	NA	**2.64E-03**	**3.98E-04**	**2.25E-03**	NC	NC	NC
Exposure Unit 12																																							
Juvenile Trespasser	1000	0.1567	0.1512	0.0055	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	1.57E-01	1.51E-01	5.48E-03	1E-06	1E-06	4E-08	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	1.18E-06	1.14E-06	4.07E-08	NC	NC	NC
On-site Worker	1000	2.371	2.289	0.082	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	2.37E+00	2.29E+00	8.22E-02	4E-05	4E-05	2E-06	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	4.47E-05	4.31E-05	1.54E-06	NC	NC	NC
Construction Worker	1000	3.92	3.41	0.51	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	3.92E+00	3.41E+00	5.12E-01	3E-06	2E-06	3E-07	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	2.75E-06	2.45E-06	2.97E-07	NC	NC	NC
Resident - Adult	1000	11.9	9.0	2.8	NC	NC	NC	--	--	--	--	--	--	NA	NA	NA	1.19E+01	9.02E+00	2.83E+00	**2E-04**	**2E-04**	4E-05	NC	NC	NC	--	--	--	--	--	--	NA	NA	NA	**2.43E-04**	**2.07E-04**	3.63E-05	NC	NC	NC
Exposure Unit 13																																							
Juvenile Trespasser	0	0.37	0.29	0.12	NA	NA	NA	--	--	--	--	--	--	1.89E-02	6.83E-03	1.35E-02	3.52E-01	2.80E-01	1.06E-01	3E-06	2E-06	1E-06	NA	NA	NA	--	--	--	--	--	--	1.33E-07	4.04E-08	9.70E-08	2.76E-06	2.06E-06	9.53E-07	**6E-03**	**2E-04**	6E-03
On-site Worker	0	5.3	4.3	1.6	NA	NA	NA	--	--	--	--	--	--	9.86E-02	3.56E-02	7.04E-02	5.24E+00	4.26E+00	1.51E+00	**1E-04**	8E-05	4E-05	NA	NA	NA	--	--	--	--	--	--	1.73E-06	5.26E-07	1.26E-06	**1.07E-04**	7.71E-05	3.92E-05	**2E-02**	**6E-04**	2E-02
Construction Worker	0	12.2	6.3	6.4	4.40E-01	2.83E-01	3.71E-01	--	--	--	--	--	--	9.86E-02	3.56E-02	7.04E-02	1.16E+01	5.98E+00	5.96E+00	1E-05	5E-06	4E-06	1.32E-07	1.50E-07	1.04E-07	--	--	--	--	--	--	6.91E-08	2.10E-08	5.05E-08	7.51E-06	4.39E-06	3.37E-06	**4E-03**	**2E-01**	2E-01
Resident - Adult	0	**34**	21	18	7.09E+00	4.56E+00	5.97E+00	--	--	--	--	--	--	NA	NA	NA	**2.71E+01**	1.61E+01	1.20E+01	**6E-04**	**4E-04**	**3E-04**	6.38E-05	7.26E-05	5.01E-05	--	--	--	--	--	--	NA	NA	NA	**5.60E-04**	**3.48E-04**	**2.31E-04**	**5E-01**	**3E-02**	5E-01
Resident - Chic	0	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	**1E+00**	**4E-02**	**1E+00**
Exposure Unit 13																																							
Juvenile Trespasser	58	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	58	**75**	6	**69**	1.04E+00	0.00E+00	1.04E+00	--	--	--	--	--	--	NC	NC	NC	**7.38E+01**	6.14E+00	**6.79E+01**	2E-05	4E-06	2E-05	2.92E-07	0.00E+00	2.92E-07	--	--	--	--	--	--	NC	NC	NC	2.46E-05	4.11E-06	2.06E-05	NC	NC	NC
Resident - Adult	58	**813**	25	**789**	1.67E+01	0.00E+00	1.67E+01	--	--	--	--	--	--	NA	NA	NA	**7.96E+02**	2.45E+01	**7.72E+02**	**7E-03**	**4E-04**	**6E-03**	**1.41E-04**	0.00E+00	**1.41E-04**	--	--	--	--	--	--	NA	NA	NA	**6.62E-03**	**3.98E-04**	**6.24E-03**	NC	NC	NC
Exposure Unit 13																																							
Juvenile Trespasser	1000	0.26	0.15	0.11	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	2.64E-01	1.51E-01	1.14E-01	2E-06	1E-06	9E-07	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	1.99E-06	1.14E-06	8.51E-07	NC	NC	NC
On-site Worker	1000	4.0	2.3	1.7	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	4.00E+00	2.29E+00	1.71E+00	8E-05	4E-05	3E-05	NA	NA	NA	--	--	--	--	--	--	NC	NC	NC	7.53E-05	4.31E-05	3.23E-05	NC	NC	NC
Construction Worker	1000	5.5	3.4	2.1	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	5.53E+00	3.41E+00	2.13E+00	4E-06	2E-06	1E-06	NC	NC	NC	--	--	--	--	--	--	NC	NC	NC	3.77E-06	2.45E-06	1.32E-06	NC	NC	NC
Resident - Adult	1000	18.8	9.0	9.8	NC	NC	NC	--	--	--	--	--	--	NA	NA	NA	1.88E+01	9.02E+00	9.81E+00	**3E-04**	**2E-04**	**1E-04**	NC	NC	NC	--	--	--	--	--	--	NA	NA	NA	**3.49E-04**	**2.07E-04**	**1.43E-04**	NC	NC	NC
Exposure Unit 14																																							
Juvenile Trespasser	0	0.2286	0.2802	0.0024	NA	NA	NA	--	--	--	--	--	--	--	--	--	2.29E-01	2.80E-01	2.43E-03	2E-06	2E-06	2E-08	NA	NA	NA	--	--	--	--	--	--	--	--	--	1.70E-06	2.06E-06	1.65E-08	**3E-04**	**1E-04**	1E-04
On-site Worker	0	3.472	4.257	0.035	NA	NA	NA	--	--	--	--	--	--	--	--	--	3.47E+00	4.26E+00	3.48E-02	6E-05	8E-05	6E-07	NA	NA	NA	--	--	--	--	--	--	--	--	--	6.13E-05	7.71E-05	5.64E-07	**8E-04**	**4E-04**	4E-04
Construction Worker	0	8.1	6.3	2.2	2.06E+00	2.83E-01	1.99E+00	--	--	--	--	--	--	--	--	--	6.00E+00	5.98E+00	2.01E-01	5E-06	5E-06	7E-07	5.99E-07	1.50E-07	5.67E-07	--	--	--	--	--	--	--	--	--	4.37E-06	4.39E-06	1.09E-07	**1E-01**	**4E-03**	1E-01
Resident - Adult	0	**49**	21	**32**	**3.32E+01**	4.56E+00	**3.20E+01**	--	--	--	--	--	--	--	--	--	1.60E+01	1.61E+01	3.83E-01	**6E-04**	**4E-04**	**3E-04**	**2.89E-04**	7.26E-05	**2.74E-04**	--	--	--	--	--	--	--	--	--	**3.42E-04**	**3.48E-04**	6.63E-06	**2E+00**	**3E-02**	**2E+00**
Resident - Chic	0	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	NA	NA	NA	**2E+00**	**4E-02**	**2E+00**
Exposure Unit 14																																							
Juvenile Trespasser	58	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC
Construction Worker	58	9.6	6.1	3.7	1.04E+00	0.00E+00	1.04E+00	--	--	--	--	--	--	--	--	--	8.53E+00	6.14E+00	2.65E+00	5E-06	4E-06	1E-06	2.92E-07	0.00E+00	2.92E-07	--	--	--	--	--	--	--	--	--	4.71E-06	4.11E-06	7.94E-07	NC	NC	NC
Resident - Adult	58	**71**	25	**47**	1.67E+01	0.00E+00	1.67E+01	--	--	--	--	--	--	--	--	--	**5.44E+01**	2.45E+01	**3.06E+01**	**8E-04**	**4E-04**	**4E-04**	**1.41E-04**	0.00E+00	**1.41E-04**	--	--	--	--	--	--	--	--	--	**6.30E-04**	**3.98E-04**	**2.47E-04**	NC	NC	NC
Exposure Unit 14																																							
Juvenile Trespasser	1000	0.100353	0.151228	0.000010	NA	NA	NA	--	--	--	--	--	--	--	--	--	1.00E-01	1.51E-01	1.03E-05	8E-07	1E-06	7E-11	NA	NA	NA	--	--	--	--	--	--	--	--	--	7.54E-07	1.14E-06	7.39E-11	NC	NC	NC
On-site Worker	1000	1.51824	2.28872	0.00015	NA	NA	NA	--	--	--	--	--	--	--	--	--	1.52E+00	2.29E+00	1.51E-04	3E-05	4E-05	3E-09	NA	NA	NA	--	--	--	--	--	--	--	--	--	2.86E-05	4.31E-05	2.75E-09	NC	NC	NC
Construction Worker	1000	3.225	3.412	0.035	NC	NC	NC	--	--	--	--	--	--	--	--	--	3.23E+00	3.41E+00	3.52E-02	2E-06	2E-06	2E-08	NC	NC	NC	--	--	--	--	--	--	--	--	--	2.31E-06	2.45E-06	1.64E-08	NC	NC	NC
Resident - Adult	1000	8.71	9.02	0.26	NC	NC	NC	--	--	--	--	--	--	--	--	--	8.71E+00	9.02E+00	2.63E-01	**2E-04**	**2E-04**	3E-06	NC	NC	NC	--	--	--	--	--	--	--	--	--	**1.96E-04**	**2.07E-04**	2.66E-06	NC	NC	NC
Exposure Unit 15																																							
Juvenile Trespasser	0	0.347	0.287	0.061	--	--	--	--	--	--	--	--	--	1.30E-02	6.83E-03	7.42E-03	3.34E-01	2.80E-01	5.37E-02	3E-06	2E-06	5E-07	--	--	--	--	--	--	--	--	--	9.20E-08	4.04E-08	5.56E-08	2.48E-06	2.06E-06	4.20E-07	**9E-04**	**2E-04**	7E-04
On-site Worker	0	5.14	4.29	0.85	--	--	--	--	--	--	--	--	--	6.78E-02	3.56E-02	3.86E-02	5.07E+00	4.26E+00	8.12E-01	9E-05	8E-05	1E-05	--	--	--	--	--	--	--	--	--	1.20E-06	5.26E-07	7.24E-07	9.06E-05	7.71E-05	1.35E-05	**4E-03**	**6E-04**	3E-03
Construction Worker	0	8.3	6.0	2.2	--	--	--	--	--	--	--	--	--	6.78E-02	3.56E-02	3.86E-02	8.19E+00	5.98E+00	2.21E+00	6E-06	4E-06	2E-06	--	--	--	--	--	--	--	--	--	4.79E-08	2.10E-08	2.90E-08	6.02E-06	4.39E-06	1.63E-06	**8E-03**	**3E-03**	6E-03
Resident - Adult	0	22.2	16.1	6.1	--	--	--	--	--	--	--	--	--	NA	NA	NA	2.22E+01	1.61E+01	6.11E+00	**5E-04**	**3E-04**	**1E-04**	--	--	--	--	--	--	--	--	--	NA	NA	NA	**4.67E-04**	**3.48E-04**	**1.19E-04**	**2E-03**	**1E-03**	1E-03
Resident - Chic	0	NA	NA	NA	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	**2E-02**	**9E-03**	1E-02
Exposure Unit 15																																							
Juvenile Trespasser	58	NC	NC	NC	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC	NC	NC	NC
Construction Worker	58	8.9	6.1	2.7	--	--	--	--	--	--	--	--	--	NC	NC	NC	8.86E+00	6.14E+00	2.71E+00	6E-06	4E-06	1E-06	--	--	--	--	--	--	--	--	--	NC	NC	NC	5.57E-06	4.11E-06	1.46E-06	NC	NC	NC
Resident - Adult	58	**43**	25	18	--	--	--	--	--	--	--	--	--	NA	NA	NA	**4.27E+01**	2.45E+01	1.81E+01	**6E-04**	**4E-04**	**2E-04**	--	--	--	--	--	--	--	--	--	NA	NA	NA	**6.00E-04**	**3.98E-04**	**2.02E-04**	NC	NC	NC
Exposure Unit 15																																							
Juvenile Trespasser	1000	0.178	0.151	0.027	--	--	--	--	--	--	--	--	--	NC	NC	NC	1.78E-01	1.51E-01	2.70E-02	1E-06	1E-06	2E-07	--	--	--	--	--	--	--	--	--	NC	NC	NC	1.34E-06	1.14E-06	2.03E-07	NC	NC	NC
On-site Worker	1000	2.70	2.29	0.41	--	--	--	--	--	--	--	--	--	NC	NC	NC	2.70E+00	2.29E+00	4.08E-01	5E-05	4E-05	8E-06	--	--	--	--	--	--	--	--	--	NC	NC	NC	5.08E-05	4.31E-05	7.69E-06	NC	NC	NC
Construction Worker	1000	4.23	3.41	0.82	--	--	--	--	--	--	--	--	--	NC	NC	NC	4.23E+00	3.41E+00	8.16E-01	8E-06	5E-06	2E-06	6E-07	--	--	--	--	--	--	--	--	--	NC	NC	NC	3.03E-06	2.45E-06	5.81E-07	NC	NC	NC
Resident - Adult	1000	11.3	9.0	2.2	--	--	--	--	--	--	--	--	--	NA	NA	NA	1.13E+01	9.02E+00	2.23E+00	**3E-04**	**2E-04**	5E-05	--	--	--	--	--	--	--	--	--	NA	NA	NA	**2.57E-04**	**2.07E-04**	4.96E-05	NC	NC	NC
Exposure Unit 16																																							
Juvenile Trespasser	0	0.40	0.29	0.12	NA	NA	NA	--	--	--	--	--	--	7.29E-03	6.83E-03	3.88E-03	3.94E-01	2.80E-01	1.14E-01	3E-06	2E-06	8E-07	NA	NA	NA				--	--	--

TABLE 6-13
SELECTED CARCINOGENIC RISKS, RADIATION DOSES, AND HAZARD INDICES BY EU
REMEDIAL INVESTIGATION FORMER GUTERL SPECIALTY STEEL CORPORATION FUSRAP SITE

Scenario	Time (years)	Gross EPC Total Dose (mrem/yr)	Background Total Dose (mrem/yr)	Net EPC Total Dose (mrem/yr)	Gross Groundwater Dose	Background Groundwater Dose	Net Groundwater Dose	Gross Surface Water Dose	Background Surface Water Dose	Net Surface Water Dose	Gross Building Surface Dose	Background Building Surface Dose	Net Building Surface Dose	Gross Sediment Dose	Background Sediment Dose	Net Sediment Dose	Gross Soil Dose	Background Soil Dose	Net Soil Dose	Gross EPC Total Risk	Background Total Risk	Net EPC Total Risk	Gross Groundwater Risk	Background Groundwater Risk	Net Groundwater Risk	Gross Surface Water Risk	Background Surface Water Risk	Net Surface Water Risk	Gross Building Surface Risk	Background Building Surface Risk	Net Building Surface Risk	Gross Sediment Risk	Background Sediment Risk	Net Sediment Risk	Gross Soil Risk	Background Soil Risk	Net Soil Risk	Gross EPC Hazard Index	Background Hazard Index	Net EPC Hazard Index
Exposure Unit 17																																								
Juvenile Trespasser	0	7.4	0.3	7.1	--	--	--	--	--	--	--	--	--	--	--	--	7.43E+00	2.80E-01	7.15E+00	5E-05	2E-06	5E-05	--	--	--	--	--	--	--	--	--	--	--	--	5.47E-05	2.06E-06	5.26E-05	**3E-01**	**1E-04**	3E-01
On-site Worker	0	**109**	4	**104**	--	--	--	--	--	--	--	--	--	--	--	--	**1.09E+02**	4.26E+00	**1.04E+02**	**2E-03**	8E-05	**2E-03**	--	--	--	--	--	--	--	--	--	--	--	--	**1.74E-03**	7.71E-05	**1.66E-03**	**8E-01**	**4E-04**	8E-01
Construction Worker	0	**81**	6	**75**	--	--	--	--	--	--	--	--	--	--	--	--	**8.06E+01**	5.98E+00	**7.46E+01**	5E-05	4E-06	5E-05	--	--	--	--	--	--	--	--	--	--	--	--	5.04E-05	4.39E-06	4.60E-05	**2E+00**	**2E-03**	**2E+00**
Resident - Adult	0	**182**	16	**166**	--	--	--	--	--	--	--	--	--	--	--	--	**1.82E+02**	1.61E+01	**1.66E+02**	**3E-03**	**3E-04**	**3E-03**	--	--	--	--	--	--	--	--	--	--	--	--	**3.41E-03**	**3.48E-04**	**3.06E-03**	**8E-01**	**1E-03**	8E-01
Resident - Chilc	0	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	**9E-03**	**8E+00**	
Exposure Unit 17																																								
Juvenile Trespasser	58	NC	NC	NC	--	--	--	--	--	--	--	--	--	--	--	--	**NC**	**NC**	NC	NC	NC	NC	--	--	--	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	--	--	--	--	--	--	--	--	--	--	--	--	**NC**	**NC**	NC	NC	NC	NC	--	--	--	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC
Construction Worker	58	**660**	6	**653**	--	--	--	--	--	--	--	--	--	--	--	--	**6.60E+02**	6.14E+00	**6.53E+02**	**2E-04**	4E-06	**2E-04**	--	--	--	--	--	--	--	--	--	--	--	--	**2.08E-04**	4.11E-06	**2.04E-04**	NC	NC	NC
Resident - Adult	58	**7393**	25	**7368**	--	--	--	--	--	--	--	--	--	--	--	--	**7.39E+03**	2.45E+01	**7.37E+03**	**6E-02**	**4E-04**	**6E-02**	--	--	--	--	--	--	--	--	--	--	--	--	**6.08E-02**	**3.98E-04**	**6.04E-02**	NC	NC	NC
Exposure Unit 17																																								
Juvenile Trespasser	1000	1.6	0.2	1.4	--	--	--	--	--	--	--	--	--	--	--	--	1.55E+00	1.51E-01	1.40E+00	1E-05	1E-06	1E-05	--	--	--	--	--	--	--	--	--	--	--	--	1.17E-05	1.14E-06	1.06E-05	NC	NC	NC
On-site Worker	1000	24	2	21	--	--	--	--	--	--	--	--	--	--	--	--	2.36E+01	2.29E+00	2.13E+01	**4E-04**	4E-05	**4E-04**	--	--	--	--	--	--	--	--	--	--	--	--	**4.45E-04**	4.31E-05	**4.01E-04**	NC	NC	NC
Construction Worker	1000	**25**	3	22	--	--	--	--	--	--	--	--	--	--	--	--	**2.51E+01**	3.41E+00	2.17E+01	2E-05	2E-06	1E-05	--	--	--	--	--	--	--	--	--	--	--	--	1.63E-05	2.45E-06	1.38E-05	NC	NC	NC
Resident - Adult	1000	**105**	9	**96**	--	--	--	--	--	--	--	--	--	--	--	--	**1.05E+02**	9.02E+00	**9.61E+01**	**2E-03**	**2E-04**	**1E-03**	--	--	--	--	--	--	--	--	--	--	--	--	**1.67E-03**	**2.07E-04**	**1.47E-03**	NC	NC	NC
Exposure Unit 18																																								
Juvenile Trespasser	0	0.318	0.280	0.038	NA	NA	NA	--	--	--	--	--	--	--	--	--	3.18E-01	2.80E-01	3.76E-02	2E-06	2E-06	3E-07	NA	NA	NA	--	--	--	--	--	--	--	--	--	2.37E-06	2.06E-06	3.06E-07	**1E-04**	**1E-04**	7E-07
On-site Worker	0	4.83	4.26	0.57	NA	NA	NA	--	--	--	--	--	--	--	--	--	4.83E+00	4.26E+00	5.71E-01	9E-05	8E-05	1E-05	NA	NA	NA	--	--	--	--	--	--	--	--	--	8.69E-05	7.71E-05	9.89E-06	**4E-04**	**4E-04**	2E-06
Construction Worker	0	7.16	6.27	0.90	3.07E-01	2.83E-01	2.35E-02	--	--	--	--	--	--	--	--	--	6.86E+00	5.98E+00	8.74E-01	5E-06	5E-06	7E-07	1.62E-07	1.50E-07	1.13E-08	--	--	--	--	--	--	--	--	--	5.04E-06	4.39E-06	6.53E-07	**5E-03**	**4E-03**	5E-04
Resident - Adult	0	23.5	20.6	2.9	4.94E+00	4.56E+00	3.79E-01	--	--	--	--	--	--	--	--	--	1.86E+01	1.61E+01	2.51E+00	**5E-04**	**4E-04**	5E-05	7.80E-05	7.26E-05	5.45E-06	--	--	--	--	--	--	--	--	--	**3.95E-04**	**3.48E-04**	4.65E-05	**3E-02**	**3E-02**	9E-03
Resident - Chilc	0	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	NA	NA	NA	**5E-02**	**4E-02**	9E-03
Exposure Unit 18																																								
Juvenile Trespasser	58	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	--	--	--	**NC**	**NC**	NC	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	--	--	--	**NC**	**NC**	NC	NC	NC	NC	NA	NA	NA	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC
Construction Worker	58	7.7	6.1	1.6	1.04E+00	0.00E+00	1.04E+00	--	--	--	--	--	--	--	--	--	6.70E+00	6.14E+00	5.64E-01	5E-06	4E-06	7E-07	2.92E-07	0.00E+00	2.92E-07	--	--	--	--	--	--	--	--	--	4.49E-06	4.11E-06	3.87E-07	NC	NC	NC
Resident - Adult	58	**43**	25	19	1.67E+01	0.00E+00	1.67E+01	--	--	--	--	--	--	--	--	--	**2.64E+01**	2.45E+01	1.94E+00	**6E-04**	**4E-04**	**2E-04**	**1.41E-04**	0.00E+00	**1.41E-04**	--	--	--	--	--	--	--	--	--	**4.33E-04**	**3.98E-04**	3.52E-05	NC	NC	NC
Exposure Unit 18																																								
Juvenile Trespasser	1000	0.172	0.151	0.021	NA	NA	NA	--	--	--	--	--	--	--	--	--	1.72E-01	1.51E-01	2.12E-02	1E-06	1E-06	2E-07	NA	NA	NA	--	--	--	--	--	--	--	--	--	1.30E-06	1.14E-06	1.60E-07	NC	NC	NC
On-site Worker	1000	2.61	2.29	0.32	NA	NA	NA	--	--	--	--	--	--	--	--	--	2.61E+00	2.29E+00	3.22E-01	5E-05	4E-05	6E-06	NA	NA	NA	--	--	--	--	--	--	--	--	--	4.92E-05	4.31E-05	6.07E-06	NC	NC	NC
Construction Worker	1000	3.84	3.41	0.43	NC	NC	NC	--	--	--	--	--	--	--	--	--	3.84E+00	3.41E+00	4.30E-01	3E-06	2E-06	3E-07	NC	NC	NC	--	--	--	--	--	--	--	--	--	2.76E-06	2.45E-06	3.10E-07	NC	NC	NC
Resident - Adult	1000	10.1	9.0	1.1	NC	NC	NC	--	--	--	--	--	--	--	--	--	1.01E+01	9.02E+00	1.13E+00	**2E-04**	**2E-04**	3E-05	NC	NC	NC	--	--	--	--	--	--	--	--	--	**2.33E-04**	**2.07E-04**	2.61E-05	NC	NC	NC
Exposure Unit 19																																								
Juvenile Trespasser	0	0.0095	0.0081	0.0014	--	--	--	1.92E-03	1.24E-03	6.83E-04	--	--	--	7.57E-03	6.83E-03	7.55E-04	--	--	--	6E-08	5E-08	1E-08	--	--	--	9.90E-09	5.95E-09	3.95E-09	--	--	--	4.77E-08	4.04E-08	7.37E-09	--	--	--	5E-05	4E-05	7E-06
On-site Worker	0	NA	NA	NA	--	--	--	NA	NA	NA	--	--	--	NA	NA	NA	--	--	--	NA	NA	NA	--	--	--	NA	NA	NA	--	--	--	NA	NA	NA	--	--	--	NA	NA	NA
Construction Worker	0	NA	NA	NA	--	--	--	NA	NA	NA	--	--	--	NA	NA	NA	--	--	--	NA	NA	NA	--	--	--	NA	NA	NA	--	--	--	NA	NA	NA	--	--	--	NA	NA	NA
Resident - Adult	0	0.00475	0.00403	0.00072	--	--	--	9.59E-04	6.18E-04	3.41E-04	--	--	--	3.79E-03	3.41E-03	3.78E-04	--	--	--	9E-08	7E-08	2E-08	--	--	--	1.48E-08	8.92E-09	5.93E-09	--	--	--	7.16E-08	6.06E-08	1.11E-08	--	--	--	2E-05	2E-05	3E-06
Resident - Chilc	0	NA	NA	NA	--	--	--	NA	NA	NA	--	--	--	NA	NA	NA	--	--	--	NA	NA	NA	--	--	--	NA	NA	NA	--	--	--	NA	NA	NA	--	--	--	--	--	**2E-04**	3E-05
Exposure Unit 20																																								
Juvenile Trespasser	0	0.362	0.280	0.082	--	--	--	--	--	--	--	--	--	--	--	--	3.62E-01	2.80E-01	8.17E-02	3E-06	2E-06	6E-07	--	--	--	--	--	--	--	--	--	--	--	--	6.01E-07	6.01E-07	6.01E-07	**3E-04**	**1E-04**	2E-04
On-site Worker	0	5.5	4.3	1.2	--	--	--	--	--	--	--	--	--	--	--	--	5.50E+00	4.26E+00	1.24E+00	1E-04	8E-05	2E-05	--	--	--	--	--	--	--	--	--	--	--	--	1.83E-05	1.83E-05	1.83E-05	**9E-04**	**4E-04**	5E-04
Construction Worker	0	6.95	5.98	0.96	--	--	--	--	--	--	--	--	--	--	--	--	6.95E+00	5.98E+00	9.65E-01	5E-06	4E-06	7E-07	--	--	--	--	--	--	--	--	--	--	--	--	7.01E-07	7.01E-07	7.01E-07	**7E-03**	**2E-03**	5E-03
Resident - Adult	0	18.8	16.1	2.7	--	--	--	--	--	--	--	--	--	--	--	--	1.88E+01	1.61E+01	2.69E+00	**4E-04**	**3E-04**	5E-05	--	--	--	--	--	--	--	--	--	--	--	--	4.59E-05	4.59E-05	4.59E-05	**3E-03**	**1E-03**	2E-03
Resident - Chilc	0	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	**3E-02**	**9E-03**	2E-02
Exposure Unit 20																																								
Juvenile Trespasser	58	NC	NC	NC	--	--	--	--	--	--	--	--	--	--	--	--	**NC**	**NC**	NC	NC	NC	NC	--	--	--	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC
On-site Worker	58	NC	NC	NC	--	--	--	--	--	--	--	--	--	--	--	--	**NC**	**NC**	NC	NC	NC	NC	--	--	--	--	--	--	--	--	--	--	--	--	NC	NC	NC	NC	NC	NC
Construction Worker	58	8.2	6.1	2.1	--	--	--	--	--	--	--	--	--	--	--	--	8.24E+00	6.14E+00	2.09E+00	5E-06	4E-06	8E-07	--	--	--	--	--	--	--	--	--	--	--	--	4.91E-06	4.11E-06	8.01E-07	NC	NC	NC
Resident - Adult	58	**45**	25	21	--	--	--	--	--	--	--	--	--	--	--	--	**4.51E+01**	2.45E+01	2.06E+01	**6E-04**	**4E-04**	**2E-04**	--	--	--	--	--	--	--	--	--	--	--	--	**5.79E-04**	**3.98E-04**	**1.81E-04**	NC	NC	NC
Exposure Unit 20																																								
Juvenile Trespasser	1000	0.174	0.151	0.022	--	--	--	--	--	--	--	--	--	--	--	--	1.74E-01	1.51E-01	2.23E-02	1E-06	1E-06	2E-07	--	--	--	--	--	--	--	--	--	--	--	--	1.30E-06	1.14E-06	1.67E-07	NC	NC	NC
On-site Worker	1000	2.62	2.29	0.34	--	--	--	--	--	--	--	--	--	--	--	--	2.62E+00	2.29E+00	3.36E-01	5E-05	4E-05	6E-06	--	--	--	--	--	--	--	--	--	--	--	--	4.95E-05	4.31E-05	6.32E-06	NC	NC	NC
Construction Worker	1000	3.66	3.41	0.25	--	--	--	--	--	--	--	--	--	--	--	--	3.66E+00	3.41E+00	2.52E-01	3E-06	2E-06	2E-07	--	--	--	--	--	--	--	--	--	--	--	--	2.62E-06	2.45E-06	1.73E-07	NC	NC	NC
Resident - Adult	1000	9.80	9.02	0.78	--	--	--	--	--	--	--	--	--	--	--	--	9.80E+00	9.02E+00	7.79E-01	**2E-04**	**2E-04**	2E-05	--	--	--	--	--	--	--	--	--	--	--	--	**2.22E-04**	**2.07E-04**	1.54E-05	NC	NC	NC

Notes:
Dose and Risk from Appendix V tables. Hazard Index from Table 6-14.
Bolded values exceed the target dose of 25mremr/yr, the target risk of 1x 10 $^{-4}$, or the target hazard index of 1.
Soil is surface soil for juvenile trespasser and on-site worker and total soil forconstruction worker and resident receptors.
EU = Exposure Unit
mremr/yr = millirem per year
-- = Media was not sampled or doesn't exist in this exposure unit.
NA = Not applicable; the receptor is assumed to not be exposed to this media.
NC = Not Calculated; this calculation is not performed for this receptor at this year.

TABLE V4-4
PRELIMINARY REMEDIATION GOALS ESTIMATED FOR CONSTRUCTION WORKERS
REMEDIAL INVESTIGATION FORMER GUTERL SPECIALTY STEEL CORPORATION FUSRAP SITE
LOCKPORT, NEW YORK

| Medium | Units | Year | Parameter | DSR (mrem/yr)/unit | RSR (pCi/g)$^{-1}$ | Dose PRG (25 mrem/yr) | Risk PRG (1E-04) | PRG Exceedances[a] | | |

APPENDIX F

Groundwater Modeling Report

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

Feasibility Study Report

Appendix F
Groundwater Modeling Report

Former Guterl Specialty Steel Corporation
Formerly Utilized Sites Remedial Action Program Site
Lockport, New York

Prepared for:

U.S. Army Corps of Engineers
Buffalo District

September 2018

APPENDIX F
GROUNDWATER MODELING REPORT

Table of Contents

LIST OF TABLES IV
LIST OF FIGURES V
LIST OF ATTACHMENTS VII
ACRONYMS AND ABBREVIATIONS VIII
1.0 INTRODUCTION 1-1
1.1 Modeling Purpose and Objectives 1-1
1.2 Scope of Work 1-2
1.3 Organization 1-2
2.0 SITE SETTING 2-1
2.1 Site Location 2-1
2.2 Background 2-1
2.3 Climatology and Meteorology 2-2
2.4 Physiography 2-3
2.5 Surface Water Hydrology 2-3
2.6 Geology 2-4
2.7 Hydrogeology 2-5
3.0 CONCEPTUAL SITE MODEL AND ASSUMPTIONS 3-1
3.1 Conceptual Model 3-1
3.1.1 Groundwater Flow 3-1
3.1.2 Uranium Migration 3-1
3.2 Modeling Assumptions 3-4
4.0 MODEL CODE SELECTION 4-1
4.1 Soil to Groundwater Leaching Model Code 4-1
4.2 Flow Model Code 4-2
4.3 Uranium Transport Code 4-4
5.0 SOIL LEACHING MODEL 5-1
5.1 Approach 5-1
5.2 Model Inputs 5-2

5.2.1 Compartment Geometry 5-2
5.2.2 Soil Physical Properties 5-3
5.2.2.1 Bulk Density 5-3
5.2.2.2 Effective Porosity 5-3
5.2.2.3 Soil Pore Disconnectedness Index 5-3
5.2.2.4 Intrinsic Permeability 5-4
5.2.3 Chemical Properties 5-4
5.2.3.1 Molecular Weight 5-5
5.2.3.2 Water Solubility 5-5
5.2.3.3 Distribution Coefficient Kd 5-5
5.2.4 Climate Data 5-6
5.3 Model Results 5-6
5.3.1 No Action Scenario 5-6
5.3.2 Soil Excavation to the Soil GW-PRG Scenario Model 5-7
5.3.3 Soil Excavation to the Soil CW-PRG Scenario Model 5-8
6.0 GROUNDWATER FLOW MODEL 6-1
6.1 Groundwater Flow Model Setup 6-1
6.1.1 Delineation and Discretization of Spatial Domain 6-1
6.1.2 Layer Thickness 6-1
6.1.3 Hydrogeologic Properties 6-2
6.1.3.1 Hydraulic Conductivity 6-2
6.1.3.2 Hydraulic Conductivity Anisotropy 6-3
6.1.3.3 Groundwater Recharge 6-3
6.1.3.4 Hydraulic Head Distribution 6-4
6.1.4 Establishment of Boundary Conditions 6-4
6.1.5 Groundwater Extraction 6-5
6.2 Calibrated Model Description 6-5
6.3 Evaluation of Model Calibration 6-5
6.3.1 Statistical Evaluation 6-5
6.3.2 Groundwater Flow Patterns 6-7
6.3.3 Evaluation of Systematic Bias 6-7
6.3.4 Sensitivity Analysis 6-7
7.0 REMEDIAL ALTERNATIVES MODEL 7-1
7.1 Modeling Procedures and Input Parameters 7-1
7.2 Alternative Analysis Modeling Results 7-3
7.2.1 No Action 7-4
7.2.2 Soil Excavation to CW-PRG, Monitored Natural Attenuation in Groundwater, LUCs 7-5

7.2.3 Soil Excavation to GW-PRG, Monitored Natural Attenuation in Groundwater, LUCs 7-5
7.2.4 Soil Excavation to CW-PRG, Hydraulic Control of Uranium Plume in Groundwater 7-6
7.2.5 Soil Excavation to GW-PRG, Groundwater Extraction Using Vertical Wells and Rubblized Trench 7-7
7.3 Modeling Limitations and Uncertainties 7-8
7.3.1 Site Boundary Soil Uncertainty 7-9
7.3.2 Numerical Modeling Uncertainty 7-9
8.0 CONCLUSIONS 8-1
9.0 REFERENCES 9-1

List of Tables

Table	Title
5-1	Compartment Geometry for SESOIL Modeling
5-2	Soil Input Parameters for SESOIL Modeling
5-3	Chemical Input Parameters SESOIL Modeling
5-4	SESOIL Source Terms for Area 1 - No Action Scenario
5-5	SESOIL Source Terms for Area 2 - No Action Scenario
5-6	SESOIL Source Terms for Area 3 - No Action Scenario
5-7	SESOIL Source Terms for Area 4 - No Action Scenario
5-8	SESOIL Source Terms for Area 5 - No Action Scenario
5-9	Leachate Concentrations Predicted by SESOIL Model – No Action Scenario
5-10	SESOIL Source Terms for Area 1 - Soil Excavation to GW-PRG Scenario
5-11	SESOIL Source Terms for Area 2 - Soil Excavation to GW-PRG Scenario
5-12	SESOIL Source Terms for Area 3 - Soil Excavation to GW-PRG Scenario
5-13	SESOIL Source Terms for Area 4 - Soil Excavation to GW-PRG Scenario
5-14	SESOIL Source Terms for Area 5 - Soil Excavation to GW-PRG Scenario
5-15	Leachate Concentrations Predicted by SESOIL Model – Soil Excavation to GW-PRG Scenario
5-16	SESOIL Source Terms for Area 1 - Soil Excavation to CW-PRG Scenario
5-17	SESOIL Source Terms for Area 2 - Soil Excavation to CW-PRG Scenario
5-18	SESOIL Source Terms for Area 3 - Soil Excavation to CW-PRG Scenario
5-19	SESOIL Source Terms for Area 4 - Soil Excavation to CW-PRG Scenario
5-20	SESOIL Source Terms for Area 5 - Soil Excavation to CW-PRG Scenario
5-21	Leachate Concentrations Predicted by SESOIL Model – Soil Excavation to CW-PRG Scenario
6-1	Calibrated Flow Model Input Parameters
6-2	Calibrated Flow Model Hydraulic Conductivities
6-3	Flow Model Calibration Residuals
6-4	Flow Model Sensitivity Analysis
7-1	Feasibility Study Alternative Analysis Modeling Input Parameters
7-2	Feasibility Study Alternative Analysis Results
7-3	Flow Rates for Groundwater Extraction with Vertical Wells Alternative
7-4	Flow Rates for Groundwater Extraction with Vertical Wells and Rubblized Trench Alternative

List of Figures

Figure	Title
1-1	Site Plan
2-1	Geologic Cross-Section across the Site - Landfill Area to Erie Canal
2-2	Potentiometric Surface Map - Shallow Wells
2-3	Potentiometric Surface Map - Deep Wells
3-1	Revised Site Conceptual Model
3-2	Relationship between Total Uranium in Groundwater and In Soil Column
6-1	Groundwater Model Area of Interest
6-2	Calibrated Model Grid and Boundary Conditions for Shallow Groundwater (Layer 1)
6-3	Calibrated Model Grid and Boundary Conditions for Deep Groundwater (Layer 2)
6-4	Calibrated Model Grid and Boundary Conditions for Layer 3
6-5	Calibrated Model Hydraulic Conductivity Zones
6-6	Calibrated Model Groundwater Elevation Contours for Shallow Groundwater
6-7	Calibrated Model Groundwater Elevation Contours for Deep Groundwater
6-8	Scatter Plot Showing Relationship between Observed and Modeled Groundwater Elevations
7-1	Uranium Fate and Transport Modeling Approach for No Action Alternative Evaluation
7-2	Uranium Fate and Transport Modeling Approach for MNA Alternative Evaluation
7-3	Uranium Fate and Transport Modeling Approach for Groundwater Recovery based Alternatives Evaluation
7-4	Uranium Fate and Transport Modeling Approach for Soil Removal to Construction Worker Standards
7-5	Alternative G-1 – No Action Plume Prediction Shallow Aquifer
7-6	Alternative G-1 – No Action Plume Prediction Deep Aquifer
7-7	Alternative G-2 – Construction Worker PRG and MNA Shallow Aquifer
7-8	Alternative G-2 – Construction Worker PRG and MNA Deep Aquifer
7-9	Alternative G-3 – Groundwater Protection PRG and MNA Shallow Aquifer
7-10	Alternative G-3 – Groundwater Protection PRG and MNA Deep Aquifer
7-11	Alternative G-4 – Construction Worker PRG, Rubblized Trench, and Pumping Wells - Shallow Aquifer

7-12 Alternative G-4 – Construction Worker PRG, Rubblized Trench, and Pumping Wells - Deep Aquifer

7-13 Alternative G-5 – Groundwater Protection PRG, Rubblized Trench, and Pumping Wells - Shallow Aquifer

7-14 Alternative G-5 – Groundwater Protection PRG, Rubblized Trench, and Pumping Wells - Deep Aquifer

List of Attachments

Attachment	Title
A	Uranium Trend Analysis
B	In Situ Transducer Data Analysis
C	Uranium Plume Flux Analysis
D-1	SESOIL Model Input/Output – No Action – Soil Area 1
D-2	SESOIL Model Input/Output – No Action – Soil Area 2
D-3	SESOIL Model Input/Output – No Action – Soil Area 3
D-4	SESOIL Model Input/Output – No Action – Soil Area 4
D-5	SESOIL Model Input/Output – No Action – Soil Area 5
E-1	SESOIL Model Input/Output – GW-PRG Soil Excavation Scenario – Soil Area 1
E-2	SESOIL Model Input/Output – GW-PRG Soil Excavation Scenario – Soil Area 2
E-3	SESOIL Model Input/Output – GW-PRG Soil Excavation Scenario – Soil Area 3
E-4	SESOIL Model Input/Output – GW-PRG Soil Excavation Scenario – Soil Area 4
E-5	SESOIL Model Input/Output – GW-PRG Soil Excavation Scenario – Soil Area 5
F-1	SESOIL Model Input/Output – CW-PRG Soil Excavation Scenario – Soil Area 1
F-2	SESOIL Model Input/Output – CW-PRG Soil Excavation Scenario – Soil Area 2
F-3	SESOIL Model Input/Output – CW-PRG Soil Excavation Scenario – Soil Area 3
F-4	SESOIL Model Input/Output – CW-PRG Soil Excavation Scenario – Soil Area 4
F-5	SESOIL Model Input/Output – CW-PRG Soil Excavation Scenario – Soil Area 5
G	SESOIL Model Native Files
H	Groundwater Flow and Transport Model Native Files

Acronyms and Abbreviations

µg/L	micrograms per liter
3-D	3-dimensional
ac	acre
AEC	Atomic Energy Commission
AGC	Army Geospatial Center
ANL	Argonne National Laboratory
bgs	below ground surface
$CaMgCO_3$	Calcium Magnesium Carbonate
CB&I	CB&I Federal Services LLC
cm	centimeter
cm^2	square centimeters
CSM	conceptual site model
CW	Construction Worker
DCGLw	derived concentration guideline level, wide area
DCGLemc	derived concentration guideline level, elevated measurement exposure
DGI	Data Gap Investigation
EPM	equivalent porous media
FS	Feasibility Study
ft	foot/feet
ft^2	square feet
g/cm^3	grams per cubic centimeter
GHB	General Head Boundary
GMS	Groundwater Modeling System
GW	Groundwater
gpm	gallons per minute
Guterl Site	Guterl Specialty Steel Corporation Site
ha	hectare
Kd	distribution coefficient
km	kilometer
L	liter or length
lbs	pounds
lbs/ft^3	pounds per cubic foot
m	meter
M	mass

MAE	Mean Absolute Error
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MCL	maximum contaminant level
ME	Mean Error
mg/kg	milligrams per kilogram
mL/g	milliliters per gram
MNA	monitored natural attenuation
mrem/yr	millirems per year
msl	mean sea level
MT3DMS	Modular Three-Dimensional Transport
NLO	National Lead of Ohio
NYSDEC	New York State Department of Environmental Conservation
ORISE	Oak Ridge Institute for Science and Education
PCG2	Preconditioned Conjugate Gradient 2
pCi/g	picocuries per gram
PRG	preliminary remediation goal
CW-PRG	construction worker PRG
GW-PRG	protection of groundwater PRG
RI	Remedial Investigation
RAOs	remedial action objectives
RMSE	Root Mean Square Error
RQD	rock quality designation
Shaw	Shaw Environmental & Infrastructure, Inc.
SIP	Strongly Implicit Procedure
Site	Guterl Specialty Steel Corporation Site
SOR	Slice-successive Over Relaxation
t	time
Th	Thorium
U	Uranium
USACE	U.S. Army Corps of Engineers
V	volume
VOC	Volatile Organic Compound

1.0 INTRODUCTION

CB&I Federal Services LLC (CB&I), working under contract with the United States Army Corps of Engineers (USACE), Buffalo District Contract Number W912QR-08-D-0013, Delivery Order No. DN03, CB&I Project Number 140416 has prepared this Groundwater Modeling Report for the former Guterl Specialty Steel Corporation Site (Guterl Site or Site) (previously known as the Simonds Saw and Steel Company [Simonds]). The processing of natural uranium metal at the Guterl Site resulted in dust, mill shavings, and associated land disposal that contaminated on-site soils and facility buildings. The contaminated soils act as potential sources of the uranium-impacted groundwater. Groundwater in the shallow, as well as deep, bedrock underlying the Guterl Site has been documented to be impacted with uranium, as described in the Remedial Investigation (RI) Report prepared by Earth Tech/AECOM Inc. for the USACE (2010), the data obtained during subsequent data gap investigation (DGI) performed by Shaw Environmental & Infrastructure, Inc. (Shaw) (USACE, 2012a, b), and supplemental sampling performed by Shaw (USACE, 2013).

Modeling of the fate and transport of uranium in soil and groundwater was conducted first by CB&I and later the USACE. Numerical models were utilized due to the complexity of evaluating the remedial alternatives and their long-term effectiveness in the soil and groundwater in the underlying fractured bedrock. The numerical models provide a comprehensive tool for fate and transport analysis in the soil and the groundwater media.

The USACE updated the modeling analyses and remedial alternatives to focus on a set of technologies that are most implementable at the Guterl Site, specifically the monitored natural attenuation and/or hydraulic control of the uranium plume under two soil (or source) removal alternatives.

1.1 Modeling Purpose and Objectives

The primary objectives of the numerical modeling were to:

- Determine the fate and future extent of uranium plumes in shallow and deep groundwater when subjected to the various groundwater remedial alternatives.
- Determine the effectiveness of an individual remedial alternative in meeting the remedial action objectives (RAOs) identified in the Feasibility Study (FS).
- Quantify the timeframes necessary to meet the RAOs.
- Serve as a decision-making tool for comparative evaluation of remedial alternatives in the FS.

The Guterl Site-specific RAOs presented in the FS include the following that are relevant to the modeling:

- Prevent exposure to uranium and ^{232}Th in soil and buildings; and uranium in groundwater; such that a construction worker does not receive a total effective dose exceeding 25 mrem/yr above background from all pathways.
- Comply with the Maximum Contaminant Level (MCL) of 30 µg/L in groundwater that is a potential source of drinking water.

The Guterl site contains an inactive hazardous waste site (landfill) that is the responsibility of the New York State Department of Environmental Conservation (NYSDEC). Landfill site number 932032 in the NYSDEC inactive landfill database contains Atomic Energy Commission (AEC)-related constituents that do not qualify for remediation under Formerly Utilized Sites Remedial Action Program (FUSRAP) due to responsible party policy (i.e., the Federal Government did not request relocation of waste). However, to create a holistic set of site alternatives, the orphaned AEC-related waste is included in the model to optimize the remedial schedules and decisions associated with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA – 42 U.S.C §1906 et seq.).

1.2 Scope of Work

The scope of the computer modeling included the following:

- Develop a soil leaching model to determine the future impacts to groundwater resulting from the uranium in the soils.
- Develop a flow model incorporating on- and off-site groundwater flow.
- Develop a solute transport model for uranium in groundwater.
- Perform a detailed analysis of the groundwater remediation alternatives using the models.

Computer model input data were derived mainly from existing site data and reports, including the RI Report (USACE 2010), the DGI performed by Shaw (USACE 2012a, b), and supplemental sampling performed by Shaw (USACE 2013).

1.3 Organization

The modeling report is organized as follows:

- *Section 1.0 – Introduction*: provides the purpose, scope, and organization of this report.
- *Section 2.0 – Site Setting*: summarizes site background information from previous investigations and results.

- *Section 3.0 – Conceptual Site Model and Assumptions*: presents a conceptual model of groundwater flow and contaminant migration pathways along with assumptions used for modeling.
- *Section 4.0 – Model Code Selection:* describes the model code selection procedure for each aspect of the fate and transport modeling.
- *Section 5.0 – Soil Leaching Model:* presents the development of soil-to-groundwater uranium leaching model for two preliminary remediation goals (PRGs) for soil:
    - Construction worker dose limit PRG (CW-PRG).
    - Protection of groundwater resources PRG (GW-PRG).
- *Section 6.0 – Groundwater Flow Model:* presents the development of 3-dimensional (3-D) groundwater flow model, including details of model input parameters, setup, and calibration to an appropriate and comprehensive groundwater elevation dataset.
- *Section 7.0 – Remedial Alternatives Model:* presents an evaluation of groundwater remedial alternatives using the uranium transport model. Remedial alternatives evaluated include:
    - No action
    - Monitored natural attenuation (MNA) for both the CW-PRG and GW-PRG.
    - Groundwater recovery using vertical wells and a rubblized trench for both the CW-PRG and GW-PRG.
- *Section 8.0 – Conclusions:* provides the conclusions for this modeling report.
- *Section 9.0 – References:* lists the applicable references cited in this modeling report.
- *Attachment A:* Uranium Trend Analysis
- *Attachment B:* In situ Transducer Data Graphs
- *Attachment C:* Calculation of Groundwater Flux to the Erie Canal
- *Attachment D-1 to D-5:* SESOIL Modeling results for the no-action alternative
- *Attachment E-1 to E-5:* SESOIL Modeling results for the GW-PRG
- *Attachment F-1 to F-5:* SESOIL Modeling results for the CW-PRG
- *Attachment G:* SESOIL Modeling files (CD)
- *Attachment H:* Numerical Modeling files (CD)

2.0 SITE SETTING

An overview of the site setting related to developing the soil leaching, groundwater flow, and uranium transport numerical model is described in the following sections.

2.1 Site Location

The Guterl Site is located in the City of Lockport, New York, approximately 32 kilometers (km) (20 miles) northeast of Buffalo, New York. The approximately 28-hectare (ha) (70-acre [ac]) site is bordered by Ohio Street on the south and east, residential and commercial properties to the north, and New York State Route 93 on the west. The Erie Canal is south-southeast of the Guterl Site boundary (Figure 1-1).

The model area-of-interest consists of the following on-site and off-site delineated on Figure 1-1:

- The 24.5-ha (60.6-ac) ATI Specialty Materials (formerly Allegheny Ludlum Corporation) property, which includes four buildings that were constructed after the termination of Atomic Energy Commission (AEC) activities. This area includes a 3.5-ha (8.6-ac) inactive hazardous waste disposal site owned by ATI Specialty Materials, located in the northwest corner of the Site. This area is a New York State Department of Environmental Conservation (NYSDEC) inactive hazardous waste disposal site (NYSDEC 2003) that will be addressed under FUSRAP to achieve a holistic site remedy for groundwater.

- The 3.6-ha (9-ac) excised property (also known as the "Excised Area") located in the southeast corner of the Site and owned by Guterl Specialty Steel; this area includes nine buildings that existed during the AEC activities.

Off-site areas of interest include 1) the area between the southern property boundary and the Erie Canal and 2) the dolostone quarry area to the east. These areas would receive groundwater flow originating from the Site.

2.2 Background

From 1910 to 1966, the Guterl Site was owned and operated by Simonds to manufacture steel and specialty steel alloys (high-alloy) used in the production of saws and other tools. During World War I and World War II, normal plant operations were suspended and production focused on the armor plating for the U.S. Government under various contracts.

From 1948 to 1956, Simonds performed rolling mill operations on uranium (U) metal and to a much smaller extent, thorium (Th) metal. The U and Th metal operations from 1948 to 1952 were performed under contracts with the New York Operations Office of the AEC (predecessor

to the Nuclear Regulatory Commission). Simonds continued the work from 1952 to 1956 under a subcontract to National Lead of Ohio (NLO). During operations from 1948 through 1956, the AEC was responsible for providing radiological monitoring, safety guidance and assistance, and residue control from the manufacturing operations (residues were returned to the AEC or NLO).

In 1966, Simonds was acquired by the Wallace-Murray Corporation (Delaware Secretary of State 1966). The Wallace-Murray Corporation continued to operate the plant as a specialty steel mill until 1978, when Guterl Specialty Steel Corporation acquired the property (Niagara County Clerk's Department 1978).

In 1982, Guterl Specialty Steel Corporation filed for Chapter 11 bankruptcy protection in the U.S. Bankruptcy Court for the Western District of Pennsylvania (this was changed to a Chapter 7 bankruptcy in 1990). In 1984, using industrial development bonds received through the Niagara County Industrial Development Agency, the Allegheny Ludlum Corporation purchased Guterl Specialty Steel Corporation assets at an auction (U.S. Bankruptcy Court 1984). In 1996, the Allegheny Ludlum Corporation merged with Teledyne Incorporated to form Alleghany Technologies Incorporated (ATI). The Guterl Site, with the exception of the Excised Area, is currently owned and operated by ATI under the name ATI Specialty Materials. ATI currently operates a steel-making and milling facility on the majority of the Site.

The USACE performed a historical aerial photo analysis (USACE 2009) that indicates the inactive hazardous waste disposal site in the northwestern portion of the site became an uncontrolled storage area for site-generated wastes between 1951 and 1958. The waste volume in this area grew between 1958 and 1963, apparently from waste and soil deposition due to site preparation for plant expansion on the western portion of the property. In 1966, the inactive hazardous waste disposal site was much larger and may have accumulated material from other portions of the site during western plant expansion and associated railroad-spur construction for the combined plants. By 1972, the inactive hazardous waste disposal site was approximately the size reflected in 2016, with some minor expansion to the west in 1978.

The 1995 aerial photo indicates the previous western expansion appears reconsolidated eastward to reflect a more rectilinear footprint and waste distribution within the property boundaries, as seen in 2016. These photographic data indicate that AEC-related contamination in the northern portion of the property was partly moved into the inactive hazardous waste disposal site area after AEC-related operations ceased at Guterl. Irrespective of placement, the USACE includes this radioactive residue in the remedial alternative analyses.

2.3 Climatology and Meteorology

The Guterl Site is located in Niagara County, NY, which has a humid, continental-type climate. The region has warm summers with moderate humidity, whereas winters have cold temperatures

and snowfall (including lake effect snow). Niagara County receives an average of 88.6 centimeters (cm) (34.9 inches) of precipitation, including 171.5 cm (67.5 inches) of snowfall per year. Generally, precipitation is distributed evenly throughout the year, although minimum monthly precipitation values are slightly lower during winter.

2.4 Physiography

The topography at the Guterl Site is relatively flat, with a gentle southward slope of approximately 4.7 meters (m) per km [25 feet (ft) per mile] as measured from the north side of the Guterl Site at Route 31 (elevation 189 m [620 ft]) to the south side of the Guterl Site at New York State Route 93 (elevation 181 m [595 ft]).

2.5 Surface Water Hydrology

The Guterl Site does not contain surface water bodies such as ponds or streams; there are no visible surface drainages that connect the Site to the Erie Canal located south-southeast of the Site. Temporary surface water has been observed to occur at the Guterl Site as storm water runoff and ponding from generally undeveloped storm water drainage patterns. Storm-water runoff is observed to move as sheet flow from topographic highs to topographic lows. Areas of standing water are seasonally influenced and are subject to evaporation or infiltration.

The Erie Canal is located approximately 90 m (300 ft) south-southeast of the Guterl Site boundary (Figure 1-1). The surface water elevation of the Erie Canal immediately south of the Guterl Site fluctuates by several feet due to seasonal control of the navigable water level (i.e., water elevation is lowered in winter and raised in summer). The levels are influenced also by the nearby Lockport Locks to the northeast and stages in the Tonawanda Creek to the southwest (Tonawanda Creek provides the headwaters for the Erie Canal).

The normal navigational season extends from April through mid-November, so the water elevation in the Erie Canal is 172.4 m (565.7 ft) above mean sea level (msl) as determined from the gauge reading at Lock 35, which is located approximately 2.82 km (1.75 miles) downstream of the Guterl Site. The canal bottom is 3.0 to 3.7 m (10 to 12 feet) below the water surface, at elevation 169.4 to 168.8 m (555.7 to 553.7 ft) above msl. From mid-November through April, the canal is not navigable and has an average water depth of 0.6 m (2 ft) (Rick Manns, Erie Canal Corp., Telecommunication, September 2011).

In the area of the Guterl Site, the Erie Canal flows from west to east (i.e., from the Niagara River toward Lockport). From April 20 through November 20 the average flow is 0.6 m (2 ft) per second. From November 20 through April 20, the lower Erie Canal is dewatered (below the Lockport Locks between the bulkhead in Pendleton, NY, and the Genesee River) and there is no measurable flow. As a result, the flow from the west (i.e., in the area of the Guterl Site) through the Lockport Locks is also negligible.

2.6 Geology

The subsurface lithology beneath the Guterl Site consists of unconsolidated soil and shallow weathered bedrock that is underlain by fractured dolomite, with the degree of fracturing decreasing with depth. The dolomite grades into shaly (argillaceous) dolomite and eventually is underlain by a shale bedrock unit.

The general hydrostratigraphy underlying the Site, starting from ground surface, is summarized as follows:

- Overburden soil
- Shallow weathered bedrock (shallow groundwater)
- Competent dolostone (no monitoring wells installed)
- First main fracture zone (deep groundwater)
- Shaly dolostone (no monitoring wells installed)
- Rochester Shale (no monitoring wells installed)

The unconsolidated soil derived from glacio-lacustrine deposits, glacial till, and fill material includes native silts and clays with varying amounts of sand and bedrock fragments, which are less permeable than fill material mixed with the native soils. The overburden is 4 to 5 m (13 to 15 ft) thick in the western area of the property and a location north of the north fence. The overburden is less than 1.5 m (5 ft) thick across the remainder of the Guterl Site area.

The shallow weathered bedrock contains numerous horizontal fractures in of the top 6 to 7.6 m (20 to 25 ft) of the dolostone rock that underlies the overburden; vertical and angled fractures were also identified. Many of the fractures were noted to be weathered (e.g., have smooth surfaces). Vugs, calcite-filled vugs, and voids were also found generally in the upper 7.6 to 9.1 m (25 to 30 ft) of bedrock.

The weathered dolostone zone is underlain by less fractured rock that exhibits higher rock quality designation (RQD), which is a rough measure of the degree of jointing or fracture in a rock mass. A RQD value of 80 percent was used to demarcate the boundary between the shallow weathered dolostone and the less fractured dolostone, which occurs at 7.6 to 9.1 m (25 to 30 ft) below ground surface (bgs). The less fractured dolostone (80% < RQD) extends to approximately 19.8 m (65 ft) bgs, but contains a thin permeable zone of horizontal bedding planes from about 10 to 10.7 m (33 to 35 ft) bgs. This discrete zone is considered the deep water bearing unit, or first main fracture zone, that has an overall fracture density that is less than the shallow weathered bedrock water-bearing zone.

Dark gray shaly dolostone was encountered at depths of approximately 18.2 to 19.8 m (60 to 65 ft) bgs. This shaly (or argillaceous) dolostone appears to be a transition deposit that grades into the underlying Rochester Shale Formation that is evident around 24.4 m (80 ft) in depth bgs.

Geologic cross-sections were constructed using subsurface information from well installations on the Guterl Site. The cross-section shown on Figure 2-1 extends from the northwest corner of the Guterl Site across the site boundary to the Erie Canal (northwest to southeast traverse).

A fracture trace analysis was conducted at the Guterl Site and surrounding area by the Army Geospatial Center (AGC) to support characterization of surficial terrain features that may influence pathways for contaminant flow. The AGC report, completed in March 2010 and included in Appendix K of the Final DGI Tech Memo (USACE, 2012b), presents linear features discovered by examination of aerial photographs using imagery at a scale of 1:20,000. Results of the AGC analysis are shown in rose diagrams presented for study areas covering a 0.8-km (0.5-mile) and a 1.6-km (1-mile) radius from the Guterl Site. The 0.8-km (0.5-mile) radius study area rose diagram shows that a majority of fractures are oriented northwest-southeast (i.e., a dip set) and a lesser amount is oriented east-northeast/west-southwest (i.e., a strike set). The 1.6-km (1-mile) radius study area diagram indicates similar orientations with the northwest-southeast and east-northeast/west-southwest components approximately equal.

A view of the fracture trace lineaments found in the Guterl Site area show a general northwest-southeast fracture trace orientation pattern north of the Erie Canal and a general northeast-southwest orientation south of the Canal. Larger scale lineaments can be observed and are correlated with a northwest-southeast re-entrant on the Niagara Escarpment that leads directly across the Guterl Site. This larger scale fracture set appears to be influencing groundwater flow and uranium transport towards the Erie Canal, as discussed in Sections 2.7 and 3.1.2.

2.7 Hydrogeology

Groundwater at the Guterl Site and surrounding areas flows within overburden and bedrock formations. Groundwater flows through the shallow weathered bedrock (shallow groundwater) and in the first main fracture zone (deep groundwater) before discharging to the Erie Canal. The possibility of significant groundwater flow under the Canal bottom or vertically into the deeper dolostone and shaly dolostone units is low, as exemplified by the sparseness of fracture zones in deep rock cores (>24 m or >80 ft) and the significant decrease (about ten-fold) in uranium concentrations between the shallow and deeper water-bearing zones (i.e., vertical transport is limited).

The groundwater table is fairly shallow and is encountered at depths ranging from 1 m (3 ft) bgs to 3.2 m (10.5 ft) bgs. The shallow bedrock potentiometric surface map shows a generally south to southeasterly flow direction, with the highest groundwater elevations in the northern area of

the Guterl Site (Figure 2-2). A groundwater divide oriented northwest to southeast that originates in the northwestern area of the Site is apparent. West of the divide, the groundwater flow direction is towards the quarry due to operational dewatering in the quarry. South and east of the divide, groundwater flow is to the southeast towards the Erie Canal.

Deep groundwater wells are installed in the first main fracture zone and exhibit water levels that range from 1.0 to 10.8 m (3.3 to 35.4 ft) bgs; these levels are more variable than in the shallow bedrock. The deep groundwater shows a similar pattern to the shallow groundwater with an apparent general groundwater flow direction to the southeast towards the Canal and a westerly groundwater flow component towards the quarry. These combined datasets indicate that the northwest to southeast fracture set (dip set) that appears crossing the site provides some preferential hydraulic control or pathway in the subsurface. This is exemplified by the minimal southwesterly dispersion of the plume towards the quarry, along with seeps and ice falls that indicate preferential discharge from the rock exposed in the Erie Canal.

Vertical hydraulic gradients between the shallow and deep groundwater exist at some locations; at most locations the gradients show a slight downward flow component or are near coincident (magnitude less than 0.003 m/m (0.01 ft/ft) is considered near coincident).

Hydraulic conductivity values obtained for the shallow bedrock wells range from 8.5×10^{-6} cm/sec (0.024 ft/day) at MW-705D to 7.7×10^{-2} cm/sec (218 ft/day) at MW-3. Hydraulic conductivity values obtained for the deep bedrock wells range from 3.2×10^{-7} cm/sec (0.0009 ft/day) at MW-711DD to 1.5×10^{-2} (41.4 ft/day) at MW-712DD. The geometric mean hydraulic conductivities for shallow and deep wells are 3.5×10^{-3} cm/sec and 3.5×10^{-4} cm/sec (10 ft/day and 1 ft/day), respectively. An evaluation of the measured hydraulic conductivity values for the overburden and the shallow bedrock (see USACE 2012b, Figures 4-14 and 4-15) indicates the lack of trends or patterns in the distributions of hydraulic conductivities across the modeled area. However, the USACE expects the larger fracture set that crosses the site to have higher permeability, which was rendered in the groundwater flow model, as discussed in Section 3.

3.0 CONCEPTUAL SITE MODEL AND ASSUMPTIONS

3.1 Conceptual Model

Site characterization data collected during the RI and the DGI were used to develop a revised conceptual site model (CSM) of the Guterl Site, as presented on Figure 3-1. The CSM is a non-numeric model that consolidates the geologic, hydrologic, analytical, and surface-water data into a unified interpretation of site conditions.

3.1.1 Groundwater Flow

The CSM shows that a portion of the precipitation that falls as rain and snow infiltrates into the ground and recharges the groundwater system before discharging primarily into the Erie Canal; secondary discharge areas include the quarry and possibly the deeper dolostone overlying the Rochester Shale Formation. The remainder of the precipitation is lost to the atmosphere through the processes of evaporation and transpiration through vegetation, or is directed as surface water runoff towards the Erie Canal.

Seeps have been observed along the northern rock face of the Erie Canal at elevations greater than the base of the shallow weathered bedrock zone, indicating that groundwater from the shallow weathered bedrock is discharging to the surface as seeps. From mid-November through April, the Canal is not navigable since water elevations are 3 to 3.7 m (10 to 12 ft) lower than the navigable elevations maintained from May through mid-November. During the winter period, ice falls can be seen along the canal walls, most emphatically where the seeps are observed in the summer, which appear coincident with the lineament-aligned fracture set that crosses the site.

Groundwater elevation data, the associated flow directions, and the elevation of the first fracture zone together indicate that the deep water-bearing zone also discharges to the Erie Canal. Potential pathways underneath the Canal bottom, or possibly vertically into the deeper shaly dolostone unit have not been determined. However, based on the observed decrease in fracture density with depth (USACE 2010, 2011), which corresponds to a decrease in hydraulic conductivity and transmissivity of the bedrock, along with lower uranium concentrations with depth, site-related uranium impacts are not expected to exceed drinking water standards in the lower shaly dolostone or deeper bedrock units.

3.1.2 Uranium Migration

The processing of natural uranium metal at the Guterl Site resulted in dust, mill shavings, acid-bath fluids, and associated land disposal that contaminated on-site soils and facility buildings; these are the potential sources of the uranium-impacted groundwater. Uranium subsequently leached into groundwater and developed the plume observed below the Site. Uranium transport from the Site involves two major mechanisms:

- Leaching of uranium from contaminated fill and native soils to groundwater
- Groundwater transport of dissolved uranium

It is expected that the residual uranium in soil will continue to act as a source to the groundwater plume for a long time (hundreds of years) as the infiltration of precipitation recharges the groundwater. Groundwater in the shallow, as well as deep, wells within the dolostone is documented to be impacted with uranium.

Uranium contamination at the Site is typically present as uranium dioxide (UO_2) or triuranium octoxide (U_3O_8) in soils; UO_2 slowly converts to U_3O_8 at ambient air temperatures (Argonne National Laboratory [ANL], undated). Uranium in UO_2 is present in the reduced, tetravalent (U^{4+}) form, which has exceedingly low solubility in water (approximately 1×10^{-26} µg/L at pH 7). Uranium in the oxidized U_3O_8 state is present as both U^{4+} and U^{6+} valence states; this is written stochastically as $(2U^{6+})U^{4+}O_8$. U_3O_8 also is known for low solubility in water, yet can vary with redox-sensitive species (e.g., iron and manganese), pH, calcium carbonate concentrations, and humic substances. Aqueous chemistry variations can increase the U^{6+} solubility more readily than U^{4+} and produce uranium concentrations that exceed the MCL of 30 µg/L. Carbonate ions, in particular, form complexes with uranium that increase its solubility and mobility. Since the Lockport Dolostone is a $CaMgCO_3$ (Calcium Magnesium Carbonate) based Silurian bedrock, oxidized uranium will speciate into mobile (anionic) uranyl-carbonate in the aquifer (USACE 2010, Kumar 2011, Frederick et al. 2012, Frederick et al. 2015).

Annual groundwater sampling conducted since 2009 produced results consistent with previous RI sampling, which shows natural isotopic signatures occur in a mostly dissolved state. Detailed analysis presented in the Final DGI Tech Memo (USACE, 2012b) confirmed that the uranium isotope ratios are consistent with naturally occurring uranium (^{234}U and ^{238}U are present at equal concentrations by activity), indicating the uranium processed at the site was neither enriched nor depleted. Comparison of filtered and unfiltered total uranium results from the DGI samples indicates most of the uranium present is dissolved; approximately 98 percent of the total uranium was in the dissolved form in the samples collected (i.e., the uranium ratio between field filtered (0.45 micron) and unfiltered samples is 0.98) (Frederick et al. 2012).

The mobility of uranium in groundwater is most sensitive to pH, redox conditions, and the concentrations of carbonate, which is a strong complexing agent for the U^{6+} form of uranium. Geochemical conditions in the aquifer indicate total uranium will remain in a soluble form at all locations investigated. Natural redox conditions do not favor uranium precipitation (USACE, 2012b).

The on-site uranium plume exhibits a steady-state condition, with only one monitoring well within the plume showing an upward trend. The monitoring well, MW-24, had a significant

upward trend with concentrations that increased from 5.49 to 35.08 µg/L in the four successive samples during the DGI (USACE, 2012b). Since 2007, 30 wells that have been sampled four or more times, so a re-calculation of the Mann-Kendall trends was performed to determine if the uranium concentrations are stable, increasing, or decreasing (Attachment A). The results indicate the following:

- 12 monitoring wells show Increasing or Probably Increasing Trends (23%),
- 32 monitoring wells show Stable or No Trends (62%), and
- 8 monitoring wells show Decreasing or Probably Decreasing Trends (15%).

The figures in Attachment A show the spatial distribution of the uranium trends. The shallow groundwater shows a Stable plume over the last 9 years, with minor lateral dispersion (seen as increasing trends) along the eastern and western periphery of the plume. This normal mechanism was predicted in the groundwater model. The deep groundwater plume is Stable and exemplifies only one well of 12 with an increasing trend (MW-711DD near the Erie Canal). The highest uranium concentrations were detected in groundwater near the center of the Guterl Site.

The uranium plume centerline appears to trend in a northwest to southeast direction across the Guterl Site, which coincides with the regional fractures detected in the area and reported in the RI Report. A significant portion of the uranium-impacted water discharges to the Canal, while the remainder appears to be directed towards the deep water-bearing zone, as is postulated by the much lower concentrations in the deeper zone. Figure 3-2 shows the relationship between total uranium plumes in the shallow and deep groundwater to the presence of uranium in the overlying unsaturated soil.

The uranium plumes are defined by the total groundwater uranium concentrations exceeding the 30 µg/L MCL. Five general soil areas exhibit uranium concentrations sufficiently high to act as potential sources of uranium to the underlying groundwater. Infiltration from precipitation leaches a fraction of the soil-based uranium, which has created a uranium plume in the shallow groundwater that is approximately 15.7 ha (38.7 ac) in area. Due to vertical hydraulic gradients in portions of the Guterl Site, a fraction of the uranium mass is being gradually transferred from the shallow to the deep groundwater, possibly via the regional lineament and associated vertical fracturing. The deep groundwater plume is approximately 7.3 ha (18.0 ac) in size and exhibits concentrations that can be about an order of magnitude lower that the shallow plume.

Attachment B exhibits in situ transducer data that indicate the positive response of the shallow zone to precipitation events, where recharge through soils increase water levels and specific conductance due to the leaching of both natural metals and uranium from soils. After precipitation-based recharge subsides and water levels decline, the specific conductance declines as the groundwater disperses the dissolved solids. The transducer data also show the lag time

between the temperature responses between the shallow and deep groundwater, where a lag of three (3) months is common and provides insight to the hydraulic separation of the layers. These data indicate that MNA is an effective technology (i.e., the aquifer can disperse the plume), in combination with other GRAs (e.g., soil removal), to achieve RAOs over an extended period of time.

Attachment C presents a uranium flux analysis for the downgradient edge of the plume before it migrates off site. The calculation indicates that an average concentration that leaves the site is 25.7 µg/L total uranium.

3.2 Modeling Assumptions

The following assumptions were used for modeling the site conditions:

- Flow in the shallow and deep groundwater is analogous to equivalent porous media (EPM). The EPM approach treats the fractured rock system as if it were an unconsolidated porous medium; to best represent flow velocities common to fractured rock systems, porosity variables are reduced in the model.
- Vertical fractures (via lineament trends) within the EPM can be modeled as highly transmissive (more permeable) zones within the rock.
- A steady-state flow model is sufficient for use with a transient-state contaminant-transport model.
- The total simulation time for each of the FS alternatives will not exceed 1,000 years, which is sufficient to allow assessment of the groundwater exposure pathway(s).
- The evaluation of elemental (total) uranium will be sufficient for evaluation of groundwater impacts.
- Given that the half-life of the dominant uranium isotope ^{238}U is approximately 4.47 billion years and the modeling timeframe is 1,000 years, evaluation of radioactive decay of uranium and fate and transport of daughter products is not necessary.
- The August 3, 2011 groundwater-elevation data can be used to calibrate the flow model since this is the most complete dataset for the model domain. The DGI supplemental report evaluated potentiometric surfaces over the duration of a year, and results indicate that the dominant flow directions and gradients are consistent over the four seasons, even though the groundwater elevations change.
- There are no known groundwater extraction wells currently operating in the area that would affect the transport of uranium in the model domain, with the exception of dewatering operations at the quarry to the west of the Site. The quarry dewatering

appears to influence groundwater flow directions in the western part of the Site and was simulated using drain cells in the model.

4.0 MODEL CODE SELECTION

Code selection is an important step in modeling. It essentially consists of matching the modeling needs of the project and known hydrogeologic site conditions to the key characteristics or capabilities of existing computer codes. The selected code should possess essential characteristics or capabilities to effectively address the problem to be answered while representing known site conditions.

Computer modeling software that could accurately and efficiently simulate groundwater, the leaching of uranium from soils to groundwater, and the fate and transport of uranium in groundwater at the Guterl Site were selected. The software selected is flexible and expandable for future applications not covered by the present modeling objectives. To support the development of the preliminary remediation goal (PRG) for uranium, the vadose zone contaminant leaching model SESOIL (Bonazountas and Wagner 1984) was used to simulate the effects of residual uranium soil contamination on shallow groundwater. The groundwater modeling software package selected for application at the Guterl Site is Groundwater Modeling System (GMS) (Aquaveo 2013, version 9.0.5), a graphical user interface program that supports various flow and transport codes.

4.1 Soil to Groundwater Leaching Model Code

SESOIL is a one-dimensional vertical transport screening-level model for the vadose zone that was developed to simultaneously simulate water transport, sediment transport, and contaminant fate. The model considers seasonal hydrologic changes by using monthly climate data as a major component in the model. Other major inputs to the model are physical soil data and chemical property data, although only one chemical can be considered at a time.

The SESOIL model uses compartment geometry, where "compartments" of soil consist of cells extending from the surface through the unsaturated zone to the top of the water table. Through these cells, SESOIL runs three separate sub-models: the hydrology, sediment, and pollutant-transport cycles. The hydrologic cycle considers vertical movement only and focuses on the role of soil moisture in the soil compartments. The optional sediment cycle can include soil detachment, transport, and deposition processes at the "ground surface" of the model. The pollutant transport cycle focuses on the various chemical transport and transformation processes that may occur in the soil; this module uses calculated results from the hydrologic and sediment cycles as input. The ultimate fate and distribution of the contaminant is controlled by the processes interrelated by a mass balance equation for each soil compartment that is specified by the user. An iterative procedure is used to solve each equation.

Overall, the model is based on mass balance and equilibrium partitioning of the chemical between different phases; for example, uranium was distributed between a dissolved, pore-water phase and an adsorbed phase based on assigned solubilities and adsorption coefficients, respectively. Outputs can include time-varying constituent concentrations at different soil depths, or contaminant mass flux from the soil column through surface runoff, percolation to groundwater, volatilization, adsorption, or degradation.

The SESOIL code included in the SEVIEW© program (Schneiker 2006) was used for this modeling. This version of the model code allows an evaluation of the leaching over a period of 1,000 years, as compared to 100 years for the original version of SESOIL code.

4.2 Flow Model Code

MODFLOW was selected for modeling the groundwater flow at the Guterl Site. The software package GMS Version 9.0.5/MODFLOW-2005 was used to develop the input parameters for the groundwater flow model. GMS/MODFLOW provides computer-aided graphics to facilitate the development of the input data and visualize results. Model parameters were input and displayed on a graphical representation of the selected finite-difference grid.

MODFLOW is a modular three-dimensional groundwater flow model developed by the U.S. Geological Survey. The three-dimensional flow model assumes flow through a porous material using constant density and isothermal conditions. The following equation describes this process:

$$\frac{\partial}{\partial x_i}\left(K_{ij}\frac{\partial h}{\partial x_j}\right) - W = S_s\left(\frac{\partial h}{\partial t}\right)$$

Where:

x_i, x_j = principal coordinates of the system (i.e., x, y, and z) which are assumed to be parallel to the major axes of hydraulic conductivity (units of length [L])

K_{ij} = hydraulic conductivity tensor along the principal coordinate axes (units of length over time [L/t])

h = hydraulic head (L)

W = volumetric flux per unit volume and represents sources and/or sinks of water (units of volume per volume over time [1/t])

S_s = specific storage of the porous material (l/L)

t = time (t)

The previous equation describes groundwater flow under non-equilibrium conditions in a heterogeneous and anisotropic medium, provided the principal axes of hydraulic conductivity are aligned with the coordinate directions, in which case, the hydraulic conductivity tensor becomes:

$$K_{ij} = \begin{matrix} Kxx & 0 & 0 \\ 0 & Kyy & 0 \\ 0 & 0 & Kzz \end{matrix}$$

In general, S_s, Kxx, Kyy, and Kzz may be functions of space [$S_s = S_s(x,y,z)$, $Kxx = Kxx(x,y,z)$, etc.] and W may be a function of space and time.

The previous partial differential equation for groundwater flow is suitable for analytical solution techniques only for simple geometries and limiting assumptions. For complicated conditions, including heterogeneous and anisotropic porous media, MODFLOW applies a finite-difference numerical technique. The finite-difference method discretizes a real groundwater system into a network of blocks called "cells." The block-centered, finite-difference formulation places a "node" at the center of each cell where hydraulic heads are calculated by the code. The location of the cells and their nodes are referenced using three-dimensional (i,j,k) indices. The finite difference mesh consists of NROW rows referenced by the first index (i), NCOL columns referenced by the second index (j), and NLAY layers referenced by the third index (k).

MODFLOW provides three main solvers: (1) Strongly Implicit Procedure (SIP), (2) Slice-successive Over Relaxation (SOR), and (3) Preconditioned Conjugate Gradient 2 (PCG2).

The SIP is a method for solving a large system of simultaneous linear equations by iteration. All of the equations for the model grid are solved simultaneously. The SIP solver is very stable and generally converges to a satisfactory solution.

SOR is a method for solving large systems of linear equations by means of iteration. It is implemented in the SOR package by dividing the finite difference grid into vertical slices and grouping the node equations into discrete sets. Each set corresponds to a slice; in every iteration these sets of equations are processed in turn, resulting in a new set of estimated head values for each slice.

The PCG2 solver uses the preconditioned conjugate-gradient method to solve the simultaneous equations produced by the model. Linear and nonlinear flow models may be simulated. Convergence of the solver is determined using both the head change and residual criteria. This solver is best suited to models where certain flow cells are expected to be dewatered. A number

of shallow groundwater cells in the vicinity of the quarry are dry, so the PCG2 solver was used for modeling groundwater flow at the Guterl Site.

4.3 Uranium Transport Code

Solute transport modeling was conducted using the software package GMS/MT3DMS (Modular Three-Dimensional Transport – Multiple Species), which was developed by S. S. Papadopulos & Associates (Zheng 1990) as a multi-phase contaminant fate and transport model. MT3DMS is the most widely used and accepted solute transport model code for use with equilibrium controlled sorption or first-order chemical reactions. The model code is available in the public domain and is coupled with MODFLOW on GMS and other major groundwater modeling platforms.

MT3DMS is a model for the simulation of advection, dispersion, and chemical reactions of dissolved constituents in groundwater systems. The model program uses a modular structure similar to that implemented in MODFLOW. The MT3DMS model uses a mixed Eulerian-Lagrangian approach to the solution of the three-dimensional advective-dispersive-reactive equation in three basic options. The MT3DMS model is intended to be used in conjunction with any block-centered finite-difference flow model (e.g., MODFLOW), and is based on the assumption that changes in the concentration field will not affect the flow field measurably. MT3DMS retrieves the hydraulic heads and the various flow and sink/source terms saved by MODFLOW, automatically incorporating the specified hydrologic boundary conditions.

The partial differential equation describing three-dimensional transport of contaminants in groundwater can be written as follows:

$$\frac{\partial C}{\partial t} = \frac{\partial}{\partial x_i}\left(D_{ij} \frac{\partial C}{\partial x_i} \right) - \frac{\partial}{\partial x_i}(v_i C) + \frac{q_s}{n} C_s + \sum_{K=1}^{N} R_k$$

Where:

- C = concentration of contaminants dissolved in groundwater (units of mass over volume or length cubed [M/L^3])
- t = time (t)
- x_i, x_j = distance along the respective Cartesian coordinate axis (L)
- D_{ij} = hydrodynamic dispersion coefficient (L^2/t)
- v_i = seepage or linear pore water velocity (L/t)
- q_s = volumetric flux of water per unit volume of aquifer representing sources (positive) and sinks (negative) (1/t)
- C_s = concentration of the sources and sinks (M/L^3)

n = porosity of the porous medium (dimensionless)

R_k = chemical reaction (term (M/L^3t)

Assuming that only equilibrium-controlled linear or nonlinear sorption and first-order irreversible rate reactions are involved in the chemical reactions, the previous partial differential equation can be simplified and written as follows:

$$R\frac{\partial C}{\partial t} = \frac{\partial}{\partial x_i}\left(D_{ij}\frac{\partial C}{\partial x_j}\right) - \frac{\partial}{\partial x_i}(v_i C) + \frac{q_s}{\theta}C_s - \lambda\left(C + \frac{\rho_b}{\theta}C'\right)$$

Where:

θ = porosity (dimensionless)

ρ_b = bulk density of the porous medium (M/L^3)

C' = sorbed phase contaminant concentration (M/M)

λ = rate constant of the first-order rate reactions (1/t)

R = retardation factor (dimensionless)

The previous transport equation is linked to the flow equation through the following relationship:

$$v_i = -\frac{K_{ii}}{n} = \frac{\partial h}{\partial x_i}$$

Where:

K_{ii} = principal component of the hydraulic conductivity tensor (L/t)

h = hydraulic head (L)

The hydraulic head is obtained from the solution of the three-dimensional groundwater flow equation presented in Section 4.1.

Processes Simulated in MT3DMS

Advection: Describes the transport of miscible contaminants at the same velocity of groundwater. The advection term usually dominates for many practical problems concerning contaminant transport in groundwater. For advection-dominated problems, the solution of the transport equation is affected to some degree by two types of numerical problems: (1) numerical dispersion caused by truncation error, and (2) artificial oscillation caused by overshoot and undershoot of the solution. The mixed Eulerian-Lagrangian method implemented in the MT3DMS model is virtually free of any of these errors.

Dispersion: In porous media, dispersion refers to the spreading of contaminants over a greater region than would be predicted solely from the groundwater velocity vectors. Dispersion may result from (1) deviations of actual velocity on a micro scale from the average groundwater velocity (mechanical dispersion), and (2) molecular diffusion resulting from concentration variations (i.e., an osmotic gradient). The molecular diffusion effect is generally secondary and negligible compared to the mechanical dispersion effect, and only becomes significant when groundwater velocities are very low. The sum of the mechanical dispersion and the molecular diffusion is termed hydrodynamic dispersion.

Sinks and Sources: Sink and/or source terms in the transport equation represent solute mass dissolved in water entering the simulated domain through sources, or solute mass dissolved in water leaving the simulated domain through sinks. Model sinks or sources may be classified as "distributed" or "point input/output" features. The distributed sinks, or sources, include recharge and evapotranspiration. The point sinks, or sources, include features such as wells, drains, and rivers.

Chemical Reactions: Included in the MT3DMS model are equilibrium-controlled linear or nonlinear sorption and first-order irreversible rate equations (e.g., biodegradation and radioactive decay).

5.0 SOIL LEACHING MODEL

5.1 Approach

The leaching of uranium through unsaturated soil into the groundwater was initially evaluated during the RI using a site-wide SESOIL model; this was refined in the FS by modeling five separate soil areas that have similar physical and concentration profiles that could cause groundwater to exceed the MCL of 30 µg/L. The analyses were used to develop a PRG for the protection of groundwater, or GW-PRG (i.e., residual soil leachate will not affect groundwater), and assess the uranium concentrations in soil that could result in exceeding the exposure risk to construction workers (CW-PRG).

The origin of uranium in groundwater at the Site may be attributed to the following mechanisms:

- The leaching of uranium from the unsaturated (vadose zone) and saturated zone soils to the underlying groundwater, and
- The historical release of uranium-containing wastewater directly to disposal pits and trenches that were in contact with fractures in shallow bedrock, thereby conveying uranium directly to the shallow groundwater.

The historical release of uranium via waste-water discharges contributed to the development of the current uranium plume in Site groundwater. The current and future uranium plumes at the Site are attributed to the leaching of uranium from the unsaturated soil. The plume shapes (shallow and deep zones) are controlled by the alignment of major fractures that serve as preferential flow and contaminant migration pathways, with the ongoing uranium leaching from the soil sustaining the uranium concentrations in the plume over time.

The focus of the SESOIL modeling presented in this report is on the leaching of residual uranium from the soil sources. The deteriorated state of the buildings and roofs allows for the intrusion of rain water and thus the presence of the buildings was not considered as a factor that will restrict the leaching of uranium from soil into groundwater (i.e., the buildings are ignored in the SESOIL and MODFLOW models so recharge is not influenced by them for conservation).

During the RI, a generalized SESOIL was used to conservatively reflect the entire Guterl Site. The contaminated soil area was defined as 6.7 ha (16.6 ac) and the unsaturated soil was divided into an upper 1 m (3.3 ft) thick contaminated zone (considered fill) and a 0.3 m (1 ft) thick lower uncontaminated zone (considered native silty-clay soil) based on a simplified generalization of borings data. Input parameters for soil properties were derived directly or indirectly from site-specific data and generic SESOIL guidance (Bonazountas and Wagner 1984). Since the half-lives for uranium are long, only advection, dispersion, and adsorption were modeled for uranium (i.e., first-order decay was ignored).

The SESOIL simulations for the FS were modified to incorporate additional site-specific geotechnical data and the variability in soil uranium concentrations with location and depth across the Site. SESOIL was used to simulate the leaching of uranium from the five soil areas shown on Figure 3-2 using the measured soil concentrations.

For each of the five soil areas, leachate concentrations were predicted for three scenarios:

- No action – soils are left in place "as is,"
- Soil removal – soils exceeding the PRGs developed for groundwater protection (GW-PRG) are excavated and removed, and
- Soil removal - soils exceeding the PRGs developed for the protection of construction workers (CW-PRG) are excavated and removed.

The Soil GW-PRG is defined as the concentration of uranium in soil that will be protective of groundwater, such that if all soils impacted with uranium greater than this PRG were excavated, and the current groundwater plume was addressed through a separate remedial action over a 30-year time frame, future leaching of uranium from the residual soil would not result in regrowth of a uranium plume greater than the MCL after 30 years of groundwater remedy implementation. Details of development of Soil GW-PRG are provided in Section 5.3.2.

The Soil CW-PRG is defined as the maximum concentration of uranium in soil that will result in acceptable risk of exposure to construction workers from residual radioactivity in soil, after soils impacted with uranium greater than the Soil CW-PRG were excavated. Details of prediction of groundwater impacts from residual soil uranium after removal of soils exceeding the CW-PRG are provided in Section 5.5.5.

5.2 Model Inputs

This section presents a detailed discussion of the SESOIL model input parameters.

5.2.1 Compartment Geometry

In order to develop leachate concentration estimates specific to individual source areas (as compared to the generalized RI model), the FS model divided the existing soil uranium data into five soil source areas. These areas were then vertically divided into subcompartments (or layers) from ground surface to a depth corresponding with the depth to groundwater in the area. Depths to groundwater were averaged from historic and August 2011 measurements at monitoring wells closest to the individual soil areas as shown in Table 5-1. The SESOIL model was assigned four main soil layers that had vertical thicknesses ranging from 15 cm (6 inch) to 60 cm (24 inch). The SESOIL layers were further divided into 15-cm (6-inch) sub layers. Tables 5-1 through 5-6 show the compartment geometry, the SESOIL layers, and sub layers for the five soil areas.

5.2.2 Soil Physical Properties

Subsurface soils at the Site predominantly consist of native soil and fill mixed with reworked soil. The native soils at the Site are described as a combination of a thin, discontinuous glaciolacustrine deposit of silts and clays overlying a thin, discontinuous glacial till composed of silt and clay with sand and bedrock fragments. Due to the extensive reworking of soils at the Site, the majority of subsurface soils reflect a sand and sandy silt mix in terms of properties applicable to movement of water and dissolved contamination.

The soil parameters are discussed in the following subsections and summarized in Table 5-2. Site-specific soil properties were used when available. When site-specific properties were not available, default physical parameters for sand and sandy silt were used.

5.2.2.1 Bulk Density

Bulk density represents the weight of soil materials divided by the soil volume (including pore space). The RI model used a bulk density value of 1.3 grams per cubic centimeter (g/cm^3) (81.2 pounds per cubic feet [lbs/ft^3]) based on results from on-site gamma spectroscopy analysis. This value is on the lower end of the general range for silty soil (1.29 to 1.80 g/cm^3 [80.5 to 112.4 lbs/ft^3]), but falls within the general range for sand (1.18 to 1.59 g/cm^3 [73.7 to 99.3 lbs/ft^3]) (Bonazountas and Wagner, 1984). Geotechnical samples were collected from the soil borings during the DGI and were submitted to the Shaw Geotechnical Testing Laboratory located in Knoxville, Tennessee. Bulk density was measured using the ASTM D2937-10 procedure and results ranged from 1.24 g/cm^3 to 2.08 g/cm^3 (77.4 to 129.9 lbs/ft^3). A value of 1.30 g/cm^3 (81.2 lbs/ft^3) was used in the FS model to reflect the sand/silty sand lithology of the disturbed soils, and to allow sufficient infiltration to accommodate 1.2×10^{-6} cm/sec (15 inches/year) groundwater recharge rate.

5.2.2.2 Effective Porosity

Effective porosity is a measure of the connected pore space in soils that transmit water. The RI model used an effective porosity value of 0.20 based on model guidance, silty clay soil type, and model calibration. Model guidance recommends values for effective porosity to be between 0.20 and 0.40, so the selected value was on the low end of the range of possible inputs. Geotechnical sampling and analysis conducted during the DGI determined an average effective porosity of 0.25 for the site, consistent with what would be expected for the sand/silty sand lithology of the reworked soils and within the range recommended by SESOIL guidance. The average bulk density of 1.30 g/cm^3 (81.2 lbs/ft^3) is indicative of a total porosity value of 0.51, which is probable for a reworked soil. An effective porosity value of 0.25 was used in the FS model.

5.2.2.3 Soil Pore Disconnectedness Index

The soil pore disconnectedness index relates soil permeability to soil moisture content. A value of 4 was used in the FS model based on the default value for a U. S. Department of Agriculture

textural soil class of sand/silty sand (Bonazountas and Wagner, 1984) and adjusted during model calibration.

5.2.2.4 Intrinsic Permeability

Intrinsic permeability is a measure of how easily fluids pass through a porous medium and can be calculated from the hydraulic conductivity of that medium. Geotechnical sampling of undisturbed soil samples collected at MW-600S was performed as part of the RI. A geotechnical evaluation of the data indicates a hydraulic conductivity value of approximately 1 x 10^{-5} centimeters per second (2.8 x10^{-2} ft/day). This value is converted to intrinsic permeability (in cm^2) by multiplying by 1 x 10^{-5}. The intrinsic permeability was further adjusted during calibration so that recharge would more closely match the 1.2 x 10^{-6} cm/sec (15 inches/year) groundwater recharge rate. Table 5-2 provides the adjusted intrinsic permeability values for each of the five soil source areas, which range from 2.8 x 10^{-8} to 5.7 x 10^{-8} cm^2 (3.0 x 10^{-11} to 6.1 x 10^{-11} ft^2). The equivalent adjusted hydraulic conductivity range is 2.8 x 10^{-3} to 5.7 x 10^{-3} cm/sec (8 to 16 ft/day).

5.2.3 Chemical Properties

The behavior of uranium is a function of its physical and chemical properties and the geochemical environment. The chemical-specific input parameters for uranium include molecular weight, water solubility, and the distribution coefficient (Kd). The chemical parameters are discussed in the following subsections and summarized in Table 5-3.

The presence of a non-AEC related volatile organic compound (VOC) plume in groundwater and its impacts on uranium geochemistry were considered. VOCs may locally impact groundwater conditions for a significant timeframe (i.e., create reductive groundwater zones while the contaminant degrades), but would not be as recalcitrant as uranium, which can persist throughout the 1,000-year performance period used in this evaluation (USACE 2012a). Geochemical modeling of the uranium in groundwater indicates that observed pH values (mostly above 7.0) and high carbonate concentrations (controlled by equilibrium with carbonate minerals) requires extremely reducing conditions (negative redox potentials) to reduce the hexavalent form of uranium to the tetravalent form that will precipitate as insoluble oxides. This condition explains the lower uranium concentrations below the excised structures, where the VOC is present in groundwater.

Although moderately reducing conditions exist at some locations (wells), which may include locations with VOCs, the uranium leachate from soil is predicted to remain as fully soluble hexavalent uranium in the groundwater. This is supported by sampling data that show the ratios of filtered to unfiltered uranium results are near unity (1); this indicates uranium is soluble whenever detected versus an adsorbed colloidal (or particulate) form. The conceptual site model assumes that long-term uranium mobility is unimpacted by the existence and/or eventual

degradation of the VOC plume under the excised area. This means the numerical flow and transport model will 1) not impede the advancement of the existing plume via VOC-related geochemical constraints and 2) assume leaching uranium may transport and develop uranium plumes uninfluenced by VOC impacts.

5.2.3.1 Molecular Weight

The default molecular weight of uranium (238 grams/mole) was used.

5.2.3.2 Water Solubility

Using data collected during the DGI, an additional evaluation of water solubility was performed. Using the Geochemist's Workbench geochemical model coupled with the MINTEQA2 thermodynamic database, a water solubility of 100 mg/L was derived for uranium based on site-specific pH, redox potentials, and groundwater compositions (USACE, 2012b). This values was used in the SESOIL model.

5.2.3.3 Distribution Coefficient Kd

The distribution coefficient Kd (or soil-water partitioning coefficient) is the ratio of a chemical's sorbed concentration on soil to the dissolved concentration in pore water. Distribution coefficients can be calculated using either an adsorption or desorption approach. The Kd value used for the RI model was based on laboratory tests of Site soil using adsorption. To calculate an adsorption Kd, water spiked with a high concentration of uranium was introduced to samples of uncontaminated soil from the Site, and the loss of uranium in water that is in contact with soil was used to determine Kd. The RI Kd tests employed a 24-hour batch test method using uranium spiked groundwater of differing concentrations (380 µg/L to 25,665 µg/L) shaken with initially uncontaminated Site soil samples. It may be noted that some of the uranium spike concentrations were as high as 100 times the uranium concentrations measured in Site groundwater. Those tests produced the following results:

- Native uncontaminated soil Kd: 1,247 and 1,452 milliliters per gram (mL/g)
- Contaminated soil/fill Kd: 5 to 97 mL/g
- Lockport Dolostone (gravel-sized grains) Kd: 0.22 mL/g

During the DGI, Kd values were calculated based on laboratory tests using a desorption approach. The set of uranium Kd tests performed during the DGI activities used undisturbed contaminated soil samples obtained during well installations. These soils were exposed to simulated precipitation in the form of uncontaminated synthetic rain water, as used in the Synthetic Precipitation Leach Procedure (EPA Method 1312) via column testing to better simulate actual leaching of uranium from on-site contaminated soils. Eight samples were tested in triplicate and produced Kd values ranging from 1,052 to 95,667 mL/g.

The DGI data produced higher Kd values than several of the RI results, likely because of the different approach utilized and the lower uranium in the more undisturbed soils used for the DGI analysis. The observed conditions in the contaminated soil areas indicate coarser grained material was reworked with native soils to create an apparently more permeable and potentially less adsorptive soil profile that is contributing to the uranium plume.

Consequently, an iterative modeling process of uranium leaching scenarios, coupled with an estimation of dilution in groundwater, established that a soil Kd value of 91 mL/g would generate the current groundwater plume over the last 50 years. It was concluded that a uranium Kd value of 91 mL/g is appropriate to be used in the FS soil leaching model.

5.2.4 Climate Data

As part of the software used for the SESOIL model, nation-wide climatic data are provided for input, including the Lockport 2 NE station. This station is located less than 8 km (5 miles) east of the Site and at a similar elevation of 158 m (518 ft) above msl. The software integrates the appropriate meteorological data from the climatic data records. The input parameters for the climatic data for each month include: temperature, cloud cover, relative humidity, short wave albedo, evapotranspiration, precipitation, storm length, number of storms, and length of rainy season.

5.3 Model Results

SESOIL model predictions are presented in the following sections.

5.3.1 No Action Scenario

The soil, chemical, and climate input parameters described previously were input to the SESOIL models for each of the five soil-source areas. Tables 5-4 through 5-8 present the soil source terms, representing the current (or baseline) concentrations in soil, which were used for soil areas 1 through 5. Soil-data analyses in the Data Gap Analysis Report (USACE, 2012a), the RI Report (USACE 2009), and the Oak Ridge Institute for Science and Education (ORISE) report (ORISE, 1999) were the basis of the input. Tables 5-4a through 5-4e reflect the comprehensive soil database, with the exception of the collocated samples that were analyzed at the on-site field screening laboratory by gamma spectroscopy and also at a fixed analytical laboratory by alpha spectroscopic analysis. For these collocated samples, the off-site alpha spectroscopic analyses were used instead of the gamma spectroscopic analyses.

Model inputs and outputs for each of the five soil area simulations are included in Attachments D-1 through D-5. The native SESOIL files corresponding to these simulations are provided in electronic format as Attachment G. Table 5-9 shows the SESOIL predicted leachate concentrations for each of five soil areas. The leachate concentration (before dilution with groundwater) is expected to exceed the MCL for hundreds of years under current conditions.

The leachate concentrations are expected to peak in the future at the following concentrations and timeframes:

- Soil Area 1: 28,370 µg/L at 265 ± 5 years
- Soil Area 2: 7,682 µg/L at 255 ± 5 years
- Soil Area 3: 5,298 µg/L at 235 ± 5 years
- Soil Area 4: 35,280 µg/L at 15 ± 5 years
- Soil Area 5: 281 µg/L at 235 ± 5 years

The leachate predictions over time will contribute to the groundwater plume, and will be used in Section 8 to model the future groundwater plumes for the No Action remedial alternative.

5.3.2 Soil Excavation to the Soil GW-PRG Scenario Model

The SESOIL model was run separately for each of the five soil source areas using soil profiles that were modified to reflect soil-source removal actions using a preliminary remedial goal for soil that would protect groundwater resources (or Soil GW-PRG) into the future. Based on an iterative set of runs of the soil leaching models and the groundwater model, it was determined a Soil GW-PRG of 11 milligrams per kilogram (mg/kg) total uranium (3.66 picocuries per gram [pCi/g] ^{238}U) would be protective of groundwater.

To reflect this cleanup goal in each soil area, the soil sample data were averaged in 15-cm (6-in) intervals and where average soil activity exceeded the Soil GW-PRG, the soil samples were systematically "excavated" from the database in a highest to lowest manner. These values were then replaced with uranium concentrations reflecting backfill containing background levels of uranium (2.2 mg/kg or 0.74 pCi/g U-238). This method simulates the remediation and backfill of soil with native soils. It was also assumed that all soils overlying the deepest location of the Soil GW-PRG exceedance in each area would be excavated (i.e., cover soils would be removed from deeper impacts).

In each of the 15-cm (6-in) intervals underlying the total excavation depth, there were a number of individual samples that remained and exceeded the Soil GW-PRG. However, the average of the uranium concentrations in the layers was less than the Soil GW-PRG. The uranium residuals in the intervals below the excavation depths, the residuals in surrounding soil, and the background level total uranium in the backfill were then re-modeled using SESOIL to assess the long-term leaching of uranium and the resulting longevity of the groundwater plume. The vertical averaging of soil intervals with no data and inclusion of background uranium adds conservatism to the "remediated" source-term estimations.

Tables 5-10 through 5-14 present the soil source terms for the soil excavation to the Soil GW-PRG scenario that were used for soil areas 1 through 5. Model inputs and outputs for each of the five soil area simulations are included in Attachments E-1 through E-5. The native SESOIL files corresponding to these simulations are provided in electronic format as Attachment G. Table 5-15 shows the SESOIL predicted leachate concentrations for each of the five soil areas. The leachate concentration (before dilution with groundwater) is expected to exceed the MCL for over 200 years. The leachate concentrations are expected to peak in the future at the following concentrations and timeframes:

- Soil Area 1: 77 µg/L at 25 ± 5 years
- Soil Area 2: 95 µg/L at 15 ± 5 years
- Soil Area 3: 36 µg/L at 140 ± 5 years
- Soil Area 4: 37 µg/L at 25 ± 5 years
- Soil Area 5: 37 µg/L at 25 ± 5 years

The leachate predictions over time will contribute to the groundwater plume and will be used in Section 8.0 to model the future groundwater plumes after the soil excavation is complete. A portion of Soil Area 2 and most of Area 5 fall within the NYSDEC inactive hazardous waste disposal site footprint, as delineated on Figure 3-2, but will still be included in the remedial alternatives to address the site holistically under FUSRAP and ensure success of all soil alternatives.

It may be noted that the configurations of the groundwater plumes are controlled partly by the alignment of major fractures or lineaments that serve as preferential flow and contaminant migration pathways in the bedrock. Uranium leaching from soil sustains the plumes, but may not directly correlate to groundwater concentrations immediately underneath the source areas due to dilution and dispersion in the aquifer.

5.3.3 Soil Excavation to the Soil CW-PRG Scenario Model

The preliminary remedial goal for soil to protect the construction worker from radiation exposure (or Soil CW-PRG) was developed during the RI using the RESRAD model (ANL, 2001). As described in the FS, the Soil CW-PRG is 23 pCi/g ^{238}U (69 mg/kg total uranium). The CW-PRG is based on a total dose of 20 millirem per year (mrem/year) for all complete pathways, which allows for an additional 5 mrem/yr to come from consumption of on-site drinking water with uranium concentrations limited to 30 µg/L. This ensures the combined pathway dose remains limited to 25 mrem/yr under 10 CFR 20. The Soil CW-PRG is based on the minimum residual radioactivity for individual isotopes converted to total uranium by including contribution to dose from ^{234}U, ^{235}U, and ^{238}U, assuming natural abundance of uranium isotopes (in ratio of ^{234}U:

^{235}U: ^{238}U 1:0.046:1). ^{238}U can be used as surrogate for total uranium derived concentration guideline level distributed over a wide area (DCGLw) by multiplying the total uranium DCGLw by ^{238}U's activity fraction (0.489).

The evaluation of soil for the protection of construction workers also incorporates the sum of fractions (SOR) rule, so that the dose limit is not exceeded when more than a single radionuclide is present in soils. According to the SOR rule, a SOR greater than 1 represents unacceptable exposure and a SOR less than or equal to 1 represents acceptable exposure; if there are multiple radionuclides in the medium being evaluated, the sum of the ratios for all of the radionuclides must also be less than or equal to 1. For the construction worker evaluation, SOR values were generated using the Soil CW-PRGs developed by USACE for ^{238}U and for ^{232}Th.

Tables 5-16 through 5-20 present the soil source terms for the soil excavation scenarios that were used for soil areas 1 through 5. In each soil area, the soil sample data were averaged in 6-inch intervals, and if the average soil activity exceeded either the Soil CW-PRG and/or the SOR was greater than 1, the soil was excavated and replaced with backfill that was assigned background-level uranium (2.22 mg/kg; 0.74 pCi/g) (as discussed in Section 5.3.2.). It was assumed that all soils overlying the deepest location of a Soil CW-PRG exceedance in each area would be excavated, so that after excavation the average of each 6-inch interval was not to exceed the Soil CW-PRG of 23 pCi/g of ^{238}U.

The soil excavation to Soil CW-PRG model also used 15-cm (6-in) increments for SESOIL soil concentrations. In each of the intervals underlying the total excavation depth, some individual samples remained and exceeded the Soil CW-PRG. However, the average of the uranium concentrations in the layers was less than the Soil CW-PRG. The residual total uranium in the intervals below the excavation depth, surrounding the remedial area, and in the background-level backfill were modeled using SESOIL. The results predicted leachate concentrations that contribute to the long-term uranium input to the groundwater uranium plume (i.e., under the CW-PRG, more uranium remains in the soil and leaches at greater concentrations for a longer period that the GW-PRG).

The vertical averaging method to create soil-profile input where data do not exist adds conservatism to the source-term estimation, and presents a worst-case scenario. This is especially important in soil area 3, where highly impacted 6-inch soil increments are used to populate the adjacent layers without data. For example, Table 5-18 shows the 30 to 36 inch bgs interval averaging 67.09 mg/kg total uranium, which includes high-concentration residuals, and thus increases the estimated concentration of total uranium to 34.14 mg/kg in underlying 18-inches of soil (36 to 48 inch bgs), where no samples were collected.

The SESOIL model was run separately for each of the five soil source areas using the scenario where soil-source removal to the Soil CW-PRG has taken place. Model inputs and outputs for each of the five soil area simulations are included in Attachments F-1 through F-5. The native SESOIL files corresponding to these simulations are provided in electronic format as Attachment G. Table 5-21 shows the SESOIL predicted leachate concentrations for each of the five soil areas after excavation using the Soil CW-PRG. The leachate concentration (before dilution with groundwater) is expected to exceed the MCL for over 490 years. The leachate concentrations are expected to peak in the future at the following concentrations and timeframes:

- Soil Area 1: 71 µg/L at 15 ± 5 years
- Soil Area 2: 306 µg/L at 25 ± 5 years
- Soil Area 3: 607 µg/L at 85 ± 5 years
- Soil Area 4: 36 µg/L at 135 ± 5 years
- Soil Area 5: 279 µg/L at 235 ± 5 years

The leachate predictions over time will contribute to the groundwater plume that simulated future groundwater plumes after the soil excavation to the Soil CW-PRG is complete. This alternative includes soils in the NYSDEC inactive hazardous waste disposal sitefootprint that will be holistically included in proposed alternatives to ensure completeness of the selected remedy.

For the guiding soil excavation during field implementation, the Soil CW-PRG of 23 pCi/g (69 mg/kg) will likely be treated as a DCGLemc (elevated measurement exposure concentration or never-to-exceed concentration), so individual soil concentrations exceeding the DCGLemc would be excavated. The Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM, U.S. NRC, 2000) will be used to confirm compliance with the Soil CW-PRG.

Tables 5-16 through 5-20 compare the post excavation soil concentrations for the two approaches where excavations are guided by DCGLw and DCGLemc. For the deeper soil intervals where no excavation is recommended using the DCGLw approach that is used for the FS, often the residual soil concentrations using the DCGLemc approach is lower.

Since both Soil PRGs (CW and GW) are likely to be implemented as never-to-exceed soil concentrations during remediation, the soil to groundwater modeling approach used in this FS is conservative (i.e., it assumed isolated exceedances of the PRG would remain as long as the average COC concentration in that 6-inch interval was less than the PRG). This approach is used for all soil and groundwater alternatives presented in this FS Report. As a result, this conservative modeling approach results in longer persistence of uranium plumes in the shallow and deep groundwater, and represent an upper bound of the period of performance (i.e.,

estimated number of years) to achieve the MCL. Refinement of this modeling approach may be conducted in the future (i.e., after the remedy is in place and residuals are redefined), but the current approach allows for a relative comparison of each of the soil and groundwater alternatives presented in this FS Report.

6.0 GROUNDWATER FLOW MODEL

A groundwater flow model was constructed and calibrated as a steady-state model, following the assumptions presented in Section 3.2. The steady state approach was based on the assumption that the variability in groundwater flow over time is small in comparison to the variability in groundwater flow conditions across the model area. The effects of seasonal groundwater fluctuations can be ignored while predicting the long-term (30 to 1,000 years) behavior of the groundwater flow field and uranium plume migration if near average groundwater conditions are input to the model. Therefore, the steady state modeling approach was appropriate for the model use as a tool for the analysis of long-term feasibility study scenarios, such as no action, MNA, and groundwater extraction.

6.1 Groundwater Flow Model Setup

Model construction details are described in the following sections.

6.1.1 Delineation and Discretization of Spatial Domain

The groundwater model area of interest includes the Site and off-site areas as defined in Section 2.1 and shown on Figure 6-1. The model grid was oriented so that one of the grid axes was aligned with the predominant flow and transport direction (i.e., northwest to southeast), which reduces simulation error caused by deviation from the directions of principal hydraulic conductivity tensor. Fracture trace lineaments found in the Guterl Site area also show a general northwest-southeast fracture trace orientation pattern north of the Erie Canal. Since these regional fractures may act as preferential pathways for groundwater migration, it was important that the model grid also accounted for this orientation.

The model was spatially discretized into a number of three-dimensional (3-D) finite-difference, block-centered cells. This was achieved by spatially dividing the model domain into 155 rows and 120 columns and vertically into 3 layers, resulting in a total of 55,800 cells, out of which 39,149 cells were designated active for modeling (i.e., within the flow regime). The remaining 16,657 cells, located outside the model area of interest, shown on Figure 6-1, were considered inactive for modeling. Individual cell size was 15.24 m x 15.24 m (50 ft x 50 ft) in horizontal dimensions, with the vertical dimension based on the saturated thickness of the layer described in Section 6.1.2.

6.1.2 Layer Thickness

Vertically, the model was divided into three layers that mimic the conceptual site model compiled from available geologic data and interpretations. These data included the soil and rock boring logs, geologic cross-sections, and estimates of hydraulic conductivity values from several locations across the model domain.

The three hydrostratigraphic units in the aquifer system are described below:

- Layer 1: Shallow groundwater bearing bedrock (fractured dolostone) – average 6.7 m (22 ft) in layer thickness and average 5.2 m (17 ft) in saturated thickness

- Layer 2: Deep groundwater bearing bedrock (dolostone containing the first main fracture zone) – average 11.6 m (38 ft) in layer thickness and fully saturated

- Layer 3: Shaly dolostone bedrock grading into shale – extends from the base of Layer 2 to approximately 24.4 m (80 ft) below land surface, with an average thickness of 6.7 m (22 ft) and fully saturated

The three layer vertical discretization of the model domain is a simplification of the subsurface site lithology presented in a geologic cross-section shown on Figure 2-1. The layers are identified on Figure 3-1. It may be noted that the first main fracture zone, shown in blue on Figure 3-1, is a part of Layer 2, which in addition contains dolostone that is not as intensely fractured, and therefore, not as transmissive as the first main fracture zone. As a result, the overall hydraulic conductivity (or permeability) of Layer 2 is less than Layer 1, which has been documented by the slug tests conducted in Layers 1 and 2.

Layer 3 does not have monitoring wells installed and there is no information available on groundwater flow in this layer. It was incorporated in the model in order to provide a potential vertical exit path for groundwater from Layer 2. Although groundwater flows into Layer 3, uranium concentrations are expected to be nearly a magnitude of ten lower than Layer 1 or 2 (i.e., the first fracture zone, or Layer 2, is assumed to receive uranium from the shallow zone and primarily transmit it toward the Erie Canal rather than promote vertical transport). This condition is exemplified by the measured uranium concentrations that reduce by a factor of 3 or more between Layers 1 and 2. Considering that Layer 3 is expected to have lower hydraulic conductivity and transmissivity due to a decrease in fracture density with depth, uranium concentrations are expected to be below the MCL in Layer 3.

6.1.3 Hydrogeologic Properties

6.1.3.1 Hydraulic Conductivity

Hydraulic conductivity varies spatially between different locations, commonly referred to as heterogeneity, which may occur in the horizontal and vertical dimensions. Horizontal heterogeneity represents the lateral change in hydraulic conductivity and typically results in delineation of hydraulic conductivity zones. The measured hydraulic conductivity data for Layers 1 and 2 were reviewed in an effort to delineate hydraulic conductivity zones. Average and median values for hydraulic conductivity in the shallow weathered bedrock (shallow

groundwater) are 9.8 x 10^{-3} cm/sec (27.8 ft/day) and 4.2 x 10^{-3} cm/sec (11.9 ft/day), respectively. Average and median values for hydraulic conductivity in the first main fracture zone (deep bedrock) are 2.6 x 10^{-3} cm/sec (7.5 ft/day) and 1.1 x 10^{-3} cm/sec (3.2 ft/day), respectively. The geometric means of hydraulic conductivity values in the shallow weathered bedrock and the first main fracture zone are 3.5 x 10^{-3} cm/sec (10 ft/day) and 3.5 x 10^{-4} cm/sec (1 ft/day), respectively.

The Site data indicated that the lateral variation in hydraulic conductivity has no apparent trend or pattern since the flow is controlled by weathered fractures that are well connected. Information from regional studies indicates the presence of a regional fracture trace, aligned northwest to southeast, extending from the northwest corner of the site to the Erie Canal. This fracture trace is aligned with the centerline of the shallow and deep groundwater uranium plumes shown on Figure 3-2, and is inferred to be a zone of high hydraulic conductivity and preferential groundwater flowpath. The hydraulic conductivities assigned to model cells range from 7.4 x 10^{-3} cm/sec (21.1 ft/day) to 2.5 x 10^{-2} cm/sec (69.9 ft/day) in Layer 1 (shallow groundwater) and 2.7 x 10^{-3} cm/sec (7.7 ft/day) to 1.9 x 10^{-2} cm/sec (53.3 ft/day) in Layer 2 (deep groundwater).

Vertical heterogeneity is caused by the variation of hydraulic conductivity with depth. The measured hydraulic conductivity data for Layers 1 and 2 indicate that Layer 1 has, in general, higher hydraulic conductivities than Layer 2, with the geometric mean of hydraulic conductivities in Layer 1 (3.5 x 10^{-3} cm/sec [10 ft/day]) being an order of magnitude higher than the geometric mean of hydraulic conductivities in Layer 2 (3.5 x 10^{-4} cm/sec [1 ft/day]). No hydraulic conductivity measurements are available from Layer 3, although based on the lithology and the general trend of decreasing fracture density with depth, Layer 3 is expected to have lower hydraulic conductivities than both Layers 1 and 2.

The measured hydraulic conductivities were used in the flow model as initial estimates and were refined later during the calibration process described in Section 6.2.

6.1.3.2 Hydraulic Conductivity Anisotropy

Hydraulic conductivity may also vary as a function of spatial orientation (i.e., at the same physical location, the hydraulic conductivity may vary by direction). The directional hydraulic conductivity variation is referred to as anisotropy. For the initial model setup, an anisotropy of 1.0 (same hydraulic conductivity in different directions) was used and varied, as required, during the model calibration process. The calibration did not require this anisotropy value to deviate from 1.0.

6.1.3.3 Groundwater Recharge

Precipitation is reported to be distributed uniformly over the year at the Guterl Site. The Site is located in Niagara County, which receives an average of 88.6 cm (34.9 inches) of precipitation per year, a portion of which recharges the groundwater. Based upon the SESOIL model

performed during the FS, the HELP model of precipitation, and the RESRAD modeling performed during the RI, a recharge rate of 1.2 x 10^{-6} cm/sec (15 inches per year) was established. The recharge was applied to the highest active cell (i.e., Layer 1 model cells) except in the quarry area where the recharge was applied to the Layer 2 cells where the shallow bedrock is missing or dewatered.

6.1.3.4 Hydraulic Head Distribution

The August 3, 2011 groundwater elevation data were used to calibrate the flow model since this was the most complete dataset for the model domain available at the time of model construction. Acceptable model calibration and associated residual values were determined based on comparison to this dataset. Subsequent water-level data collected through 2016 indicate that groundwater flow directions do not significantly change from season to season, or year to year. In addition, no significant site changes (e.g., building demolition or construction) have occurred since 2011. Consequently, the august 2011 dataset still applies to site conditions.

6.1.4 Establishment of Boundary Conditions

Boundary conditions were specified at the edges, top, and bottom of the groundwater flow system as follows:

- At the top of the aquifer system (or the highest active cells in either Layers 1 or 2), the boundary condition included net precipitation recharge (rainfall minus runoff and evapotranspiration). The top of the model layers that contact the ground surface were assigned the elevations coincident with the topographic surface, which allows for the delineation of flooded cells to correct during calibration.

- The Erie Canal is located in the southern part of the model and was treated as a MODFLOW RIVER type boundary. The RIVER boundary allows for groundwater and surface-water interaction. Groundwater may flow to the RIVER cells from the adjacent aquifer cells if the groundwater elevations in the aquifer are higher than the RIVER stage. Conversely, the RIVER cells may lose water to the aquifer cells if the aquifer groundwater elevations are lower than the stage in the RIVER cells. This boundary was assigned to model Layers 1 and 2. The Erie Canal is shallower than the top of Layer 3, so a RIVER boundary was not placed in Layer 3.

- The quarries were prescribed a General Head Boundary (GHB), as they are dewatered and groundwater elevation is assumed to be at or below the quarry bottom elevation of approximately 169 m (555 ft) above msl. The GHB boundary specifies a head to each cell such that if the surrounding groundwater elevation rises above the specified head, water flows out of the aquifer. If the groundwater elevation falls below the specified head, water flows into the aquifer.

- The bottom boundary of the model was a no flow boundary to represent the lack of flow of groundwater into the underlying Rochester Shale, which is considered an aquitard and a barrier to groundwater flow.

- For the initial model run, all other boundaries were modeled as open (variable head) boundaries. The boundary conditions were modified, as appropriate, during the model calibration process.

Details of the final (calibrated) boundary types selected are provided in Section 6.2.

6.1.5 Groundwater Extraction

Groundwater is extracted at the quarries to the west of the Guterl Site. Extraction rates are not known and, therefore, the quarries were modeled as GHB, with heads coincident or below the quarry floor. Consequently, no groundwater extraction wells included in the baseline model.

6.2 Calibrated Model Description

Groundwater flow models are compiled to mathematically replicate field-observed groundwater levels and hydrogeologic information, which then can be used to make predictions regarding groundwater flow and solute transport at the Guterl Site. The numerical simulation is first calibrated to a set of hydraulic features and hydrogeologic parameters such as recharge, hydraulic conductivity values, anisotropy ratios, and boundary conditions (calibration parameters) that reproduce a set of field measurements, such as groundwater elevations at selected wells (calibration targets), within an acceptable range of error. The August 3, 2011, groundwater elevation dataset was used for calibration since it contains 51 monitoring wells, 40 screened in the shallow groundwater and 11 screened in the deep groundwater.

Model calibration was performed through an iterative process of varying the input parameters until acceptable results were obtained. After each calibration run, statistics and predicted head values were reviewed to define the best statistical fit model solution, which is summarized in Table 6-1. The hydraulic conductivity distribution for the calibrated model is presented in Table 6-2. Layers 1 and 2 had 18 hydraulic conductivity zones, with the highest hydraulic conductivities assigned to the zones aligned with the regional fracture trend through the middle of the Guterl Site. Layer 3 had only one hydraulic conductivity zone. The hydraulic conductivity zones are displayed graphically on Figure 6-5.

6.3 Evaluation of Model Calibration

6.3.1 Statistical Evaluation

Model calibration results were quantitatively evaluated on the basis of the overall statistical match between the measured and simulated groundwater elevations across the flow field. As

recommended by Anderson and Woessner (1992), three ways of expressing the difference between the measured and simulated groundwater elevations were utilized. These statistical parameters were expressed as a percentage of the total head drop measured across the modeled area and are described in the following paragraphs.

- **Mean Error (ME)** is a measure of the average difference between the simulated and the measured groundwater elevations (residual mean). The calibrated model has a ME of less than 1 percent of the range of hydraulic heads measured across the Site, calculated as follows:

$$ME\% = \frac{ME\ (0.18\ ft)}{Head\ Range\ (35.98\ ft)} * 100 = 0.51\%$$

- **Mean Absolute Error (MAE)** is a measure of the average absolute difference between the simulated and the measured groundwater elevations (residual absolute mean). The calibrated model has a MAE of 7 percent of the range of hydraulic heads measured across the Site, calculated as follows:

$$MAE\% = \frac{MAE\ (2.68\ ft)}{Head\ Range\ (35.98\ ft)} * 100 = 7.45\%$$

- **Root Mean Square Error (RMSE)** is a measure of the standard deviation of the simulated values from the measured groundwater heads (standard deviation of residuals). Since the RMSE measures the average of the squared differences in the simulated and observed data, it is typically higher than the ME or the MAE. The calibrated model has a RMSE of 12 percent of the range of hydraulic heads measured across the Site, calculated as follows:

$$RMSE\% = \frac{RMSE\ (4.32\ ft)}{Head\ Range\ (35.98\ ft)} * 100 = 12.01\%$$

These combined statistical results indicate that the three-layer, 3-D model is appropriately calibrated (with minimal bias) for a transport analysis and FS-level predictions of remedial alternatives.

Groundwater flow model calibration results are reported in Table 6-3 by providing a listing of the measured and simulated groundwater elevations at each of the 51 calibration target monitoring well locations.

6.3.2 Groundwater Flow Patterns

The results of the flow model calibration were evaluated qualitatively. Groundwater elevation contours generated on the basis of the modeled dataset were plotted on the Site map for Layer 1 (Figure 6-6) and Layer 2 (Figure 6-7). While there are some differences, including differences due to interpretation, the contours are generally similar in shape to those based on the August 2011 measurements presented in the Final DGI Technical Memo (Figures 4-12 and 4-13). No monitoring wells are installed in Layer 3 for comparison to calculated values, so statistics are not available for Layer 3 (i.e., the calculated values are assumed representative of site conditions).

6.3.3 Evaluation of Systematic Bias

A scatter plot of the measured versus simulated heads (correlation among residuals) is shown on Figure 6-8; this was utilized to qualitatively evaluate the randomness of the calibration errors. For an ideal calibration with zero error, the correlated residual data are expected to be aligned along the 45 degree line shown on Figure 6-8. All models have some calibration error, including the one calibrated for the Guterl Site, which is represented by deviation from the 45 degree line. In a biased model, the majority of the errors are above or below the line, indicating that the model either systematically over predicts the groundwater elevations or under predicts them. No systematic biases were observed in the calibrated model as shown by some of the data points aligned with the 45 degree line, some above it, and some below it, although there is a cluster of wells that appear below the 45 degree line, yet these wells are not geographically clustered in the model (i.e., precludes spatial bias).

6.3.4 Sensitivity Analysis

A sensitivity analysis of the model calibration was conducted by changing key model input parameters and evaluating the effects of these changes on the model output. The parameters and the range of parameter values used for sensitivity analysis are as follows:

- Hydraulic Conductivity – 5, 2, 0.5, and 0.2 times the best statistical fit values, performed for each of the three model layers
- Horizontal Hydraulic Conductivity Anisotropy – 5, 2, 0.5, and 0.2 times the best statistical fit values, performed for each of the three model layers
- Vertical Hydraulic Conductivity Anisotropy – 5, 2, 0.5, and 0.2 times the best statistical fit values, performed for each of the three model layers
- Recharge – 1.67, 1.33, 1.25, 1.1, 0.9, 0.83, 0.67, and 0.33 times the best statistical fit value

The results of the model sensitivity analysis are tabulated in Table 6-4 and summarized below.

1. Horizontal Hydraulic Conductivity – Model calibration is sensitive slightly to changes in hydraulic conductivity of Layers 1 and 2, but not in Layer 3. At certain ranges, such as when horizontal hydraulic conductivities were increased to 5 times the calibrated values for Layer 1 or decreased to 0.5 times and 0.2 times the calibrated values in Layer 2, the model failed to converge. This indicates the values were out of range of model calibration and produced an unstable solution.

2. Horizontal Hydraulic Conductivity Anisotropy – Model calibration is sensitive to changes in horizontal hydraulic conductivity anisotropy of Layers 1 and 2, but not very sensitive to changes in Layer 3. At certain ranges, such as when horizontal hydraulic conductivities were increased to 5 times the calibrated values for Layer 2 or decreased to 0.5 times and 0.2 times the calibrated values in Layer 2, the model failed to converge.

3. Vertical Hydraulic Conductivity Anisotropy – Model calibration is not sensitive to changes in vertical hydraulic conductivity anisotropy in any of the three layers.

4. Recharge – Model calibration is sensitive to changes in recharge. If the recharge was increased more than 10 percent of the calibrated value of 1.2×10^{-6} cm/sec (15 inches/year), the model failed to converge indicating that the flow system is not subject to recharge rates much higher than the calibrated model. As the recharge rate was decreased, the model calibration error also increased, indicating that lower recharge values are not appropriate.

Overall, the calibration is stable and can be altered to test remedial alternatives for the FS analyses.

7.0 REMEDIAL ALTERNATIVES MODEL

The baseline model of groundwater flow and uranium transport was then used to evaluate the various remedial alternatives under consideration in the Guterl FS. The modeling results are expected to support the FS goals by providing the following:

- The fate and future extent of uranium plumes in shallow and deep groundwater when subjected to the various groundwater remedial alternatives;
- The effectiveness of individual remedial alternative in meeting the RAOs identified in the FS; and
- The timeframes necessary to meet the RAOs.

The following sections provide a brief description of the modeling approach and results.

7.1 Modeling Procedures and Input Parameters

The following feasibility study alternatives were evaluated using uranium transport modeling:

- Alternative G1 – No Action (i.e., perpetuation of current conditions)
- Alternative G2 – Monitored Natural Attenuation (MNA) with Environmental Monitoring and Land Use Controls (LUCs) after the Soil CW-PRG is Implemented
- Alternative G3 – Monitored Natural Attenuation (MNA) with Environmental Monitoring and Land Use Controls (LUCs) after the Soil GW-PRG is Implemented
- Alternative G4 – Groundwater Recovery using Vertical Wells and a Rubblized Trench with Ex Situ Treatment, Groundwater Monitoring, and LUCs after the Soil CW-PRG is Implemented
- Alternative G5 – Groundwater Recovery using Vertical Wells and a Rubblized Trench with Ex Situ Treatment, Groundwater Monitoring, and LUCs after the Soil GW-PRG is Implemented

The native MODFLOW and MT3DMS model files corresponding to the simulations of these alternatives are provided in electronic format as Attachment H (CD ROM).

For the No Action Alternative, it was assumed that soils will be left in place and no groundwater treatment will be performed, so soil-based uranium is expected to continuously leach to groundwater for hundreds of years. The leachate concentrations over time were predicted, as

described in Section 5.3.1, and applied to the groundwater as transient recharge with concentrations varying over time. The leachate was allowed to mix with the existing groundwater plume that together were subjected to fate and transport processes, such as advection, dispersion, and adsorption. The existing groundwater plume was prescribed in the model based on concentrations measured in August 2011 and reported in the Final DGI Technical Memo (USACE, 2012b). A trend analysis of the uranium data from each well (Attachment A) and a comparison of plume distributions derived from the annual sampling program (2012 to 2016) indicate the 2011 dataset still is appropriate to represent site conditions. A flow chart describing the modeling process for the No Action alternative is presented on Figure 7-1.

Under alternatives G3 and G5, the source-area soils exceeding the Soil GW-PRG would be removed. The residual soil-based uranium is expected to continuously leach to groundwater at lower concentrations than the no-action scenario. The leachate concentrations over time were predicted, as described in Section 5.3.2, and applied to the groundwater as transient recharge with concentrations varying over time. The leachate was allowed to mix with the existing groundwater plume, and the resultant plume was subjected to natural attenuation processes such as advection and dispersion for both alternatives, as well as active groundwater extraction for alternative G5. A flow chart describing the modeling process for the MNA based alternative (G3) is presented on Figure 7-2, while the approach for the extraction-based alternative (G5) is presented on Figure 7-3.

Under alternatives G2 and G4, the source-area soils exceeding the Soil CW-PRG would be removed under a MARSSIM approach. The residual soil uranium is expected to continuously leach to groundwater at lower concentrations than the no-action scenario, but at much higher concentration than the Soil GW-PRG soil removal alternative. The leachate concentrations over time were predicted, as described in Section 5.3.3, and applied to the groundwater as transient recharge with concentrations varying over time. The leachate was allowed to mix with the existing groundwater plume, and the resultant plume was subjected to natural attenuation processes such as advection and dispersion (G2), along with active groundwater extraction (G4). Flow charts describing the modeling processes for these alternatives are presented on Figure 7-4.

Information regarding the uranium transport and associated parameters such as aquifer porosity values, bulk density, and distribution coefficient (Kd) were based on data presented in the RI and Final DGI Technical Memo (also previously mentioned in this appendix). Approximations were made for Layer 3, for which measured values are not available. Due to the long half-life of uranium (4.5 billion years), and considering that time frame for remedial scenario analysis is 1,000 years, radioactive decay was not included in the modeling assessment.

Dispersion coefficients for Layers 1 and 2 were estimated based on the lengths of the uranium plume in the shallow and deep bedrock as 823 m and 457 m (2,700 and 1,500 ft), respectively using the following equation.

- Longitudinal Dispersivity (Xu and Eckstein, 1995)

$$\alpha_x = 3.38 \times 0.83 \times \left[log_{10}\left(\frac{L_p}{3.28}\right)\right]^{2.414}$$

Where:

α_x is the longitudinal dispersivity, in ft; and

L_p is the plume length, in ft

- Transverse dispersivity $\alpha_T = \alpha_x / 10$ (Gelhar et al., 1992)

- Vertical dispersivity $\alpha_v = \alpha_x$ x 1 x 10^{-9} (conservative estimate)

These results and a summary of solute modeling input parameters is provided in Table 7-1.

Initial groundwater concentrations for uranium transport modeling are based on the August 2011 data presented in the Final DGI Technical Memo. For making future projections of uranium concentrations under various feasibility study scenarios, it was assumed that these initial concentrations represent the "year zero" (or starting) conditions.

7.2 Alternative Analysis Modeling Results

The results of modeling of the remedial alternatives in terms of time needed to attain RAOs are summarized in Table 7-2. The following factors need to be considered when examining the model results:

1. The deteriorated state of the buildings and roofs allows for infiltration of rain water; therefore, the alternative analysis did not include the presence of the buildings (i.e., recharge was assigned as if the buildings were decayed).

2. The model predictions and associated figures indicate that some of the uranium-impacted groundwater underneath the Site is migrating toward the Erie Canal. The Erie Canal is located across from the southeastern boundary of the Site, approximately 90 meters (m) (300 ft) south of the Site. Emergency drinking water for the City of Lockport is occasionally supplied from the Summit Street intakes located in the Erie Canal immediately southeast of the Site. Two surface water samples collected on May 7, 2012 and on October 25, 2012 near the emergency water intake show uranium concentrations

ranging from 0.5 to 0.6 µg/L, which reflect background values in the Erie Canal that are attributed to naturally occurring uranium derived from groundwater baseflow and surface runoff to the canal system. Subsequent canal-water samples taken annually from 2013 through 2016 are also consistent with this range (0.37 to 0.61 ug/L total uranium).

During the navigation season (normally April 20 to November 20), groundwater containing uranium from the Guterl Site mixes with the flow in the Erie Canal and is diluted by a factor of approximately 1,200. This is reflected in the sampling data that shows uranium in the Erie Canal is well below the MCL of 30 ug/L and indistinguishable from background. During the non-navigation season (November 21 to April 19), there is no measurable flow in the Canal in the vicinity of the emergency water intake, and therefore, the Erie Canal does not function as a potential emergency water supply source during this time period. Groundwater seepage to the canal mixes with approximately 0.6 m (2 ft) of standing water normally present in the Erie Canal. Considering that the observed seep flow rates are low (less than 1 gallon per minute or 0.002 cfs), the risk of incidental exposure from ingestion of uranium in the emergency drinking water supply is absent.

The highest measured total uranium concentration at the Guterl Site is 302 µg/L, measured in September 2009 at MW-605D. If this concentration was transferred directly to the Erie Canal and diluted, the resulting maximum concentration would be 0.25 µg/L; this would be added to the background uranium concentration of 0.4 µg/L and result in a maximum surface water concentration of 0.65 µg/L for total uranium in the Erie Canal. This estimated maximum concentration is below the MCL for drinking water and indistinguishable from the current observations from the Erie Canal (2007 to 2016 sampling range is 0.3 to 0.7 µg/L).

Mass balance calculations indicate that as long as groundwater seepage concentrations to the canal do not exceed 35,500 µg/L, the resulting Erie Canal water will not exceed the 30 µg/L total uranium MCL. Such a high uranium value is not observed in groundwater on the Guterl site, nor is it predicted to achieve that value in seepage.

Details of mass balance calculations and figures showing locations of surface water samples and measured values are included in Appendix D of the FS.

Detailed discussions for each of the individual alternatives are provided in the following sections.

7.2.1 No Action

The simulated uranium concentrations in the shallow groundwater are shown on Figure 7-5, which shows changes in the plume configuration over time due to soil leachate contributions and the existing plume. The uranium concentrations persist above the MCL for approximately 780

±5 years. Portions of the shallow groundwater plume remain off site in the vicinity of the southern property boundary towards the Erie Canal for approximately 670 ±5 years, and off site in the vicinity of the western boundary towards the Quarry for approximately 710±5 years.

The simulated uranium concentrations in the deep groundwater are shown on Figure 7-6; the plume changes due to soil leachate contributions, plume transport, and vertical migration to the deep zone, where concentrations persist above MCL for over 1,000 years. Portions of the deep groundwater plume remain off site for the entire 1,000-year simulation along both the southern property boundary towards the Erie Canal and western boundary towards the Quarry. The inactive hazardous waste disposal site in the northwestern corner is predicted to act as a source term for groundwater contamination for approximately 750±5 years.

7.2.2 Soil Excavation to CW-PRG, Monitored Natural Attenuation in Groundwater, LUCs

A simulation of the complete removal of soils that exceed the Construction Worker risk threshold (or Soil CW-PRG) was assembled to predict the groundwater reaction to the remedy, and thus a pace of the natural attenuation of residual uranium. The predicted uranium-concentration maps for the shallow groundwater is shown on Figure 7-7. Due to leachate contributions from residual uranium in soil, the existing plume persists at concentrations above MCL for approximately 430±5 years. The uranium plume shrinks to within the southern property boundary towards the Erie Canal in 20 years and the western boundary towards the Quarry after approximately 300±5 years due to the persistence of the inactive hazardous waste disposal siteplume.

The uranium concentration distribution in the deep groundwater is shown on Figures 7-8. Due to vertical contributions from the shallow groundwater plume, the existing deep plume persists at concentrations above MCL for approximately 660±5 years. A portion of the uranium plume remains off site for 400±5 years.

In general, soil excavation to the Soil CW-PRG followed by MNA results in a decrease in the persistence of the uranium in groundwater as compared to the no action alternative, which does not include soil removal. The long attenuation period is due to the release of uranium mass remaining in the soil profile after the CW-PRG remedy is in place. During the 1,000 year evaluation period, the highest predicted groundwater concentration is 291 µg/L in shallow groundwater at year 90 approximately north of Building 2.

7.2.3 Soil Excavation to GW-PRG, Monitored Natural Attenuation in Groundwater, LUCs

A third simulation included the removal of soils that exceed the Soil GW-PRG (or 11 mg/kg) and the associated natural attenuation rates from the residual contamination. The predicted uranium concentrations in the shallow groundwater are depicted on Figure 7-9, which show changes in plume configuration over time. The GW-PRG leaves significantly less residual uranium in the

soil profile, which is reflected in the relatively shorter lifecycle of the existing plume. The majority of the site is expected to meet remedial goals within approximately 50±5 years.

The uranium concentration distributions in the deep groundwater are shown on Figure 7-10, which shows uranium migrating vertically out to the deep zone, where lower groundwater velocities and pore-volume flushing allows the existing plume to persist at concentrations above MCL for approximately 120±5 years.

In general, soil excavation to the Soil GW-PRG produced a significantly greater pace of natural attenuation and a substantial decrease in the persistence of the uranium plume as compared to the no action alternative, which does not include soil removal, and the CW-PRG alternative. During the 1,000 year evaluation period, the highest predicted groundwater concentration is 206 µg/L from the shallow groundwater at year 0 below Building 37.

7.2.4 Soil Excavation to CW-PRG, Hydraulic Control of Uranium Plume in Groundwater

A simulation of the complete removal of soils that exceed the Construction Worker risk (or Soil CW-PRG) was accompanied by features designed to hydraulically control the uranium plume from migrating to potential off-site receptors. The model was assembled to predict the groundwater reaction to the remedy and a timeframe for active controls (i.e., pumping).

Three vertical capture wells west of the inactive hazardous waste disposal site (two in the shallow zone and one in the deep zone) were augmented with an expanded rubblized trench that would hydraulically control groundwater flow and plume transport on the site. A rubblized trench is an extraction technology that is created by directionally blasting bedrock into highly permeable material to enhance the extraction of groundwater (i.e., create in-situ, high-permeability trenches in the bedrock). The rubblized trench technique provides a line sink in the groundwater system that is managed via pumping from sumps installed in the trench via large-diameter drilling techniques.

At Guterl, the rubblized trench is expected to prevent the off-site migration of uranium-impacted groundwater primarily in Layer 1 (shallow groundwater) in order to prevent the vertical spread of the uranium plume. The simulated trench in the Guterl model is 418 m (1370 ft) long and 7.3 m (24 ft) in depth and installed in Layer 1, with the bottom 7.6 cm to 15.0 cm (3 to 6 inches) into Layer 2.

The extraction rates for this alternative are summarized in Table 7-3 and partitioned the following way:

- A total of three (3) extraction wells and an expanded rubblized trench with a cumulative flow rate of 240 L/min (63.5 gpm) are modeled.

- Shallow Zone: Two extraction wells pumping at 26.5 L/min (7 gpm) and 19 L/min (5.0 gpm), with a cumulative flow rate of 45.5 L/min (~12 gpm); the estimated pumping rate for the trench is approximately 192 L/min (~51 gpm).

- Deep Zone: One extraction well with a rate of 2 L/min (0.5 gpm).

The uranium concentrations depicted over time in the shallow groundwater are shown on Figure 7-11, which indicates that the operation of vertical wells and the expanded trench produce a dewatered the area in the vicinity of the southern Site boundary to prevent further off-site plume migration. The uranium plume is fully captured along both the western and southern property boundaries throughout the simulation. The uranium plume is depleted below the MCL within approximately 500±5 years in the shallow zone.

The uranium concentrations in the deep groundwater are depicted on Figure 7-12 that shows the uranium plumes meets the MCL in approximately 580±5 years throughout nearly the entire site.

Results indicate that groundwater extraction with vertical extraction wells and a rubblized trench is a viable alternative for hydraulically controlling the off-site migration of the uranium plume for about 580 years until the MCLs are achieved in groundwater throughout the site.

In general, soil excavation to the Soil CW-PRG followed by hydraulic control of the uranium plume results in a decrease in the persistence of the uranium in groundwater as compared to the no action alternative, which does not include soil removal. The long attenuation period is due to the release of uranium mass remaining in the soil profile after the CW-PRG remedy was in place. During the 1,000 year evaluation period, the highest predicted groundwater concentration is 291 µg/L in shallow groundwater at year 90 approximately north of Building 2.

7.2.5 Soil Excavation to GW-PRG, Groundwater Extraction Using Vertical Wells and Rubblized Trench

Similar to the previous alternative, predictive modeling for this alternative was conducted to estimate the attenuation of the on-site and off-site uranium plume after the soil remedy is completed to the Soil GW-PRG level. Vertical wells in the main portion of the plume were augmented with a rubblized trench that would be used to extract the groundwater in the downgradient portion of the plume. A rubblized trench is an extraction technology that is created by directionally blasting bedrock into highly permeable material to enhance the extraction of groundwater (i.e., create in-situ, high-permeability trenches in the bedrock). The rubblized trench technique provides a line sink in the groundwater system that is managed via pumping from sumps installed in the trench via large-diameter drilling techniques. The rubblized trench is expected to prevent migration of groundwater off site, and also extracts the

uranium contaminated groundwater primarily in Layer 1 (shallow groundwater) in order to prevent the horizontal and vertical dispersion of the uranium plume. The simulated trench in the Guterl model is approximately 183 m (600 ft) long, 3 m (10ft) wide and 7.3 m (24 ft) in depth and installed in Layer 1, with the bottom 7.6 cm (3 inches) into Layer 2.

The extraction rates for this alternative are summarized in Table 7-4 and partitioned the following way:

- A total of 10 extraction wells and a rubblized trench with a cumulative flow rate of 296.8 L/min (~83 gpm) are modeled.

- Shallow Zone: Seven extraction wells with a range from 8 L/min to 26 L/min (2 gpm to 7 gpm) and a cumulative flow rate of total 134 L/min (35.5 gpm); the estimated pumping rate for the trench is approximately 162.8 L/min (43 gpm).

- Deep Zone: Three extraction wells a range from 3.8 L/min (1.0 gpm) to 9.5 L/min (2.5 gpm) with an estimated cumulative flow rate of 17.4 L/min [4.6 gpm].

The uranium concentrations depicted over time in the shallow groundwater are shown on Figures 7-13, which indicates that the operation of vertical wells and the trench produce a nearly site-wide remediation with 10 years of operation. Most specifically, the trench dewatered the area in the vicinity of the southern Site boundary to prevent further off-site plume migration. The uranium plume shrinks to within the southern property boundary towards the Erie Canal after approximately 25±5 years and attenuates to below the MCL within 30±5 years.

The uranium concentrations in the deep groundwater are depicted on Figures 7-14 that shows the MCL is met in approximately 30±5 years throughout nearly the entire site.

The modeling results indicate that groundwater extraction with vertical wells and a rubblized trench is a viable alternative for achieving MCLs in groundwater within 30 years throughout the majority of the site. During the 1,000 year evaluation period, the highest predicted groundwater concentration is 206 µg/L in the shallow groundwater at year 0, just underneath Building 37.

7.3 Modeling Limitations and Uncertainties

All models have application limitations and uncertainties in their predictions. The degree of representativeness of the modeling results is dependent on the following: 1) complexity of the site setting, 2) the amount of available site data, 3) the complexity of the model, 4) the effort expanded to adjust the model to site conditions, and 5) the scale of the model. The following sections discuss an uncertainty with extent of soil impacts along the northern and eastern

boundaries of the site and then other modeling conditions that may affect the simulations of uranium transport and fate.

7.3.1 Site Boundary Soil Uncertainty

The extent of soils above the Groundwater Protection and Construction Worker PRGs is illustrated in the main FS text (see FS Figures 3-1, 3-2, and 3-3) and indicates the CW-PRG soils are not common along the site boundaries. However, the extent of soils above the Groundwater Protection PRG surround the CW-PRG areas and abruptly end along the northern and eastern site boundaries. Off-site sampling was not performed along these boundaries since historical aerial photos (USACE 2009) show that property line was strictly maintained (i.e., site activities did not disturb or "spill into" adjacent properties).

The Baseline Risk Assessment (BRA) in the RI (USACE 2010) indicates that the CW-PRG is also protective of residential receptors who do not consume groundwater. Consequently, to assess whether unlikely off-site impacts at the CW-PRG along these boundaries would affect the GW-PRG alternatives, a "rind" of soils at the CW-PRG were allowed to leach at Soil Area 2 rates along the fenceline shown on Figures 7-15 and 7-16 (see yellow highlighted boundary). The "rind" is one model cell wide (nominally 50 x 50 feet) and was input to the simulation used to assess the MNA alternative derived from the GW-PRG soils alternative (Alternative G3).

The results of this simulation presented on Figures 7-15 and 7-16 show that the leachate from the "rind" of CW-PRG soils is adequately diluted by ambient groundwater and does not affect the plume fate associated with the soils GW-PRG. Consequently, the simulation of bordering soils at the CW-PRG does not pose a risk to the residential receptor nor elevate groundwater concentrations above the uranium MCL of 30 μg/L.

7.3.2 Numerical Modeling Uncertainty

The following is a list of general limitations and uncertainties associated with the model predictions presented in this Appendix.

1. A potential limitation to the model involves the simulation of the bedrock aquifer as an Equivalent Porous Media (EPM), which assumes the groundwater flow and solute transport conditions can be accurately replicated by an EPM model. An EPM model typically generalizes the fate and transport predictions. This is in contrast with a more complex discrete fracture model that might be constructed if detailed data on fracture widths, lengths, orientation, density, and connectivity were available. Since the EPM approach allows the plume to spread through the entire porous media (vertically integrated instead of migrating through individual fractures), it is capable of predicting the general plume migration on a large scale (i.e., bulk movement of the plume in the general flow direction, controlled by variability in hydraulic conductivities). The EPM

approach effectively allows the use of available data to predict the overall plume configuration over time (large scale plume movement), but is not efficient at making accurate predictions at individual monitoring wells. EPM models may under-estimate or over-estimate plume concentrations at individual locations, depending upon whether the well is in connection with transmissive fractures.

2. There is uncertainty with respect to the direction and magnitude of groundwater flow in the lower-most bedrock zone represented by Layer 3. Layer 3 does not contain monitoring wells, so groundwater elevations and hydraulic conductivities are not available. The layer provides a potential vertical exit path for groundwater from Layer 2. Observations from the two deep bedrock cores indicate that Layer 3 would have lower hydraulic conductivity due to a notable decrease in fracture density with depth. Based on the decreasing uranium concentration between Layers 1 and 2, the uranium concentrations are expected to be lower in Layer 3 (i.e., below the MCL). Consequently, the model was set up without a starting uranium plume in Layer 3, but allowed to transport uranium from Layer 2 into Layer 3. The actual transport into layer 3 is likely less robust than simulated since this sparsely fractured layer deviates significantly from the EPM assumption.

3. The model was constructed and calibrated to use the existing groundwater flow conditions, including to some extent the operation of dewatering at the quarry to the west. In the future, if the quarry operations cease, and the quarry is no longer dewatered, the groundwater flow field may be altered to account for this condition (e.g., the westerly flow along the western property boundary may reflect a more southerly direction as the dewatering influence is lost to Erie Canal influences).

4. There is uncertainty with respect to the assumption that the source of current and future uranium in groundwater is the leaching from the residual uranium in soil, and historic waste water disposal practices (such as unlined pits exposed to bedrock) no longer contribute to the groundwater uranium plume. It is possible that other historic sources are a contributing factor and may contribute additional uranium mass to the groundwater.

5. In addition to leaching of uranium from soil to groundwater, an additional flux of uranium to groundwater may occur from uranium bound to soil beneath the water table, where adsorption/desorption will control uranium release. This saturated-zone uranium was not included in the SESOIL leaching model and is not prevalent on site (i.e., most soil-based uranium is in the vadose zone). Consequently, this mass is ignored since it is limited in extent relative to the vadose-zone impacts that leach uranium to groundwater.

6. The selection of K_d values used in the soil leaching model was based on assessment of data from the RI and the DGI, which reported significantly different K_d values. The higher K_d values in the DGI than the RI likely occurred because of the different laboratory methods and the DGI samples were collected in uncontaminated areas of undisturbed native soils or areas with low uranium soil concentrations. Both data sets were used to produce an optimal K_d value for the soils leaching model.

7. The K_d values used in Layers 1, 2 and 3 of the groundwater model were the same, based on a single sample collected from Lockport dolomite and the geochemical profile (anionic uranyl carbonates). In reality, the K_d values may differ between the three model layers.

8. Although the general groundwater geochemistry supports the transport of dissolved uranium, the presence of the VOC plume may create local reductive conditions and potentially cause uranium to precipitate out of groundwater. A geochemical evaluation indicates that this is unlikely, and if it does occur, the impact on fate and transport will be transient, i.e., over a much shorter duration as compared to the 1,000 years period used for uranium fate and transport evaluation.

9. The model assumes that site structures are deteriorated and roofs allow rain water to infiltrate through soils under the buildings (i.e., the buildings do not restrict the leaching of uranium from soil into groundwater). In reality, it is possible that for a few decades out of the 1,000 year evaluation period, the buildings may restrict recharge for the no action alternative, resulting in reduction of leaching of uranium from soil to groundwater.

8.0 CONCLUSIONS

A summary of the soil and groundwater modeling performed and the conclusions reached are presented in the following bullets.

- Modeling of the fate and transport of uranium in soil and groundwater was conducted to include soil leaching, groundwater flow, and geochemical systems that were documented in the previous groundwater investigations conducted at the Site.
- The leaching of uranium from soil was simulated using SESOIL and configured to mimic five soil areas. For each of the soil areas, leachate concentrations were predicted for 1,000 years for three remedial scenarios:
  - No action – soils are left in place "as is,"
  - Soil Removal– soils exceeding the Soil CW-PRG are excavated and removed
  - Soil Removal – soils exceeding the Soil GW-PRG are excavated and removed.
- The Soil CW-PRG is defined as the maximum concentration of uranium in soil that will result in an acceptable risk of exposure to the construction worker.
- A Soil CW-PRG of 69 mg/kg total uranium (23 pCi/g 238U) was established as a threshold for soil removal to the Soil CW-PRG.
- The evaluation of soil for protection of construction worker also incorporates the condition that the SOR must also be less than or equal to 1.
- The Soil GW-PRG is defined as the concentration of uranium in soil that will be protective of groundwater; the excavation of soil impacted with uranium greater than the Soil GW-PRG, coupled with a separate groundwater plume remedial action, will ensure residual soil impacts will not re-contaminated the groundwater to concentrations greater than MCL (30 ug/L).
- A Soil GW-PRG of 11 mg/kg total uranium (3.66 pCi/g 238U) was established as a threshold for soil removal to the Soil GW-PRG.
- Soil leachate concentration (before dilution with groundwater) is expected to exceed the MCL for hundreds of years for the following actions:
  - No Action scenario shows peak concentrations for the five soil areas ranging from 281 µg/L to 35,280 µg/L occurring between 15 and 265 years from the present.

- Soil removal to the Soil GW-PRG produces peak leachate concentrations ranging from 36 µg/L to 93 µg/L occurring between 15 and 145 years from the present.
- Soil removed to the Soil CW-PRG produces peak concentrations ranging from 36 µg/L to 607 µg/L occurring between 15 and 235 years from the present.

- Soil leachate generated over time will contribute to the groundwater plume.
- A groundwater flow model was constructed and calibrated as a steady-state model.
- The model was divided into three layers:
  - Layer 1: Shallow groundwater bearing bedrock (fractured dolostone) that averages 6.7 m (22 ft) in thickness and 5.2 m (17 ft) in saturated thickness
  - Layer 2: Deep groundwater bearing bedrock (dolostone containing the first main fracture zone) that averages 11.6 m (38 ft) in thickness and is fully saturated
  - Layer 3: Shaly dolostone bedrock grading into shale that extends from the base of Layer 2 to approximately 24.4 m (80) ft below land surface, with an average thickness of 6.7 m (22 ft) and fully saturated.
- Model calibration statistics indicate that the model was capable of replicating field-observed groundwater flow conditions, with random calibration errors and no systematic biases in the model domain.
- Uranium transport models were created to evaluate the following FS alternatives:
  1. No Action
  2. Soil excavation to the Soil CW-PRG, MNA in groundwater, and LUCs
  3. Soil excavation to the Soil GW-PRG, MNA in groundwater, and LUCs
  4. Soil excavation to the Soil CW-PRG, Groundwater Extraction using Vertical Wells and a Rubblized Trench, Ex-Situ Treatment, and LUCs
  5. Soil excavation to the Soil GW-PRG, Groundwater Extraction using Vertical Wells and a Rubblized Trench, Ex-Situ Treatment, and LUCs
- For the No Action scenario, it was assumed that soils will be left in place and no groundwater treatment will be performed. The soil-based uranium is expected to continuously leach to groundwater for hundreds of years and sustain the groundwater

plume at concentrations above MCL for approximately 780±5 years in the shallow groundwater and over 1,000 years in the deep groundwater. The plume reaches a spatial and mass maximum in the two water-bearing zones between 350±5 and 430±5 years.

- The simulation of soil excavation to the Soil CW-PRG followed by MNA in groundwater results in a decrease in the persistence of the uranium plume compared to the no action alternative, which does not include soil removal. The predicted plume is expected to persist at concentrations above MCL for approximately 430±5 years in the shallow groundwater and approximately 660±5 years in the deep groundwater. The plume reaches a spatial and mass maximum in the two water-bearing zones between 50±5 and 100±5 years, respectively.

- The analysis of soil excavation to Soil GW-PRG followed by MNA in groundwater indicates uranium fate and transport that reflects source removal and pore-water flushing. A substantial decrease in the persistence of the site-wide uranium plume occurs with respect to the No Action and Soil CW-PRG alternatives. The predicted plume is expected to persist at concentrations above MCL for approximately 50±5 years in the shallow groundwater and approximately 120±5 years in the deep groundwater. The maximum plume is the current configuration, since the GW-PRG would promote plume attenuation after remedial action occurs.

- Modeling the Soil GW-PRG with an extraction-based technology (10 vertical wells and rubblized trench) ensures the uranium concentrations in on-site and off-site groundwater meet the MCL in less than 30 years after remedy was in place.

- The Soil CW-PRG coupled with hydraulic controls (three vertical wells and extended rubblized trench) is predicted to retain the plume on site until attenuation is completed around 500±5 years (shallow) and 580±5 (deep) years.

The FS of the FUSRP Guterl Site included five groundwater alternatives that would be coupled with soil and building material alternatives to assemble a selection of site-wide remedial alternatives that are later ranked for decision-making purposes in a Proposed Plan. The initial remediation costs and long-term maintenance and operation costs are included in the ranking assessment, along with an array of CERCLA criteria discussed in the main FS report.

9.0 REFERENCES

Anderson, M.P. and W.W. Woessner, 1992. Applied Groundwater Modeling, Simulation of Flow and Advective Transport.

Aquaveo, 2013. Groundwater Modeling System (GMS). Version 9.1.

Aqueous Solutions LLC , 2012. Geochemist's Workbench Software.

Argonne National Laboratory (ANL), undated. Depleted Uranium and Uranium Alloy Properties. http://web.ead.anl.gov/uranium/guide/ucompound/propertiesu/pic1.cfm and DUF6 Guide: Uranium Metal and Alloys. http://web.ead.anl.gov/uranium/guide/ucompound/forms/ Accessed 9/1/2008.

ANL, 2001. User's Manual for RESRAD Version 6, ANL/EAD-4, Environmental Assessment Division, Argonne, Illinois, July.

ASTM International, 2010. ASTM-D2937-10, Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method.

Bonazountas and Wagner, 1984. SESOIL: A Seasonal Soil Compartment Model. Arthur D. Little, Inc., Cambridge, MA, prepared for the U.S. Environmental Protection Agency, Office of Toxic Substances.

Gelhar, L.W., C. Welty, and K.R. Rehfeldt, 1992. A critical review of data on field-scale dispersion in aquifers, Water Resources Research, Volume 28, Issue 7, pages 1955–1974, July.

Frederick, W. and Tandon, V. 2012. Geochemical Evaluation of Uranium Fate and Transport Guterl Specialty Steel Site, New York. Waste Management 2012, Phoenix AZ.

Frederick, W., S. Hint, V. Tandon, and L. Durham, 2015. Hydrogeologic Modeling and the Development of Preliminary Remediation Goals for the Guterl Specialty Steel Site, New York. Waste Management 2015, Phoenix AZ.

Harbaugh, A.W., Banta E.R., Hill, M.C., and McDonald, M.G., 2000. MODFLOW 2000, The U.S. Geological Survey Modular Ground-Water Model – User Guide to Modulization Concepts and the Ground-Water Flow Process, U.S. Geological Survey Open-File Report 00-92, 121 p.

Harbaugh, Arlen W, 2005. MODFLOW-2005, The U.S. Geological Survey Modular Ground-Water Model—the Ground-Water Flow Process. Techniques and Methods 6–A16. U.S. Geological Survey.

Kumar et al. 2011. Geochemical modelling of uranium speciation in the subsurface aquatic environment of Punjab State in India. Journal of Geology and Mining Research Vol. 3(5), pp. 137-146, May 2011.

Schneiker, R., 2006. SEVIEW - Integrated Contaminant Transport and Fate Modeling System, Version 6.3, Madision, Wisconsin, 269 pp.

Telecommunication, 2011. With Rick Manns, Buffalo Division Engineer for the Erie Canal Corporation, September.

USACE, 2009. Guterl Specialty Steel Corporation, Lockport, New York. Examination of Historical Photography. U.S. Army Geospatial Center, September 2009.

USACE, 2010. Remedial Investigation Report, Guterl Specialty Steel Site, Lockport, New York. Prepared by Earth Tech/AECOM Inc. for USACE Buffalo District. July.

USACE, 2012a. Data Gap Analysis Report, Final. Prepared by Shaw Environmental & Infrastructure, Inc. March.

USACE, 2012b. Final Technical Memorandum. Data Gap Investigation to Support the Feasibility Study, Former Guterl Specialty Steel Corporation, Lockport, New York. Prepared by Shaw Environmental & Infrastructure, Inc. October.

USACE, 2013. Final Supplemental Sampling Technical Memorandum, Former Guterl Specialty Steel Corporation, Lockport, New York. Prepared by Shaw Environmental & Infrastructure, Inc. July.

USNRC, 2000. Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), NUREG-1575, Revision 1.

Xu, M. and Y. Eckstein, 1995. Use of Weighted Least-Squares Method in Evaluation of the Relationship between Dispersivity and Field Scale. Ground Water 33, 6: 905–908.

Zheng, C., 1990. A Modular Three-Dimensional Transport Model for Simulation of Advection, Dispersion and Chemical Reaction of Contaminants in Groundwater System (MT3DMS), S.S. Papadopulos & Associates, Inc., Maryland.

TABLES

Table 5-1

Compartment Geometry for SESOIL Modeling
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Soil Area Number	Area		Average Depth to Groundwater (ft)	Average Depth to Groundwater (inches)
	ft^2	Acres		
1	51,100	1.17	5.37	64.4
2	318,000	7.30	5.79	69.5
3	156,000	3.58	4.5	54.0
4	457,000	10.50	4.33	52.0
5	75,600	1.73	5.38	64.6

Table 5-2

Soil Input Parameters for SESOIL Modeling
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Parameter	Value	Units	Source
Soil Bulk Density	1.30	g/cm^3	Site-specific average value (USACE, 2010, RI Report and USACE, 2012, DGI Report))
Effective Porosity	0.25	unitless	Site-specific average value (USACE, 2012, DGI Report)
Soil Pore Disconnectedness Index	4	unitless	Default value (Bonazountas and Wagner, 1984)
Intrinsic Permeability - Area 1	3.3×10^{-8}	cm^2	Site-specific value converted from hydraulic conductivity of 1×10^{-5} cm/sec (USACE, 2010, RI Report) and adjusted to result in recharge rate of 15 inches/year
Intrinsic Permeability - Area 2	2.8×10^{-8}		
Intrinsic Permeability - Area 3	5.2×10^{-8}		
Intrinsic Permeability - Area 4	5.7×10^{-8}		
Intrinsic Permeability - Area 5	3.3×10^{-8}		

Notes:
cm^2 denotes square centimeters.
g/cm^3 denotes grams per cubic centimeter.

Sources:
Bonazountas, M., and J. Wagner. 1981, 1984. SESOIL: A Seasonal Soil Compartment Model. Draft. Cambridge: Arthur D. Little, Inc.
USACE. 2010. Remedial Investigation Report, Guterl Specialty Steel Site, Lockport, New York.
USACE. 2012. Final Data Gap Investigation Report, Guterl Specialty Steel Site, Lockport, New York.

Table 5-3

Chemical Input Parameters for SESOIL Modeling
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Parameter	Value	Units	Source
Water Solubility	100	mg/L	Adjusted value based on site-specific values (USACE, 2010 and 2012)
Molecular Weight	238.03	g/mol	Default value
Distribution Coefficient (K_d)	91	mL/g	Site-specific value (USACE, 2012, DGI Report)

Notes:
g/mol denotes grams per mole.
mg/L denotes milligrams per liter.
mL/g denotes milliliters per gram.

Sources:
Bonazountas, M., and J. Wagner. 1981, 1984. SESOIL: A Seasonal Soil Compartment Model. Draft. Cambridge: Arthur D. Little, Inc.
USACE. 2010. Remedial Investigation Report, Guterl Specialty Steel Site, Lockport, New York.
USACE. 2012. Final Data Gap Investigation Report, Guterl Specialty Steel Site, Lockport, New York.

Table 5-4

SESOIL Source Terms for Area 1 - No Action Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Before Excavation

Top inches	Bottom inches	Sample Count	Average ^{238}U pCi/g	Minimum ^{238}U pCi/g	Maximum ^{238}U pCi/g	Total Uranium mg/kg	SESOIL Layer Number	Sublayer Number	Sublayer Top inches	Sublayer Bottom inches	Layer Thickness cm
0	6	27	1,941.70	0.61	30,286.00	5,830.93	1	a	0	6	61.0
6	12	17	1,418.26	0.69	4,550.00	4,259.03		b	6	12	
12	18	9	451.82	0.50	2,428.00	1,356.81		c	12	18	
18	24	2	389.50	378.00	401.00	1,169.67		d	18	24	
24	30	0	NA	NA	NA	753.89	2	a	24	30	61.0
30	36	2	112.59	1.17	224.00	338.11		b	30	36	
36	42	0	NA	NA	NA	170.07		c	36	42	
42	48	1	0.68	0.68	0.68	2.03		d	42	48	
48	54	0	NA	NA	NA	3.36	3	a	48	54	30.5
54	60	1	1.56	1.56	1.56	4.69		b	54	60	
60	66	0	NA	NA	NA	4.69	4	a	60	64.4	11.2

Notes:

Use mid-range depth to water of 5.37 ft (64.4 inches) as SESOIL model bottom depth

Table 5-5

SESOIL Source Terms for Area 2 - No Action Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Before Excavation

Top inches	Bottom inches	Sample Count	Average ^{238}U pCi/g	Minimum ^{238}U pCi/g	Maximum ^{238}U pCi/g	Total Uranium mg/kg	SESOIL Layer Number	Sublayer Number	Sublayer Top inches	Sublayer Bottom inches	Layer Thickness cm
0	6	134	92.53	0.15	6,970.00	277.9	1	a	0	6	61.0
6	12	26	219.78	0.95	3,050.00	660.0		b	6	12	
12	18	35	628.40	0.68	17,780.00	1887.1		c	12	18	
18	24	6	10.69	1.32	32.80	32.1		d	18	24	
24	30	9	60.87	2.57	244.00	182.8	2	a	24	30	61.0
30	36	30	250.90	0.69	6,970.00	753.4		b	30	36	
36	42	6	6.41	0.87	22.90	19.3		c	36	42	
42	48	1	3.29	3.29	3.29	9.9		d	42	48	
48	54	4	38.72	2.41	104.78	116.3	3	a	48	54	45.7
54	60	22	56.31	1.45	389.00	169.1		b	54	60	
60	66	4	14.33	3.40	45.00	43.0		c	60	66	
66	72	1	2.53	2.53	2.53	7.6	4	a	66	69.5	8.9

Notes:

Use mid-range depth to water of 5.79 ft (69.5 inches) as SESOIL model bottom depth

Table 5-6

SESOIL Source Terms for Area 3 - No Action Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Before Excavation

Top inches	Bottom inches	Sample Count	Average ^{238}U pCi/g	Minimum ^{238}U pCi/g	Maximum ^{238}U pCi/g	Total Uranium mg/kg	SESOIL Layer Number	Sublayer Number	Sublayer Top inches	Sublayer Bottom inches	Layer Thickness cm
0	6	51	603.43	0.64	23,500.00	1,812.1	1	a	0	6	61.0
6	12	12	97.05	2.11	465.00	291.4		b	6	12	
12	18	14	45.00	5.90	268.00	135.1		c	12	18	
18	24	2	9.98	3.46	163.50	30.0		d	18	24	
24	30	2	13.46	1.61	25.30	40.4	2	a	24	30	61.0
30	36	13	22.34	1.39	159.00	67.1		b	30	36	
36	42	0	NA	NA	NA	45.1		c	36	42	
42	48	0	NA	NA	NA	23.1		d	42	48	
48	54	0	NA	NA	NA	1.2	3	a	48	54	15.2

Notes:

1. Use mid-range depth to water of 4.50 ft (54.0 inches) as SESOIL model bottom depth

2. NA denotes no sample obtained and corresponding Total Uranium value is an incremental average of the value between the 36-54 inch bgs (layer 2b) and the first available soil concentration below the vadose zone. Since no samples were collected for the 18 inch interval overlying the water table (36-54 inch bgs) it is assumed that the bottom 6 inch interval (48-54) has the same uranium concentration as the underlying 47.2 -70.9 inch interval (0.4 pci/g = 1.2 mg/Kg) and the intermediate layers (36-42 in bgs and 42-48 in bgs) were interpolated based on overlying and underlying layer concentrations.

Table 5-7

SESOIL Source Terms for Area 4 - No Action Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Before Excavation

Top inches	Bottom inches	Sample Count	Average ^{238}U pCi/g	Minimum ^{238}U pCi/g	Maximum ^{238}U pCi/g	Total Uranium mg/kg	SESOIL Layer Number	Sublayer Number	Sublayer Top inches	Sublayer Bottom inches	Layer Thickness cm
0	6	505	773.07	0.06	54,800.00	2,321.5	1	a	0	6	61.0
6	12	144	71.82	-0.29	3,640.00	215.7		b	6	12	
12	18	54	15.27	0.38	525.00	45.9		c	12	18	
18	24	11	2.17	0.99	4.80	6.5		d	18	24	
24	30	32	221.02	0.48	3,330.00	663.7	2	a	24	30	61.0
30	36	39	30.91	0.28	819.00	92.8		b	30	36	
36	42	15	5.17	0.37	57.12	15.5		c	36	42	
42	48	1	17.06	17.06	17.06	51.2		d	42	48	
48	54	3	1,067.02	1.07	1,660.00	3,204.3	3	a	48	51.96	10.1

Notes:

Use mid-range depth to water of 4.33 ft (51.96 inches) as SESOIL model bottom depth

Table 5-8

SESOIL Source Terms for Area 5 - No Action Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Before Excavation

Top inches	Bottom inches	Sample Count	Average ^{238}U pCi/g	Minimum ^{238}U pCi/g	Maximum ^{238}U pCi/g	Total Uranium mg/kg	SESOIL Layer Number	Sublayer Number	Sublayer Top inches	Sublayer Bottom inches	Layer Thickness cm
0	6	25	6.35	2.17	18.20	19.07	1	a	0	6	61.0
6	12	6	16.75	1.65	78.50	50.30		b	6	12	
12	18	2	3.40	2.93	3.87	10.21		c	12	18	
18	24	0	NA	NA	NA	16.01		d	18	24	
24	30	3	7.26	6.39	8.14	21.80	2	a	24	30	61.0
30	36	3	2.98	0.97	5.46	8.95		b	30	36	
36	42	0	NA	NA	NA	8.58		c	36	42	
42	48	0	NA	NA	NA	8.22		d	42	48	
48	54	0	NA	NA	NA	7.85	3	a	48	54	30.5
54	60	0	NA	NA	NA	7.49		b	54	60	
60	66	1	2.37	2.37	2.37	7.12	4	a	60	64.56	11.6

Notes:

1. Use mid-range depth to water of 5.38 ft (64.56 inches) as SESOIL model bottom depth
2. NA denotes no sample obtained and the corresponding Total Uranium value is an incremental average of the values for the overlying layer and the underlying layer.

Table 5-9

Leachate Concentrations Predicted by SESOIL Model for No Action Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Simulation Time, years		Leachate Concentration, µg/L				
Start	End	Area 1	Area 2	Area 3	Area 4	Area 5
0	10	0	0	0	0	0
10	20	68	340	86	**35,370**	104
20	30	83	574	180	29,830	121
30	40	104	762	251	21,640	115
40	50	166	931	320	15,860	113
50	60	291	1,079	397	11,830	112
60	70	506	1,216	490	9,072	114
70	80	840	1,358	610	7,237	117
80	90	1,325	1,522	770	6,069	123
90	100	1,994	1,723	980	5,389	130
100	110	2,879	1,971	1,247	5,068	139
110	120	4,002	2,275	1,572	5,010	150
120	130	5,374	2,635	1,951	5,140	162
130	140	6,991	3,050	2,371	5,399	176
140	150	8,831	3,514	2,817	5,734	190
150	160	10,850	4,013	3,271	6,102	205
160	170	13,010	4,536	3,712	6,466	220
170	180	15,240	5,064	4,122	6,796	234
180	190	17,480	5,580	4,485	7,069	247
190	200	19,650	6,068	4,789	7,268	258
200	210	21,690	6,510	5,024	7,383	267
210	220	23,530	6,894	5,186	7,409	274
220	230	25,110	7,209	5,273	7,347	279
230	240	26,410	7,445	**5,288**	7,202	**281**
240	250	27,380	7,599	5,235	6,983	280
250	260	28,010	**7,670**	5,121	6,701	277
260	270	**28,310**	7,659	4,955	6,366	271
270	280	28,280	7,570	4,746	5,992	263
280	290	27,960	7,410	4,502	5,591	253
290	300	27,350	7,188	4,234	5,173	242
300	310	26,510	6,912	3,948	4,749	229
310	320	25,460	6,912	3,654	4,327	216
320	330	24,240	6,592	3,357	3,915	202
330	340	22,910	6,237	3,064	3,520	187
340	350	21,480	5,858	2,778	3,144	173
350	360	20,000	5,462	2,504	2,792	158
360	370	18,500	5,060	2,245	2,466	145
370	380	17,000	4,657	2,002	2,166	131
380	390	15,530	4,260	1,776	1,893	118
390	400	14,100	3,874	1,569	1,647	106
400	410	12,740	3,153	1,379	1,427	95
410	420	11,460	2,822	1,208	1,231	85
420	430	10,250	2,514	1,053	1,057	75
430	440	9,138	2,229	916	906	66

Table 5-9

Leachate Concentrations Predicted by SESOIL Model for No Action Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Simulation Time, years		Leachate Concentration, µg/L				
Start	End	Area 1	Area 2	Area 3	Area 4	Area 5
440	450	8,111	1,968	794	773	58
450	460	7,168	1,730	686	658	51
460	470	6,308	1,515	591	558	45
470	480	5,530	1,322	507	472	39
480	490	4,829	1,149	434	398	34
490	500	4,201	996	371	334	29
500	510	3,642	861	316	280	25
510	520	3,147	742	268	234	21
520	530	2,711	638	227	195	18
530	540	2,327	546	192	162	16
540	550	1,992	466	162	134	13
550	560	1,701	397	136	111	11
560	570	1,448	337	114	92	10
570	580	1,230	286	96	76	8
580	590	1,042	241	80	62	7
590	600	881	203	67	51	6
600	610	744	171	56	42	5
610	620	626	143	47	34	4
620	630	526	120	39	28	3
630	640	442	100	32	23	3
640	650	370	84	27	19	2
650	660	309	70	22	15	2
660	670	257	58	18	12	2
670	680	214	48	15	10	1
680	690	178	40	12	8	1
690	700	147	33	10	7	1
700	710	122	27	8	5	1
710	720	101	22	7	4	1
720	730	83	18	6	3	1
730	740	69	15	5	3	0
740	750	57	12	4	2	0
750	760	47	10	3	2	0
760	770	38	8	3	1	0
770	780	31	7	2	1	0
780	790	26	6	2	1	0
790	800	21	5	1	1	0
800	810	17	4	1	1	0
810	820	14	3	1	0	0
820	830	11	2	1	0	0
830	840	9	2	1	0	0
840	850	8	2	1	0	0
850	860	6	1	0	0	0
860	870	5	1	0	0	0
870	880	4	1	0	0	0

Table 5-9

Leachate Concentrations Predicted by SESOIL Model for No Action Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Simulation Time, years		Leachate Concentration, µg/L				
Start	End	Area 1	Area 2	Area 3	Area 4	Area 5
880	890	3	1	0	0	0
890	900	3	1	0	0	0
900	910	2	0	0	0	0
910	920	2	0	0	0	0
920	930	1	0	0	0	0
930	940	1	0	0	0	0
940	950	1	0	0	0	0
950	960	1	0	0	0	0
960	970	1	0	0	0	0
970	980	0	0	0	0	0
980	990	0	0	0	0	0
990	1000	0	0	0	0	0

Note:

28,310 Max. Leachate concentration for the area.

Table 5-10

SESOIL Source Terms for Area 1 - Soil Excavation to PRG-GW Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Rules:

1 If the average soil ^{238}U activity excceds PRG-GW OF 3.66 pCi/g (11 mg/kg Total U), excavate and replace with backfill.

2 Backfill U = background 0.74 pCi/g ^{238}U (2.2 mg/kg Total U)

3 All soils overlying the lowest depth at which average soil ^{238}U activity excceds the PRG will be excavated.

Before Excavation

Top inches	Bottom inches	Sample Count	Average-U238 pCi/g	Min_U238 pCi/g	Max_U238 pCi/g	Total U mg/kg	Layer Number	Sublayer Number	Sublayer Top inches	Bottom inches	Thickness cm
0	6	27	1,941.70	0.61	30,286.00	5,830.93	1	a	0	6	61.0
6	12	17	1,418.26	0.69	4,550.00	4,259.03		b	6	12	
12	18	9	451.82	0.50	2,428.00	1,356.81		c	12	18	
18	24	2	389.50	378.00	401.00	1,169.67		d	18	24	
24	30	0	NA	NA	NA	NA	2	a	24	30	61.0
30	36	2	112.59	1.17	224.00	338.11		b	30	36	
36	42	0	NA	NA	NA	NA		c	36	42	
42	48	1	0.68	0.68	0.68	2.03		d	42	48	
48	54	0	NA	NA	NA	NA	3	a	48	54	30.5
54	60	1	1.56	1.56	1.56	4.69		b	54	60	
60	66	0	NA	NA	NA	NA	4	a	60	64.4	11.2

Notes:

Use mid range depth to water of 5.37 ft (64.4 inches) as SESOIL model bottom depth

Soil ^{238}U activity excceds PRG; soil to be excavated.

No excavation

After Excavation

Top inches	Bottom inches	Sample Count	Average-U238 pCi/g	Average-U source term for SESOIL mg/kg	SESOIL Layer Number	Sublayer Number	Sublayer Top inches	Sublayer Bottom inches	Layer Thickness cm
0	6	27	0.74	2.22	1	a	0	6	61.0
6	12	17	0.74	2.22		b	6	12	
12	18	9	0.74	2.22		c	12	18	
18	24	2	0.74	2.22		d	18	24	
24	30	0	0.74	2.22	2	a	24	30	61.0
30	36	2	0.74	2.22		b	30	36	
36	42	0	0.74	2.22		c	36	42	
42	48	1	0.68	2.03		d	42	48	
48	54	0	NA	3.36	3	a	48	54	30.5
54	60	1	1.56	4.69		b	54	60	
60	66	0	NA	4.70	4	a	60	64.4	11.2

Table 5-11

SESOIL Source Terms for Area 2 - Soil Excavation to PRG-GW Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Rules:

1 If the average soil ^{238}U activity excceds PRG-GW OF 3.66 pCi/g (11 mg/kg Total U), excavate and replace with backfill.

2 Backfill U = background 0.74 pCi/g ^{238}U (2.2 mg/kg Total U)

3 All soils overlying the lowest depth at which average soil 238U activity excceds the PRG will be excavated.

Before Excavation

Top inches	Bottom inches	Sample Count	Average-U238 pCi/g	Min_U238 pCi/g	Max_U238 pCi/g	Total U mg/kg	SESOIL Layer Number	Sublayer Number	Sublayer Top inches	Sublayer Bottom inches	Layer Thickness cm
0	6	134	92.53	0.15	6,970.00	277.9	1	a	0	6	61.0
6	12	26	219.78	0.95	3,050.00	660.0		b	6	12	
12	18	35	628.40	0.68	17,780.00	1887.1		c	12	18	
18	24	6	10.69	1.32	32.80	32.1		d	18	24	
24	30	9	60.87	2.57	244.00	182.8	2	a	24	30	61.0
30	36	30	250.90	0.69	6,970.00	753.4		b	30	36	
36	42	6	6.41	0.87	22.90	19.3		c	36	42	
42	48	1	3.29	3.29	3.29	9.9		d	42	48	
48	54	4	38.72	2.41	104.78	116.3	3	a	48	54	45.7
54	60	22	56.31	1.45	389.00	169.1		b	54	60	
60	66	4	14.33	3.40	45.00	43.0		c	60	66	
66	72	1	2.53	2.53	2.53	7.6	4	a	66	69.5	8.9

Notes:

Use mid range depth to water of 5.79 ft (69.5 inches) as SESOIL model bottom depth

Soil ^{238}U activity excceds PRG; soil to be excavated.

No excavation

After Excavation

Top inches	Bottom inches	Sample Count	Average-U238 pCi/g	Average-U source term for SESOIL mg/kg	SESOIL Layer Number	Sublayer Number	Sublayer Top inches	Sublayer Bottom inches	Layer Thickness cm
0	6	134	0.74	2.2	1	a	0	6	61.0
6	12	26	0.74	2.2		b	6	12	
12	18	35	0.74	2.2		c	12	18	
18	24	6	0.74	2.2		d	18	24	
24	30	9	0.74	2.2	2	a	24	30	61.0
30	36	30	0.74	2.2		b	30	36	
36	42	6	0.74	2.2		c	36	42	
42	48	1	0.74	2.2		d	42	48	
48	54	4	0.74	2.2	3	a	48	54	45.7
54	60	22	0.74	2.2		b	54	60	
60	66	4	0.74	2.2		c	60	66	
66	72	1	2.53	7.6	4	a	66	69.5	8.9

Table 5-12

SESOIL Source Terms for Area 3 - Soil Excavation to PRG-GW Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Rules:

1 If the average soil ^{238}U activity excceds PRG-GW OF 3.66 pCi/g (11 mg/kg Total U), excavate and replace with backfill.

2 Backfill U = background 0.74 pCi/g ^{238}U (2.2 mg/kg Total U)

3 All soils overlying the lowest depth at which average soil 238U activity excceds the PRG will be excavated.

Before Excavation

Top inches	Bottom inches	Sample Count	Average-U238 pCi/g	Min_U238 pCi/g	Max_U238 pCi/g	Total U mg/kg	SESOIL Layer Number	Sublayer Number	Sublayer Top inches	Sublayer Bottom inches	Layer Thickness cm
0	6	51	603.43	0.64	23,500.00	1,812.1	1	a	0	6	61.0
6	12	12	97.05	2.11	465.00	291.4		b	6	12	
12	18	14	45.00	5.90	268.00	135.1		c	12	18	
18	24	2	9.98	3.46	163.50	30.0		d	18	24	
24	30	2	13.46	1.61	25.30	40.4	2	a	24	30	61.0
30	36	13	22.34	1.39	159.00	67.1		b	30	36	
36	42	0	NA	NA	NA	NA		c	36	42	
42	48	0	NA	NA	NA	NA		d	42	48	
48	54	0	NA	NA	NA	NA	3	a	48	54	15.2

Notes:

Use mid range depth to water of 4.50 ft (54.0 inches) as SESOIL model bottom depth

Soil ^{238}U activity excceds PRG; soil to be excavated. Since no samples were collected for the 18 inch interval overlying the water table (36-54 inch bgs), it is assumed that the top 12 inches (36-36 inch bgs) will be excavated and backfilled while the bottom 6 inch interval (48-54) has the same uranium concentration as the underlying 47.2 -70.9 inch interval (0.4 pci/g = 1.2 mg/kg)and will be left in place.

No excavation

After Excavation

Top inches	Bottom inches	Sample Count	Average-U238 pCi/g	Average-U source term for SESOIL mg/kg	SESOIL Layer Number	Sublayer Number	Sublayer Top inches	Sublayer Bottom inches	Layer Thickness cm
0	6	51	0.74	2.2	1	a	0	6	61.0
6	12	12	0.74	2.2		b	6	12	
12	18	14	0.74	2.2		c	12	18	
18	24	2	0.74	2.2		d	18	24	
24	30	2	0.74	2.2	2	a	24	30	61.0
30	36	13	0.74	2.2		b	30	36	
36	42	0	0.74	2.2		c	36	42	
42	48	0	0.74	2.2		d	42	48	
48	54	0	0.40	1.2	3	a	48	54	15.2

Table 5-13

SESOIL Source Terms for Area 4 - Soil Excavation to PRG-GW Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Rules:

1 If the average soil ^{238}U activity excceds PRG-GW OF 3.66 pCi/g (11 mg/kg Total U), excavate and replace with backfill.

2 Backfill U = background 0.74 pCi/g ^{238}U (2.2 mg/kg Total U)

3 All soils overlying the lowest depth at which average soil 238U activity excceds the PRG will be excavated.

Before Excavation

Top inches	Bottom inches	Sample Count	Average-U238 pCi/g	Min_U238 pCi/g	Max_U238 pCi/g	Total U mg/kg	SESOIL Layer Number	Sublayer Number	Sublayer Top inches	Sublayer Bottom inches	Layer Thickness cm
0	6	505	773.07	0.06	54,800.00	2,321.5	1	a	0	6	61.0
6	12	144	71.82	-0.29	3,640.00	215.7		b	6	12	
12	18	54	15.27	0.38	525.00	45.9		c	12	18	
18	24	11	2.17	0.99	4.80	6.5		d	18	24	
24	30	32	221.02	0.48	3,330.00	663.7	2	a	24	30	61.0
30	36	39	30.91	0.28	819.00	92.8		b	30	36	
36	42	15	5.17	0.37	57.12	15.5		c	36	42	
42	48	1	17.06	17.06	17.06	51.2		d	42	48	
48	54	3	1,067.02	1.07	1,660.00	3,204.3	3	a	48	51.96	10.1

Notes:

Use mid range depth to water of 4.33 ft (51.96 inches) as SESOIL model bottom depth

Soil ^{238}U activity excceds PRG; soil to be excavated.

No excavation

After Excavation

Top inches	Bottom inches	Sample Count	Average-U238 pCi/g	Average-U source term for SESOIL mg/kg	SESOIL Layer Number	Sublayer Number	Sublayer Top inches	Sublayer Bottom inches	Layer Thickness cm
0	6	505	0.74	2.2	1	a	0	6	61.0
6	12	144	0.74	2.2		b	6	12	
12	18	54	0.74	2.2		c	12	18	
18	24	11	0.74	2.2		d	18	24	
24	30	32	0.74	2.2	2	a	24	30	61.0
30	36	39	0.74	2.2		b	30	36	
36	42	15	0.74	2.2		c	36	42	
42	48	1	0.74	2.2		d	42	48	
48	54	3	0.74	2.2	3	a	48	51.96	10.1

Table 5-14

SESOIL Source Terms for Area 5 - Soil Excavation to PRG-GW Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Rules:

1 If the average soil ^{238}U activity excceds PRG-GW OF 3.66 pCi/g (11 mg/kg Total U), excavate and replace with backfill.

2 Backfill U = background 0.74 pCi/g ^{238}U (2.2 mg/kg Total U)

3 All soils overlying the lowest depth at which average soil 238U activity excceds the PRG will be excavated.

Before Excavation

Top inches	Bottom inches	Sample Count	Average-U238 pCi/g	Min_U238 pCi/g	Max_U238 pCi/g	Total U mg/kg	Layer Number	Sublayer Number	Sublayer Top inches	Bottom inches	Thickness cm
0	6	25	6.35	2.17	18.20	19.07	1	a	0	6	61.0
6	12	6	16.75	1.65	78.50	50.30		b	6	12	
12	18	2	3.40	2.93	3.87	10.21		c	12	18	
18	24	0	NA	NA	NA	NA		d	18	24	
24	30	3	7.26	6.39	8.14	21.80	2	a	24	30	61.0
30	36	3	2.98	0.97	5.46	8.95		b	30	36	
36	42	0	NA	NA	NA	NA		c	36	42	
42	48	0	NA	NA	NA	NA		d	42	48	
48	54	0	NA	NA	NA	NA	3	a	48	54	30.5
54	60	0	NA	NA	NA	NA		b	54	60	
60	66	1	2.37	2.37	2.37	7.12	4	a	60	64.56	11.6

Notes:

Use mid range depth to water of 5.38 ft (64.56 inches) as SESOIL model bottom depth

Soil ^{238}U activity excceds PRG; soil to be excavated. No sample was collected at the depth interval 66-72 in bgs; however at underlying intervals there was high uranium. There were 2 samples reported from the 72-78 in bgs interval with 105 and 167 pCi/g 288U = 315 and 501 mg/kg U. The one reportable sample from the 78-84 in bgs interval had 39.2 pCi/g 288U = 117.7 mg/kg U. Excavation may be considered to depth 84 in bgs. This will eliminate the loading of residual uranium from the currently unexcavated 30-66 in bgs as well as leaching of uranium from soil in the smear zone, i.e., the 18 in. underneath the average water table that may be seasonally unsaturated.

No excavation

After Excavation:

Top inches	Bottom inches	Sample Count	Average-U238 pCi/g	Average-U source term for SESOIL mg/kg	SESOIL Layer Number	Sublayer Number	Sublayer Top inches	Sublayer Bottom inches	Layer Thickness cm
0	6	25	0.74	2.22	1	a	0	6	61.0
6	12	6	0.74	2.22		b	6	12	
12	18	2	0.74	2.22		c	12	18	
18	24	0	0.74	2.22		d	18	24	
24	30	3	0.74	2.22	2	a	24	30	61.0
30	36	3	0.74	2.22		b	30	36	
36	42	0	0.74	2.22		c	36	42	
42	48	0	0.74	2.22		d	42	48	
48	54	0	0.74	2.22	3	a	48	54	30.5
54	60	0	0.74	2.22		b	54	60	
60	66	1	0.74	2.22	4	a	60	64.56	11.6

Table 5-15

Leachate Concentrations Predicted by SESOIL Model - Soil Excavation to PRG-GW Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Simulation Time, years		Leachate Concentration, µg/L				
Start	End	Area 1	Area 2	Area 3	Area 4	Area 5
0	10	0	0	0	0	0
10	20	67	**93**	19	33	32
20	30	**75**	79	26	**36**	**37**
30	40	68	62	27	34	35
40	50	63	51	28	33	33
50	60	58	44	29	33	33
60	70	55	39	30	33	32
70	80	51	36	31	33	32
80	90	49	35	32	33	32
90	100	47	34	33	34	33
100	110	45	33	34	35	33
110	120	44	33	34	35	34
120	130	43	34	35	36	34
130	140	42	34	36	36	35
140	150	42	35	**36**	36	36
150	160	41	35	36	36	36
160	170	41	36	35	35	37
170	180	40	36	35	35	37
180	190	40	36	34	34	37
190	200	39	36	33	33	37
200	210	39	36	32	31	37
210	220	38	36	30	29	36
220	230	37	36	29	28	35
230	240	36	35	27	26	34
240	250	34	35	26	24	33
250	260	33	34	24	22	32
260	270	32	32	22	20	31
270	280	30	31	20	18	29
280	290	28	30	18	17	28
290	300	26	28	17	15	26
300	310	25	27	15	13	24
310	320	23	25	13	12	22
320	330	21	23	12	10	21
330	340	19	22	11	9	19
340	350	18	20	9	8	17
350	360	16	18	8	7	16
360	370	14	17	7	6	14
370	380	13	15	6	5	13
380	390	12	14	6	5	11
390	400	10	12	5	4	10
400	410	9	11	4	3	9
410	420	8	10	4	3	8
420	430	7	9	3	2	7
430	440	6	8	3	2	6
440	450	6	7	2	2	5
450	460	5	6	2	1	5
460	470	4	5	2	1	4
470	480	4	5	1	1	4
480	490	3	4	1	1	3
490	500	3	4	1	1	3
500	600	1	2	1	0	1
600	700	0	0	0	0	0
700	800	0	0	0	0	0
800	900	0	0	0	0	0
900	1000	0	0	0	0	0

93 Max. Leachate concentration for the area.

Table 5-16

Soil Residuals for Area 1 - Soil Excavation Using PRG-CW Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Rules:

1. If the average soil ^{238}U activity exceeds PRG-CW OF 23 pCi/g (69 mg/kg Total U), and/or SOR >1, excavate and replace with backfill.
2. Backfill U = background 0.74 pCi/g ^{238}U (2.2 mg/kg Total U)
3. All soils overlying the lowest depth at which average soil ^{238}U activity exceeds the PRG-CW and/or SOR> 1 will be excavated.

Before Excavation

Top inches	Bottom inches	Sample Count	Average ^{238}U pCi/g	Average SOR	Minimum ^{238}U pCi/g	Maximum ^{238}U pCi/g	Total U mg/kg
0	6	26	2,016.21	92.32	0.00	30,286.00	`
6	12	18	1,104.47	51.96	0.00	4,550.00	3,316.72
12	18	10	406.36	18.02	0.00	2,428.00	1,220.30
18	24	2	389.50	16.93	378.00	401.00	1,169.67
24	30	0	251.05	10.98	NA	NA	753.89
30	36	2	112.59	5.02	1.17	224.00	338.11
36	42	0	56.63	2.50	NA	NA	170.07
42	48	1	0.68	-0.02	0.68	0.68	2.03
48	54	0	1.12	0.01	NA	NA	3.36
54	60	1	1.56	0.04	1.56	1.56	4.69
60	66	0	1.56	0.04	NA	NA	4.69

Notes:

1. Use mid range depth to water of 5.37 ft (64.4 inches) as approximate bottom depth for residual analysis.
2. Soil to be excavated because ^{238}U activity exceeds PRG-CW and/or SOR> 1 for this or a deeper depth increment.
3. No excavation necessary.
4. No sample was collected at the depth interval 24-30 in bgs; therefore the activity and SOR for this interval were estimated to be equal to the average of overlying (18-24 in bgs) and underlying (30-36 in bgs) increments.
5. No samples were collected at the depth intervals 36-42 in bgs, 48-54 in bgs and 60-66 in bgs. The activities and SORs for the intervals 36-42 in bgs and 48-54 in bgs were estimated by taking an average of the underlying and overlying soil increments. For the lowest depth increment of 60-66 in bgs, the activity and SOR were assumed to be same as the overlying increment.

After Excavation

Top inches	Bottom inches	Excavation to PRG-CW using average areal concentrations (DCGLw) as guide		Excavation to PRG-CW using not-to-exceed concentrations (DCGLemc) as guide	
		Average Residual ^{238}U pCi/g	Total Residual U mg/kg	Average Residual ^{238}U pCi/g	Total Residual U mg/kg
0	6	0.74	2.22	3.56	10.7
6	12	0.74	2.22	2.49	7.5
12	18	0.74	2.22	1.32	4
18	24	0.74	2.22	0	0
24	30	0.74	2.22	0.59	1.8
30	36	0.74	2.22	1.17	3.5
36	42	0.74	2.22	0.92	2.8
42	48	0.68	2.03	0.68	2
48	54	1.12	3.36	1.12	3.4
54	60	1.56	4.69	1.56	4.7
60	66	1.56	4.69	1.56	4.7

Notes:

1. DCGLw is the derived concentration guideline level, wide area. It represents the approach where excavation is guided by average areal concentration.
2. DCGLemc is the derived concentration guideline level, elevated measurement exposure concentration or never-to-exceed concentration. It represents the approach where excavation is guided by individual sample soil concentrations.

Table 5-17

Soil Residuals for Area 2 - Soil Excavation Using PRG-CW Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Rules:

1 If the average soil ^{238}U activity exceeds PRG-CW OF 23 pCi/g (69 mg/kg Total U), and/or SOR >1, excavate and replace with backfill.

2 Backfill U = background 0.74 pCi/g ^{238}U (2.2 mg/kg Total U)

3 All soils overlying the lowest depth at which average soil ^{238}U activity exceeds the PRG-CW and/or SOR> 1 will be excavated.

Before Excavation

Top inches	Bottom inches	Sample Count	Average ^{238}U pCi/g	Average SOR	Minimum ^{238}U pCi/g	Maximum ^{238}U pCi/g	Total U mg/kg
0	6	113	108.91	5.96	0.38	6,970.00	`
6	12	25	227.82	10.35	0.95	3,050.00	684.14
12	18	34	646.38	28.62	0.68	17,780.00	1941.08
18	24	6	10.69	0.78	1.32	32.80	32.10
24	30	8	45.73	1.96	2.57	244.00	137.33
30	36	31	242.80	10.66	0.00	6,970.00	729.14
36	42	6	6.41	0.25	0.87	22.90	19.25
42	48	1	3.29	0.08	3.29	3.29	9.87
48	54	4	38.72	1.66	2.41	104.78	116.28
54	60	21	43.51	1.98	1.45	389.00	130.66
60	66	4	14.33	0.69	3.40	45.00	43.03
66	72	1	2.53	0.08	2.53	2.53	7.61

Notes:

1. Use mid range depth to water of 5.79 ft (69.5 inches) as approximate bottom depth for residual analysis.
2. Soil to be excavated because ^{238}U activity exceeds PRG-CW and/or SOR> 1 for this or a deeper depth increment.
3. No excavation necessary.

After Excavation

Top inches	Bottom inches	Excavation to PRG-CW using average areal concentrations (DCGLw) as guide		Excavation to PRG-CW using not-to-exceed concentrations (DCGLemc) as guide	
		Average Residual ^{238}U pCi/g	Total Residual U mg/kg	Average Residual ^{238}U pCi/g	Total Residual U mg/kg
0	6	0.74	mg/kg	6.95	mg/kg
6	12	0.74	2.22	4.53	13.6
12	18	0.74	2.22	5.86	17.6
18	24	0.74	2.22	4.83	14.5
24	30	0.74	2.22	9.65	29.0
30	36	0.74	2.22	8.59	25.8
36	42	0.74	2.22	6.80	20.4
42	48	0.74	2.22	0.00	0.0
48	54	0.74	2.22	0.00	0.0
54	60	0.74	2.22	8.47	25.4
60	66	14.33	43.03	4.10	12.3
66	72	2.53	7.61	2.53	7.6

Notes:

1. DCGLw is the derived concentration guideline level, wide area. It represents the approach where excavation is guided by average areal concentration.
2. DCGLemc is the derived concentration guideline level, elevated measurement exposure concentration or never-to-exceed concentration. It represents the approach where excavation is guided by individual sample soil concentrations.

Table 5-18

Soil Residuals for Area 3 - Soil Excavation Using PRG-CW Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Rules:

1 If the average soil ^{238}U activity exceeds PRG-CW OF 23 pCi/g (69 mg/kg Total U), and/or SOR >1, excavate and replace with backfill.

2 Backfill U = background 0.74 pCi/g ^{238}U (2.2 mg/kg Total U)

3 All soils overlying the lowest depth at which average soil ^{238}U activity exceeds the PRG-CW and/or SOR> 1 will be excavated.

Before Excavation

Top inches	Bottom inches	Sample Count	Average ^{238}U pCi/g	Average SOR	Minimum ^{238}U pCi/g	Maximum ^{238}U pCi/g	Total U mg/kg
0	6	51	603.43	26.48	0.64	23,500.00	`
6	12	12	97.05	4.47	2.11	465.00	291.44
12	18	14	45.00	2.11	5.90	268.00	135.14
18	24	2	9.98	0.35	3.46	16.50	29.97
24	30	2	13.46	0.57	1.61	25.30	40.42
30	36	13	22.34	0.97	1.39	159.00	67.09
36	42	0	11.37	0.47	NA	NA	34.14
42	48	0	11.37	0.47	NA	NA	34.14
48	54	0	11.37	0.47	NA	NA	34.14

Notes:

1. Use mid range depth to water of 4.50 ft (54.0 inches) as approximate bottom depth for residual analysis.

2. Soil to be excavated because ^{238}U activity exceeds PRG-CW and/or SOR> 1 for this or a deeper depth increment.

3. No excavation necessary.

4. Since no samples were collected for the 18 inch interval overlying the water table (36-54 inch bgs), this interval was assigned ^{238}U activity and SOR estimated by averaging the data from the overlying layer (24-30 in bgs) and the next sample below the water table (47.2 to 70.9 in bgs)

After Excavation

Top inches	Bottom inches	Excavation to PRG-CW using average areal concentrations (DCGLw) as guide		Excavation to PRG-CW using not-to-exceed concentrations (DCGLemc) as guide	
		Average Residual ^{238}U pCi/g	Total Residual U mg/kg	Average Residual ^{238}U pCi/g	Total Residual U mg/kg
0	6	0.74	2.22	7.84	23.5
6	12	0.74	2.22	7.65	23.0
12	18	0.74	mg/kg	10.72	mg/kg
18	24	9.98	29.97	16.50	49.5
24	30	13.46	40.42	1.61	4.8
30	36	22.34	67.09	9.67	29.0
36	42	11.37	34.14	5.04	15.1
42	48	11.37	34.14	5.04	15.1
48	54	11.37	34.14	5.04	15.1

Notes:

1. DCGLw is the derived concentration guideline level, wide area. It represents the approach where excavation is guided by average areal concentration.

2. DCGLemc is the derived concentration guideline level, elevated measurement exposure concentration or never-to-exceed concentration. It represents the approach where excavation is guided by individual sample soil concentrations.

Table 5-19

Soil Residuals for Area 4 - Soil Excavation Using PRG-CW Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Rules:

1 If the average soil ^{238}U activity exceeds PRG-CW OF 23 pCi/g (69 mg/kg Total U), and/or SOR >1, excavate and replace with backfill.

2 Backfill U = background 0.74 pCi/g ^{238}U (2.2 mg/kg Total U)

3 All soils overlying the lowest depth at which average soil ^{238}U activity exceeds the PRG-CW and/or SOR> 1 will be excavated.

Before Excavation

Top inches	Bottom inches	Sample Count	Average ^{238}U pCi/g	Average SOR	Minimum ^{238}U pCi/g	Maximum ^{238}U pCi/g	Total U mg/kg
0	6	491	755.87	74.35	0.06	54,800.00	`
6	12	142	72.80	3.57	-0.29	3,640.00	218.62
12	18	56	14.85	0.69	0.38	525.00	44.59
18	24	10	1.91	0.13	0.99	4.30	5.74
24	30	30	222.13	9.79	0.48	3,330.00	667.06
30	36	40	30.18	1.33	0.28	819.00	90.63
36	42	15	5.17	0.24	0.37	57.12	15.53
42	48	1	17.06	0.73	17.06	17.06	51.23
48	54	2	830.54	36.21	1.07	1,660.00	2,494.11

Notes:

1. Use mid range depth to water of 4.33 ft (51.96 inches) as approximate bottom depth for residual analysis.
2. Soil to be excavated because ^{238}U activity exceeds PRG-CW and/or SOR> 1 for this or a deeper depth increment.
3. No excavation necessary.

After Excavation

Top inches	Bottom inches	Excavation to PRG-CW using average areal concentrations (DCGLw) as guide		Excavation to PRG-CW using not-to-exceed concentrations (DCGLemc) as guide	
		Average Residual ^{238}U pCi/g	Total Residual U mg/kg	Average Residual ^{238}U pCi/g	Total Residual U mg/kg
0	6	0.74	2.22	5.34	16.02
6	12	0.74	2.22	2.90	8.70
12	18	0.74	2.22	2.26	6.80
18	24	0.74	mg/kg	1.91	mg/kg
24	30	0.74	2.22	2.71	8.14
30	36	0.74	2.22	2.38	7.14
36	42	0.74	2.22	4.81	14.44
42	48	0.74	2.22	17.06	51.23
48	54	0.74	2.22	1.07	3.22

Notes:

1. DCGLw is the derived concentration guideline level, wide area. It represents the approach where excavation is guided by average areal concentration.
2. DCGLemc is the derived concentration guideline level, elevated measurement exposure concentration or never-to-exceed concentration. It represents the approach where excavation is guided by individual sample soil concentrations.

Table 5-20

Soil Residuals for Area 5 - Soil Excavation Using PRG-CW Scenario
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Rules:

1 If the average soil ^{238}U activity exceeds PRG-CW OF 23 pCi/g (69 mg/kg Total U), and/or SOR >1, excavate and replace with backfill.

2 Backfill U = background 0.74 pCi/g ^{238}U (2.2 mg/kg Total U)

3 All soils overlying the lowest depth at which average soil ^{238}U activity exceeds the PRG-CW and/or SOR> 1 will be excavated.

Before Excavation

Top inches	Bottom inches	Sample Count	Average ^{238}U pCi/g	Average SOR	Minimum ^{238}U pCi/g	Maximum ^{238}U pCi/g	Total U mg/kg
0	6	18	7.33	0.29	2.38	18.20	`
6	12	6	16.75	0.73	1.65	78.50	50.300
12	18	2	3.40	0.27	2.93	3.87	10.217
18	24	0	5.33	0.29	NA	NA	16.010
24	30	3	7.26	0.30	6.39	8.14	21.802
30	36	3	2.98	0.09	0.97	5.46	8.949
36	42	0	2.68	0.10	NA	NA	8.037
42	48	0	2.68	0.10	NA	NA	8.037
48	54	0	2.68	0.10	NA	NA	8.037
54	60	0	2.68	0.10	NA	NA	8.037
60	66	1	2.37	0.10	2.37	2.37	7.125

Notes:

1. Use mid range depth to water of 5.38 ft (64.56 inches) as approximate bottom depth for residual analysis.

2. Soil to be excavated because ^{238}U activity exceeds PRG-CW and/or SOR> 1 for this or a deeper depth increment.

3. No excavation necessary.

4. No samples were collected at the depths 18-24 and 36-60 in bgs. The activities for these depth intervals were estimated by taking an average of the underlying and overlying soil increments.

After Excavation:

Top inches	Bottom inches	Excavation to PRG-CW using average areal concentrations (DCGLw) as guide		Excavation to PRG-CW using not-to-exceed concentrations (DCGLemc) as guide	
		Average Residual ^{238}U pCi/g	Total Residual U mg/kg	Average Residual ^{238}U pCi/g	Total Residual U mg/kg
0	6	7.33	mg/kg	7.56	mg/kg
6	12	16.75	50.30	4.40	13.21
12	18	3.40	10.22	3.40	10.21
18	24	5.33	16.01	5.33	16.01
24	30	7.26	21.80	7.26	21.80
30	36	2.98	8.95	2.98	8.95
36	42	2.68	8.04	2.68	8.04
42	48	2.68	8.04	2.68	8.04
48	54	2.68	8.04	2.68	8.04
54	60	2.68	8.04	2.68	8.04
60	66	2.37	7.12	2.37	7.12

Notes:

1. DCGLw is the derived concentration guideline level, wide area. It represents the approach where excavation is guided by average areal concentration.

2. DCGLemc is the derived concentration guideline level, elevated measurement exposure concentration or never-to-exceed concentration. It represents the approach where excavation is guided by individual sample soil concentrations.

Table 5-21

Leachate Concentrations Predicted by SESOIL Model for Soil Excavation to PRG-CW Scenario
Former Guterl Steel Corporation FUSRAP Site
Lockport, New York

Simulation Time				Leachate Concentration				
Start	End	Start	End	ug/L				
years		days		Area 1	Area 2	Area 3	Area 4	Area 5
0	10	0	3,650	0	0	0	0	0
10	20	3,650	7,300	**71**	282	524	35	115
20	30	7,300	10,950	71	**306**	580	35	121
30	40	10,950	14,600	66	291	581	34	117
40	50	14,600	18,250	61	265	583	33	115
50	60	18,250	21,900	56	235	590	33	115
60	70	21,900	25,550	53	205	598	33	117
70	80	25,550	29,200	50	177	604	33	121
80	90	29,200	32,850	48	152	**607**	34	127
90	100	32,850	36,500	46	131	604	34	134
100	110	36,500	40,150	44	113	597	35	144
110	120	40,150	43,800	43	98	583	35	155
120	130	43,800	47,450	42	86	565	36	168
130	140	47,450	51,100	42	76	541	**36**	181
140	150	51,100	54,750	41	69	514	36	196
150	160	54,750	58,400	41	62	485	36	211
160	170	58,400	62,050	41	57	453	35	225
170	180	62,050	65,700	40	53	420	34	239
180	190	65,700	69,350	40	50	386	33	251
190	200	69,350	73,000	39	47	353	32	261
200	210	73,000	76,650	38	45	320	30	270
210	220	76,650	80,300	37	43	289	29	275
220	230	80,300	83,950	36	41	259	27	279
230	240	83,950	87,600	35	39	232	25	**279**
240	250	87,600	91,250	34	38	206	23	277
250	260	91,250	94,900	32	36	182	21	273
260	270	94,900	98,550	31	34	160	19	266
270	280	98,550	102,200	29	32	140	17	257
280	290	102,200	105,850	27	31	122	16	247
290	300	105,850	109,500	25	29	106	14	235
300	310	109,500	113,150	24	27	92	13	222
310	320	113,150	116,800	22	25	80	11	208
320	330	116,800	120,450	20	23	69	10	194
330	340	120,450	124,100	18	21	59	9	180
340	350	124,100	127,750	17	20	51	7	165
350	360	127,750	131,400	15	18	43	7	151
360	370	131,400	135,050	14	16	37	6	138
370	380	135,050	138,700	12	15	31	5	125
380	390	138,700	142,350	11	13	27	4	112
390	400	142,350	146,000	10	12	23	4	101
400	410	146,000	149,650	9	11	19	3	90
410	420	149,650	153,300	8	10	16	3	80
420	430	153,300	156,950	7	8	13	2	71
430	440	156,950	160,600	6	7	11	2	62
440	450	160,600	164,250	5	7	9	2	55
450	460	164,250	167,900	5	6	8	1	48
460	470	167,900	171,550	4	5	7	1	42
470	480	171,550	175,200	3	4	6	1	36
480	490	175,200	178,850	3	4	5	1	31
490	500	178,850	182,500	3	3	4	1	27
500	600	182,500	219,000	1	2	2	0	15
600	700	219,000	255,500	0	0	0	0	3
700	800	255,500	292,000	0	0	0	0	0
800	900	292,000	328,500	0	0	0	0	0
900	1000	328,500	365,000	0	0	0	0	0

93	Max. Leachate concentration for the area averaged over period of recc

Table 6-1

Calibrated Flow Model Input Parameters
(Model Run Base_61)
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Parameter	Value
Horizontal Discretization of Model Grid	
Number of rows	155
Number of columns	120
Model cell dimensions	50 feet x 50 feet
Vertical Discretization of Model Grid	
Number of layers	3
Total number of model cells	55,800
Total number of active model cells	39,149
Average saturated thickness - Layer 1	17
Average saturated thickness - Layer 2	38
Average saturated thickness - Layer 3	32
Hydraulic Conductivity, ft/day	
Layer 1 range	5.7 to 69.9
Layer 1 Geometric Mean	20.5
Layer 2 range	0.1 to 53.3
Layer 2 Geometric Mean	1.8
Layer 3 range	0.1
Layer 3 Geometric Mean	0.1
Anisotropy	
Horizontal anisotropy - all layers	1.0
Vertical anisotropy	1.0
Recharge, inches/year	
Highest active cell	15
Calibration Target	
Target groundwater elevation measurement date	August 3, 2011
Number of calibration targets - Layer 1	40
Number of calibration targets - Layer 2	11
Boundaries	
Model Top	Recharge
Erie Canal, Model Layers 1 and 2	River
Quarries	General Head
Between Site and Quarries, Model Layer 1	Specified Head
Model East Boundary, Layer 1	Specified Head
All other boundaries	Open, Variable Head
Model Bottom	No Flow

Table 6-2

Calibrated Flow Model Hydraulic Conductivities
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Zone Number	Hydraulic Conductivity, ft/day		
	Layer 1	Layer 2	Layer 3
1	19.8	1.5	0.1
2	9.6	0.7	0.1
3	42.0	23.2	0.1
4	42.0	22.9	0.1
5	6.7	2.2	0.1
6	41.6	14.8	0.1
7	23.5	0.1	0.1
8	21.1	11.6	0.1
9	15.0	0.3	0.1
10	69.9	7.7	0.1
11	13.1	0.6	0.1
12	5.7	2.0	0.1
13	13.8	2.4	0.1
14	54.4	0.2	0.1
15	26.2	0.2	0.1
16	16.2	0.1	0.1
17	30.0	53.3	0.1
18	11.8	1.5	0.1
Geometric Mean	**19.9**	**1.8**	**0.1**

Table 6-3

Flow Model Calibration Residuals
(Model Run Base_61)
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Layer	Observed Head, ft MSL	Computed Head, ft MSL	Residual Head, ft MSL	Residual Head Absolute, ft	Square Error, ft^2
MW-01	1	592.90	589.08	3.82	3.82	14.62
MW-02	1	590.19	585.74	4.45	4.45	19.78
MW-03	1	593.35	593.21	0.14	0.14	0.02
MW-04	1	594.18	591.93	2.25	2.25	5.08
MW-05	1	593.02	590.39	2.63	2.63	6.93
MW-06	1	593.00	591.47	1.53	1.53	2.35
MW-07	1	593.58	593.85	-0.27	0.27	0.07
MW-08	1	592.23	587.37	4.86	4.86	23.66
MW-09	1	591.32	586.15	5.17	5.17	26.69
MW-10	1	593.38	592.95	0.43	0.43	0.19
MW-11	1	590.23	586.78	3.45	3.45	11.89
MW-12	1	593.58	591.72	1.86	1.86	3.46
MW-13D	1	595.62	595.70	-0.08	0.08	0.01
MW-14	1	594.12	594.22	-0.10	0.10	0.01
MW-15	1	597.39	595.70	1.69	1.69	2.85
MW-16	1	595.83	595.10	0.73	0.73	0.53
MW-17	1	598.05	597.20	0.85	0.85	0.72
MW-18	1	594.94	594.99	-0.05	0.05	0.00
MW-19	1	591.23	591.50	-0.27	0.27	0.07
MW-20	1	594.44	598.11	-3.67	3.67	13.47
MW-21	1	595.73	598.14	-2.41	2.41	5.83
MW-22	1	594.19	594.54	-0.35	0.35	0.12
MW-23	1	594.54	593.46	1.08	1.08	1.17
MW-24	1	593.25	588.01	5.24	5.24	27.42
MW-25	1	594.56	591.35	3.21	3.21	10.28
MW-26	1	593.66	590.03	3.63	3.63	13.16
600D	1	602.13	602.12	0.01	0.01	0.00
601D	1	594.68	596.52	-1.84	1.84	3.37
602D	1	594.54	596.62	-2.08	2.08	4.33
603D	1	593.21	592.53	0.68	0.68	0.46
604D	1	588.92	584.80	4.12	4.12	16.96
605D	1	594.90	594.04	0.86	0.86	0.74
606D	1	593.72	594.21	-0.49	0.49	0.24
606DR	1	594.42	594.85	-0.43	0.43	0.19
607D	1	592.55	592.88	-0.33	0.33	0.11
MW-705 D	1	591.29	592.02	-0.73	0.73	0.53

Table 6-3

Flow Model Calibration Residuals
(Model Run Base_61)
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Layer	Observed Head, ft MSL	Computed Head, ft MSL	Residual Head, ft MSL	Residual Head Absolute, ft	Square Error, ft^2
MW-710 D	1	586.02	582.59	3.43	3.43	11.74
MW-711 D	1	582.54	582.56	-0.02	0.02	0.00
MW-712 D	1	574.46	580.77	-6.31	6.31	39.85
MW-713 D	1	587.34	581.05	6.29	6.29	39.52
MW-701 DD	2	596.16	596.79	-0.63	0.63	0.39
MW-702 DD	2	593.70	596.59	-2.89	2.89	8.34
MW-703 DD	2	574.39	592.89	-18.50	18.50	342.40
MW-704 DD	2	594.87	594.01	0.86	0.86	0.73
MW-705 DD	2	591.47	592.01	-0.54	0.54	0.29
MW-706 DD	2	590.99	591.49	-0.50	0.50	0.25
MW-708 DD	2	589.45	584.02	5.43	5.43	29.53
MW-709 DD	2	587.54	584.68	2.86	2.86	8.17
MW-710 DD	2	575.38	582.29	-6.91	6.91	47.79
MW-711 DD	2	583.68	582.25	1.43	1.43	2.05
MW-712 DD	2	566.15	580.42	-14.27	14.27	203.50

Model Error Statistics

Range of observed heads	35.98	ft	
Mean Residual (Head)	0.18	ft	0.51%
Mean Absolute Residual (Head)	2.68	ft	7.45%
Root Mean Squared Residual (Head)	4.32	ft	12.01%

Note: Percent errors were calculated by dividing the individual errors in feet by the range of hydraulic heads observed across the site and multiplying the resultant fraction by 100.

Table 6-4

Flow Model Sensitivity Analysis
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Input Parameter Tested	Units	Model Run	Parameter Value		Sensitivity Test Results, Residual Head					
					Mean		Absolute Mean		Root Mean Square	
			Description	Value	ft	%	ft	%	ft	%
Hydraulic Conductivities - Layer 1	feet/day	sensitivity02	5 x Calibrated Model	28.5 to 349.5	Model failed to converge					
		sensitivity03	2 x Calibrated Model	11.4 to 139.8	2.12	5.9	3.87	10.7	5.04	14.0
		sensitivity01	***Calibrated Model***	***5.7 to 69.9***	***0.18***	***0.5***	***2.68***	***7.4***	***4.32***	***12.0***
		sensitivity04	0.5 x Calibrated Model	2.9 to 35.0	-2.47	-6.9	3.67	10.2	5.07	14.1
		sensitivity05	0.2 x Calibrated Model	1.1 to 14.0	-7.52	-20.9	7.81	21.7	9.84	27.4
Hydraulic Conductivities - Layer 2	feet/day	sensitivity06	5 x Calibrated Model	0.5 to 266.5	3.50	9.7	4.72	13.1	5.92	16.4
		sensitivity07	2 x Calibrated Model	0.2 to 106.6	1.56	4.3	3.39	9.4	4.76	13.2
		sensitivity01	***Calibrated Model***	***0.1 to 53.3***	***0.18***	***0.5***	***2.68***	***7.4***	***4.32***	***12.0***
		sensitivity08	0.5 x Calibrated Model	0.05 to 26.7	Model failed to converge					
		sensitivity09	0.2 x Calibrated Model	0.02 to 10.7	Model failed to converge					
Hydraulic Conductivity - Layer 3	feet/day	sensitivity10	5 x Calibrated Model	0.5	0.52	1.4	2.82	7.8	4.40	12.2
		sensitivity11	2 x Calibrated Model	0.2	0.27	0.8	2.71	7.5	4.34	12.1
		sensitivity01	***Calibrated Model***	***0.1***	***0.18***	***0.5***	***2.68***	***7.4***	***4.32***	***12.0***
		sensitivity12	0.5 x Calibrated Model	0.05	0.14	0.4	2.67	7.4	4.31	12.0
		sensitivity13	0.2 x Calibrated Model	0.02	0.11	0.3	2.66	7.4	4.31	12.0
Horizontal Anistropy - Layer 1	unitless	sensitivity14	5 x Calibrated Model	5	4.43	12.3	6.00	16.7	6.71	18.7
		sensitivity15	2 x Calibrated Model	2	2.17	6.0	3.87	10.8	5.05	14.0
		sensitivity01	***Calibrated Model***	***1***	***0.18***	***0.5***	***2.68***	***7.4***	***4.32***	***12.0***
		sensitivity16	0.5 x Calibrated Model	0.5	-1.56	-4.3	3.07	8.5	4.55	12.6
		sensitivity17	0.2 x Calibrated Model	0.2	-3.25	-9.0	4.18	11.6	5.50	15.3
Horizontal Anistropy - Layer 2	unitless	sensitivity18	5 x Calibrated Model	5	Model failed to converge					
		sensitivity19	2 x Calibrated Model	2	1.34	3.7	3.25	9.0	4.66	13.0
		sensitivity01	***Calibrated Model***	***1***	***0.18***	***0.5***	***2.68***	***7.4***	***4.32***	***12.0***
		sensitivity20	0.5 x Calibrated Model	0.5	Model failed to converge					
		sensitivity21	0.2 x Calibrated Model	0.2	Model failed to converge					

Table 6-4

Flow Model Sensitivity Analysis
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Input Parameter Tested	Units	Model Run	Parameter Value		Sensitivity Test Results, Residual Head					
					Mean		Absolute Mean		Root Mean Square	
			Description	Value	ft	%	ft	%	ft	%
Horizontal Anistropy - Layer 3	unitless	sensitivity22	5 x Calibrated Model	5	0.46	1.3	2.79	7.8	4.39	12.2
		sensitivity23	2 x Calibrated Model	2	0.26	0.7	2.70	7.5	4.34	12.1
		sensitivity01	***Calibrated Model***	***1***	***0.18***	***0.5***	***2.68***	***7.4***	***4.32***	***12.0***
		sensitivity24	0.5 x Calibrated Model	0.5	0.15	0.4	2.67	7.4	4.31	12.0
		sensitivity25	0.2 x Calibrated Model	0.2	0.12	0.3	2.66	7.4	4.31	12.0
Vertical Anistropy - Layer 1	unitless	sensitivity26	5 x Calibrated Model	5	0.16	0.4	2.67	7.4	4.31	12.0
		sensitivity27	2 x Calibrated Model	2	0.18	0.5	2.68	7.4	4.32	12.0
		sensitivity01	***Calibrated Model***	***1***	***0.18***	***0.5***	***2.68***	***7.4***	***4.32***	***12.0***
		sensitivity28	0.5 x Calibrated Model	0.5	0.19	0.5	2.68	7.4	4.32	12.0
		sensitivity29	0.2 x Calibrated Model	0.2	0.19	0.5	2.68	7.5	4.32	12.0
Vertical Anistropy - Layer 2	unitless	sensitivity30	5 x Calibrated Model	5	Model failed to converge					
		sensitivity31	2 x Calibrated Model	2	0.14	0.4	2.65	7.4	4.29	11.9
		sensitivity01	***Calibrated Model***	***1***	***0.18***	***0.5***	***2.68***	***7.4***	***4.32***	***12.0***
		sensitivity32	0.5 x Calibrated Model	0.5	0.21	0.6	2.70	7.5	4.34	12.1
		sensitivity33	0.2 x Calibrated Model	0.2	0.23	0.6	2.71	7.5	4.35	12.1
Vertical Anistropy - Layer 3	unitless	sensitivity34	5 x Calibrated Model	5	0.18	0.5	2.68	7.4	4.32	12.0
		sensitivity35	2 x Calibrated Model	2	0.18	0.5	2.68	7.4	4.32	12.0
		sensitivity01	***Calibrated Model***	***1***	***0.18***	***0.5***	***2.68***	***7.4***	***4.32***	***12.0***
		sensitivity36	0.5 x Calibrated Model	0.5	0.18	0.5	2.68	7.4	4.32	12.0
		sensitivity37	0.2 x Calibrated Model	0.2	0.18	0.5	2.68	7.4	4.32	12.0

Table 6-4

Flow Model Sensitivity Analysis
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Input Parameter Tested	Units	Model Run	Parameter Value		Sensitivity Test Results, Residual Head					
					Mean		Absolute Mean		Root Mean Square	
			Description	Value	ft	%	ft	%	ft	%
Recharge	inches/year	sensitivity38	1.67 x Calibrated Model	25	Model failed to converge					
		sensitivity39	1.33 x Calibrated Model	20	Model failed to converge					
		sensitivity40	1.25 x Calibrated Model	17.5	Model failed to converge					
		sensitivity41	1.10 x Calibrated Model	16.5	-0.32	-0.9	2.64	7.3	4.29	11.9
		sensitivity01	***Calibrated Model***	***15***	***0.18***	***0.5***	***2.68***	***7.4***	***4.32***	***12.0***
		sensitivity42	0.90 x Calibrated Model	13.5	0.71	2.0	2.88	8.0	4.42	12.3
		sensitivity43	0.83 x Calibrated Model	12.5	1.08	3.0	3.09	8.6	4.53	12.6
		sensitivity44	0.67 x Calibrated Model	10	1.98	5.5	3.67	10.2	4.94	13.7
		sensitivity45	0.33 x Calibrated Model	5	4.15	11.5	5.61	15.6	6.45	17.9

Table 7-1

Feasibility Study Alternative Analysis Modeling Input Parameters
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Parameter Name	Parameter value		
	Layer 1 (Shallow Groundwater)	Layer 2 (Deep Groundwater)	Layer 3
Effective Porosity	0.25	0.05	0.05
Bulk Density, g/cc	2.61	2.61	2.61
Distribution Coefficient Kd, mL/g	0.22	0.22	0.22
Longitudinal Dispersivity, ft	36	29	1
Transverse to Longitudinal Dispersivity Ratio	0.1	0.1	0.1
Vertical to Longitudinal Dispersivity Ratio	1E-09	1E-09	1E-09

Table 7-2

Feasibility Study Alternative Analysis Results
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Feasibility Study Alternative	Expected Plume Duration Above MCL, Years	
	Shallow Groundwater	Deep Groundwater
No Action	780 ± 5	1000+
Monitored Natural Attenuation, after removal of soil exceeding CW-PRG (69 mg/kg total uranium) and/or sum of ratios (SOR) is greater than 1	430 ± 5	660 ± 5
Monitored Natural Attenuation, after removal of soil exceeding GW-PRG (11 mg/kg total uranium)	50 ± 5	120 ± 5
Groundwater Control using Vertical Wells and Rubblized Trench Coupled with CW-PRG	500 ± 5	580 ± 5
Groundwater Recovery using Vertical Wells and Rubblized Trench Coupled with GW-PRG	30 ± 5	30 ± 5

Notes:

1. The PRG-GW is defined as the concentration of uranium in soil that will be protective of groundwater such that if all soil impacted with uranium greater than the PRG-GW were excavated, and the current groundwater plume was addressed through a separate remedial action over a 30-year time frame, future leaching of uranium from the residual soil would not result in regrowth of a uranium plume (uranium concentrations greater than MCL) after 30 years of groundwater remedy implementation.

2. The PRG-CW is defined as the maximum concentration of uranium in soil that will be result in acceptable risk of exposure to construction worker from residual radioactivity in soil after soils impacted with uranium greater than the PRG-CW were excavated.

2. The SOR method is based on the principle that a ratio greater than 1 represents unacceptable exposure and a ratio less than or equal to 1 represents acceptable exposure; if there are multiple radionuclides in the medium being evaluated, the sum of the ratios for all of the radionuclides must also be less than or equal to 1. For the construction worker evaluation, SOR values were generated using the PRGs developed by USACE for ^{238}U and for ^{232}Th.

Table 7-3

Flow Rates for Hydraulic Control with Vertical Wells and Rubblized Trench
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

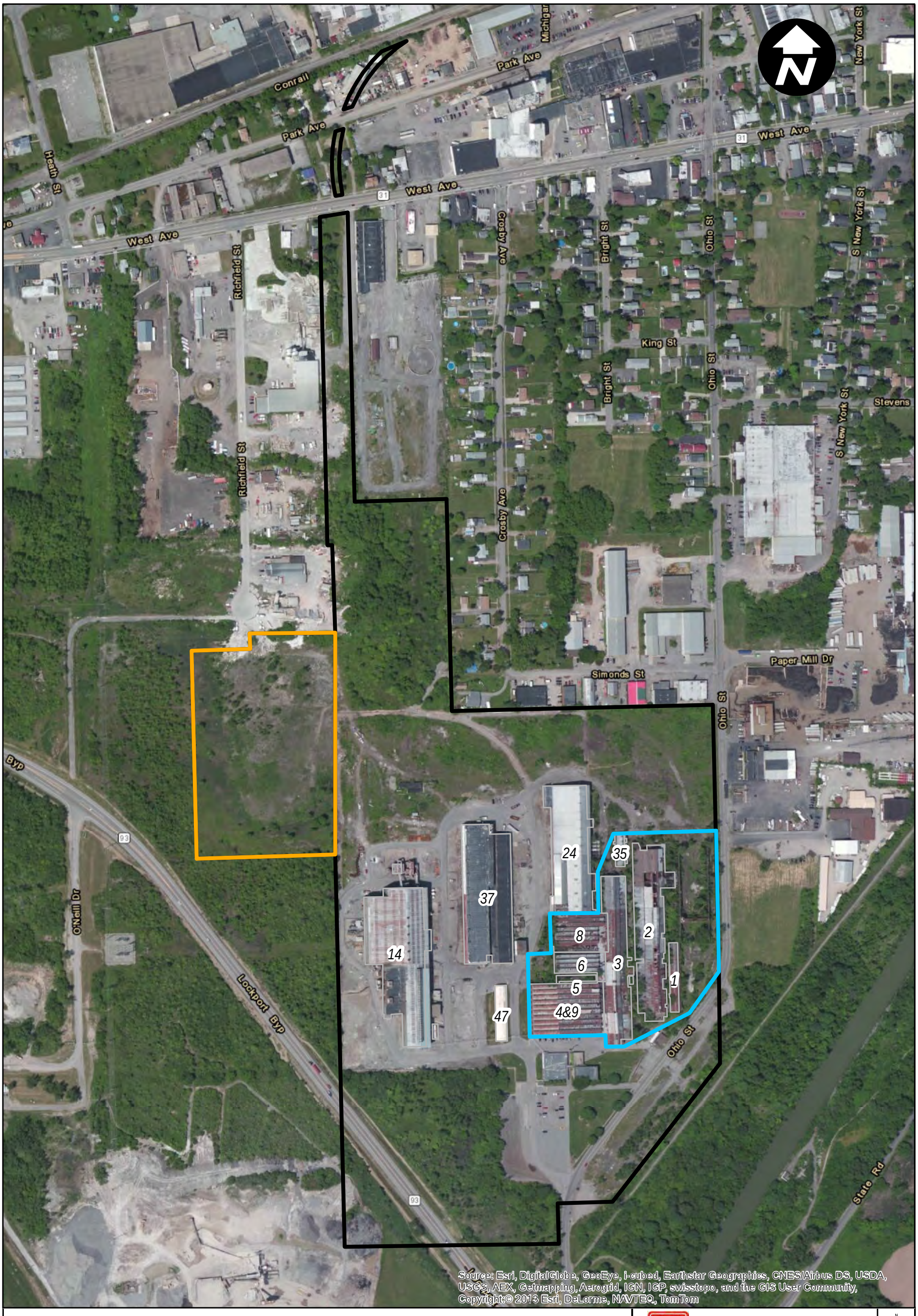
Well ID	Pumping Rate	
	ft^3/day	Gallons per Minute
Shallow Wells		
EW-05S	1347.5	7.0
EW-10S	962.5	5.0
Subtotal, 2 shallow wells		**12.0**
Deep Wells		
EW-03D	96.3	0.5
Subtotal, 1 deep well		**0.5**
Rubblized Trench, with water level 3-6 inches below Layer 1		
Rubblized Trench Drain	9782.0	50.8
Total, all 3 wells and trench		**63.3**

Table 7-4

Flow Rates for Groundwater Extraction with Vertical Wells and Rubblized Trench
Former Guterl Specialty Steel Corporation FUSRAP Site
Lockport, New York

Well ID	Pumping Rate	
	ft^3/day	Gallons per Minute
Shallow Wells		
EW-01S	-1250	-6.5
EW-02S	-1347.5	-7.0
EW-03S	-1347.5	-7.0
EW-04S	-962.5	-5.0
EW-05S	-962.5	-5.0
EW-06S	-577.5	-3.0
EW-07S	-385	-2.0
Subtotal, 9 shallow wells		**-35.5**
Deep Wells		
EW-08D	-481.25	-2.5
EW-09D	-198.5	-1.0
EW-10D	-198.5	-1.0
Subtotal, 2 deep wells		**-4.6**
Rubblized Trench, with water level 3 inches below Layer 1		
Rubblized Trench Drain	-8347	-43.4
Total, all 11 wells and trench		**-83.4**

FIGURES



Legend

- Guterl Landfill Boundary
- Guterl Excised Area Boundary
- Guterl Allegheny Ludlum Corporate Boundary
- Guterl Buildings

0 75 150 300 Feet

United States Army Corps of Engineers
Buffalo District

BUILDING STRONG

SITE PLAN

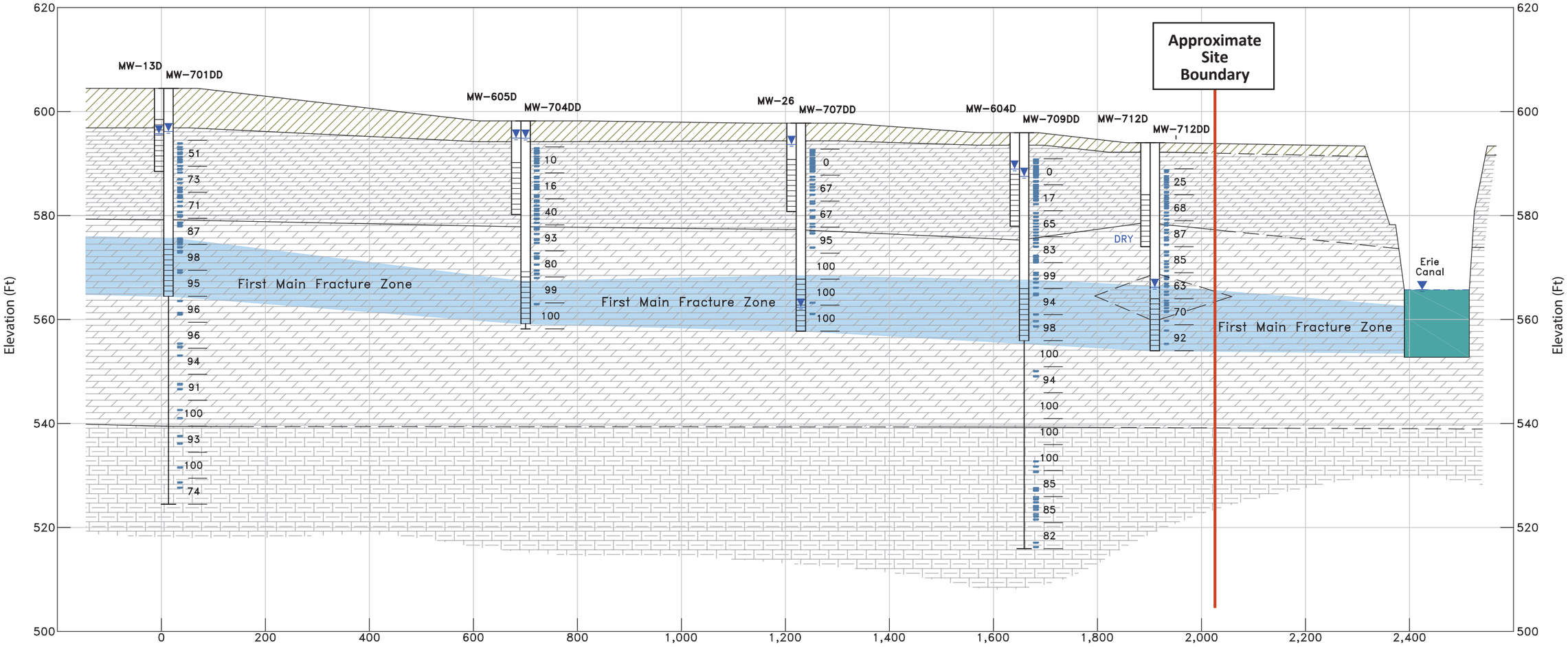
GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No. :
7/02/2014	1 inch = 333 feet	1-1

File Name: Guterl_176_Site_Map Date: 7/2/2014 Time: 1:50:23 PM

WEST

EAST



LEGEND:

- MONITORING WELL
- WATER LEVEL, AUGUST 2011
- SCREENED INTERVAL
- BOTTOM OF BORING
- 23 FRACTURES / RQD (%)
- OVERBURDEN SOIL
- FRACTURED DOLOSTONE, RQD <80% SHALLOW FLOW ZONE
- DOLOSTONE, RQD >80%
- SHALEY DOLOSTONE
- FIRST MAIN FRACTURE ZONE AND DEEP GROUNDWATER ZONE

ZONE OF GREATER FRACTURES CONTAINED WITHIN LOWER FRACTURE ROCK THAT IS NOT OBSERVED IN ADJACENT BORINGS.

NOTES

1) CANAL WATER LEVEL AND BOTTOM REFERENCED FROM AUGUST 2011 GAUGE READING AT LOCK 35, APPROXIMATELY 1.75 MILES DOWNSTREAM.

2) RQD=ROCK QUALITY DESIGNATION. A DEGREE OF FRACTURING IN A ROCK CORE (%) WHERE THE VALUE IS INVERSELY RELATED TO LENGTH OF ROCK BROKEN BY FRACTURES. FEW FRACTURES HAVE HIGH RQD% (FEW BLUE DASHES), MULTIPLE FRACTURES (MANY BLUE DASHES) HAVE LOW RQD%.

VERTICAL SCALE: 20' / 0

HORIZONTAL SCALE: 0 / 200'

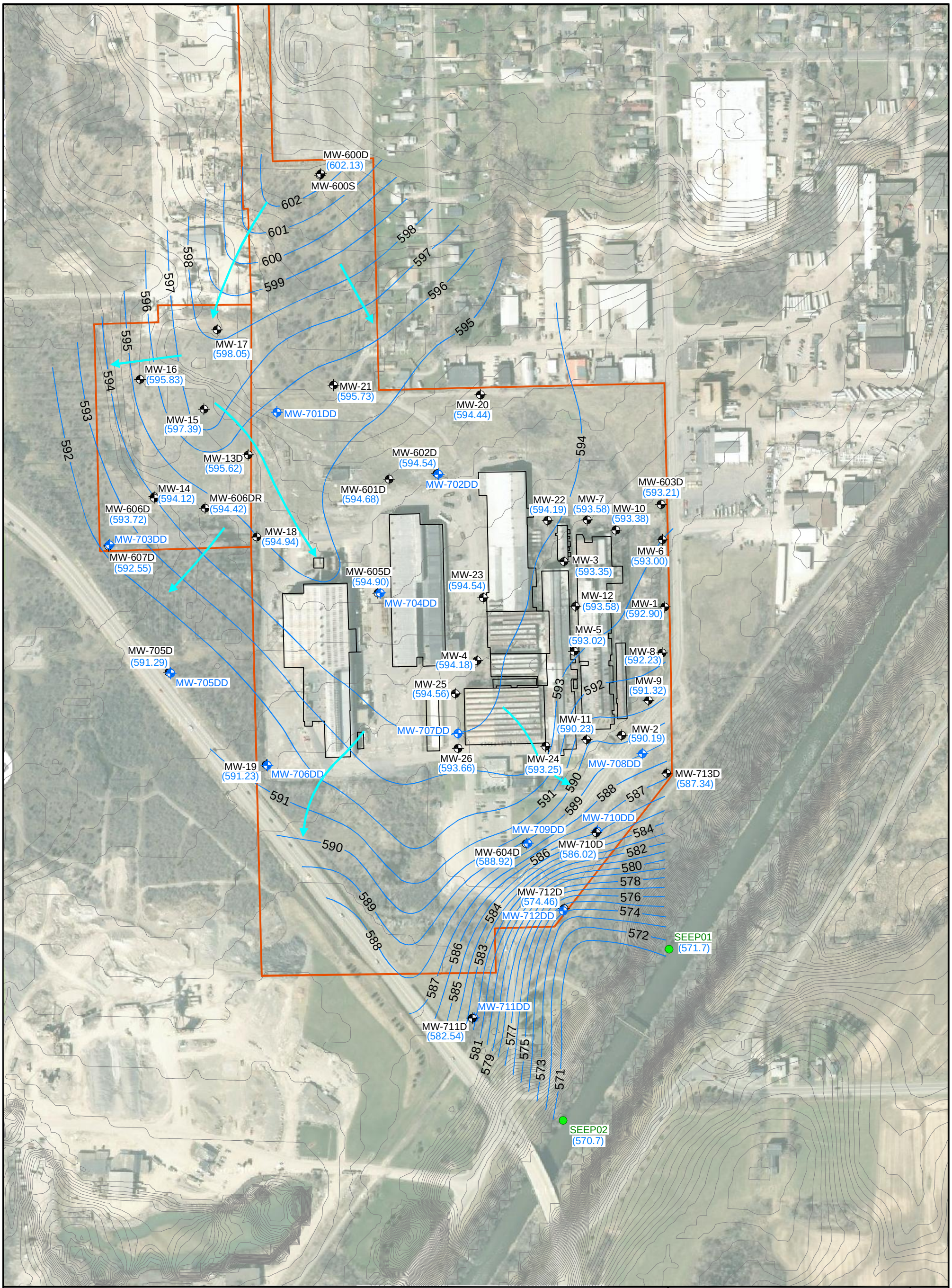
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

GEOLOGIC CROSS SECTION ACROSS THE SITE - WEST TO EAST

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/5/2012	AS SHOWN	2-1

File: O:\Project\140416\140416-B2_2-1.dwg



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1FT CONTOUR)
- GUTERL SITE BOUNDARY
- (583.68) GROUNDWATER ELEVATION (FEET MSL)
- —586— GROUNDWATER CONTOUR
- GROUNDWATER FLOW PATH (INFERRED)

0 75 150 300 Feet

Note

CANAL WATER LEVEL WAS 565.7 FEET AT 10:00 AM ON 8/8/2011. CANAL BOTTOM IS APPROXIMATELY 552.7 FEET. CANAL WATER ELEVATION WAS REFERENCED FROM GAUGE READING AT LOCK 35, APPROXIMATELY 1.75 MILES DOWNSTREAM.

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

POTENTIOMETRIC SURFACE MAP
SHALLOW WELLS
AUGUST 3, 2011

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/6/2012	1 inch = 300 feet	2-2

File: O:\Project\140416\140416-B8.dwg

Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION
- SEEP LOCATION
- SURFACE ELEVATION (1FT CONTOUR)
- GUTERL SITE BOUNDARY
- (583.68) GROUNDWATER ELEVATION (FEET MSL)
- 586 GROUNDWATER CONTOUR
- GROUNDWATER FLOW PATH (INFERRED)

Note

WELL MW-707DD WAS NOT USED FOR CONTOURING BECAUSE IT DOES NOT INTERSECT WATER PRODUCING FRACTURES.

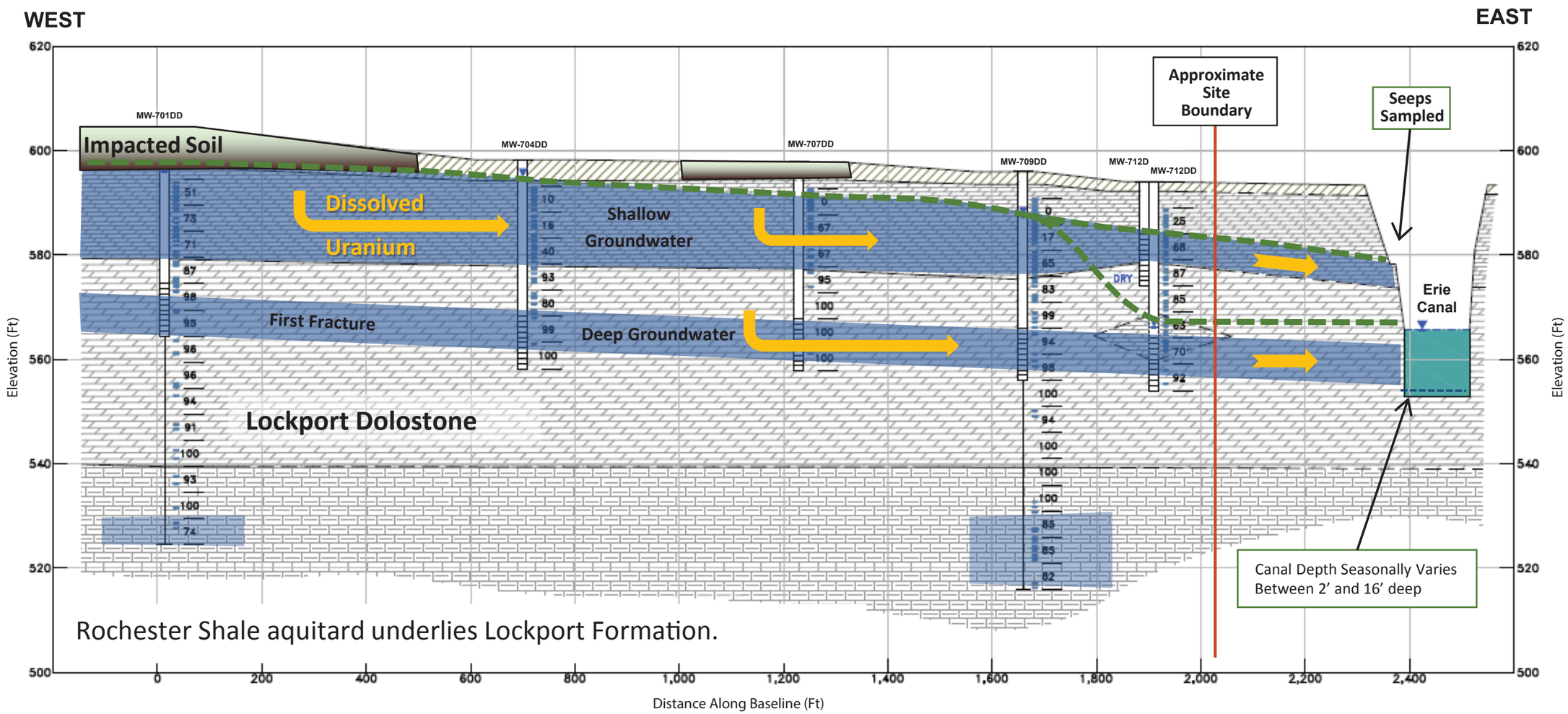
US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

POTENTIOMETRIC SURFACE MAP
DEEP WELLS
AUGUST 3, 2011

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

Date:	Scale:	Figure No.:
1/6/2012	1 inch = 300 feet	2-3

File: O:\Project\140416\140416-B7.dwg



LEGEND:

- MONITORING WELL
- WATER LEVEL, AUGUST 2011
- SCREENED INTERVAL
- BOTTOM OF BORING
- SEEP FLOW
- 23 FRACTURES / RQD (%)
- DISSOLVED URANIUM
- OVERBURDEN SOIL
- FRACTURED DOLOSTONE, RQD <80% SHALLOW FLOW ZONE
- DOLOSTONE, RQD >80%
- SHALEY DOLOSTONE
- WATER BEARING ZONES
- ZONE OF GREATER FRACTURES CONTAINED WITHIN LOWER FRACTURE ROCK THAT IS NOT OBSERVED IN ADJACENT BORINGS.

NOTES

1) CANAL WATER LEVEL AND BOTTOM REFERENCED FROM AUGUST 2011 GAUGE READING AT LOCK 35, APPROXIMATELY 1.75 MILES DOWNSTREAM.

2) RQD = ROCK QUALITY DESIGNATION. A DEGREE OF FRACTURING IN A ROCK CORE (%) WHERE THE VALUE IS INVERSELY RELATED TO LENGTH OF ROCK BROKEN BY FRACTURES. FEW FRACTURES HAVE HIGH RQD% (FEW BLUE DASHES), MULTIPLE FRACTURES (MANY BLUE DASHES) HAVE LOW RQD%.

3) IMPACTED SOILS: <2 – 9 FT THICK FILL MIXED WITH REWORKED NATIVE SOIL OVERLYING 0 – 4 FT THICK GLACIOLACUSTRINE AND/OR TILL DEPOSITS.

VERTICAL SCALE: 20' / 0

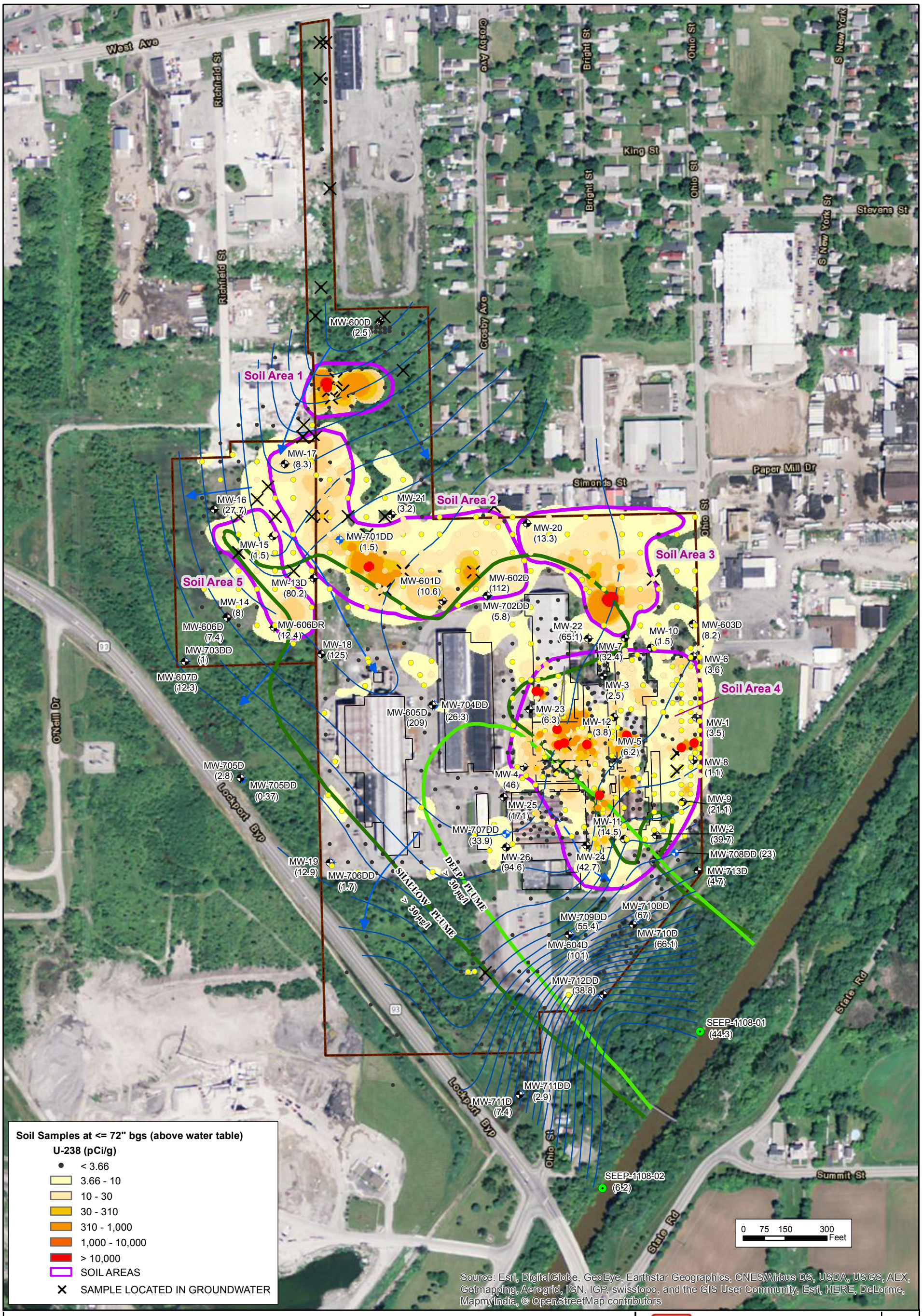
HORIZONTAL SCALE: 0 / 200'

US Army Corps of Engineers®
Buffalo District
BUILDING STRONG®

GEOLOGIC CROSS SECTION ACROSS THE SITE - WEST TO EAST

FIGURE 3-1
REVISED CONCEPTUAL MODEL

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK



Legend

- SHALLOW WELL LOCATION
- DEEP WELL LOCATION (MW-708DD)
- SEEP LOCATION
- GUTERL SITE BOUNDARY
- GUTERL BUILDINGS
- DEEP PLUME > 30 µg/l
- SHALLOW PLUME > 30 µg/l
- SHALLOW GROUNDWATER CONTOUR
- SHALLOW GROUNDWATER FLOW PATH (INFERRED)
- (80.2) AUGUST 2011 TOTAL URANIUM CONCENTRATIONS (FILTERED, µg/l)

NOTES:
1) ALL SOIL DATA TAGGED AS "REPORTABLE" IN THE DATABASE, AND OVERLYING THE WATER TABLE IS USED.

2) SOIL DATA DEEPER THAN FOLLOWING NOT USED:
I. AREA 1 - 66 INCHES (AVERAGE DTW = 64.4 INCHES)
II. AREA 2 - 72 INCHES (AVERAGE DTW = 69.5 INCHES)
III. AREA 3 - 54 INCHES (AVERAGE DTW = 54.0 INCHES)
IV. AREA 4 - 54 INCHES (AVERAGE DTW = 51.96 INCHES)
V. AREA 5 - 66 INCHES (AVERAGE DTW = 64.56 INCHES)
VI. OUTSIDE SOIL AREAS – 72 INCHES

3) DTW = DEPTH TO GROUNDWATER

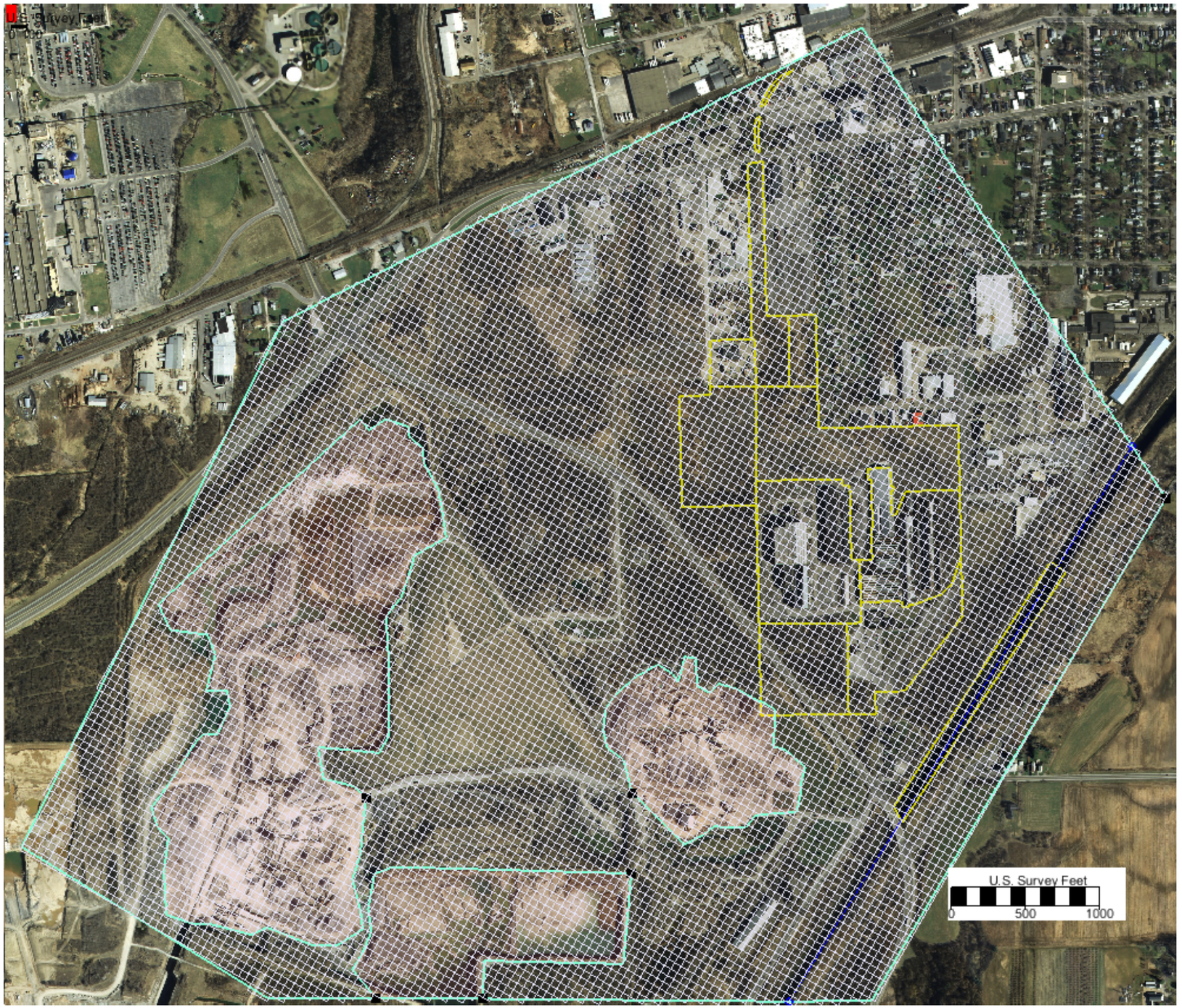
United States Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NY

RELATIONSHIP BETWEEN TOTAL URANIUM IN GROUNDWATER AND IN SOIL COLUMN (AUGUST, 2011)

Date:	Scale:	Figure No. :
8/27/2013	1 inch = 333 feet	3-2

File Name: Guterl_167_U238_2011_Reportable_Data_Above_DTW Date: 5/28/2015 Time: 9:52:54 AM



NOTES:

1. THE AREA OF INTEREST FOR MODELING IS SHOWN WITHIN THE LIGHT BLUE OUTLINE.

2. SITE AOC BOUNDARIES ARE SHOWN IN YELLOW OUTLINE.

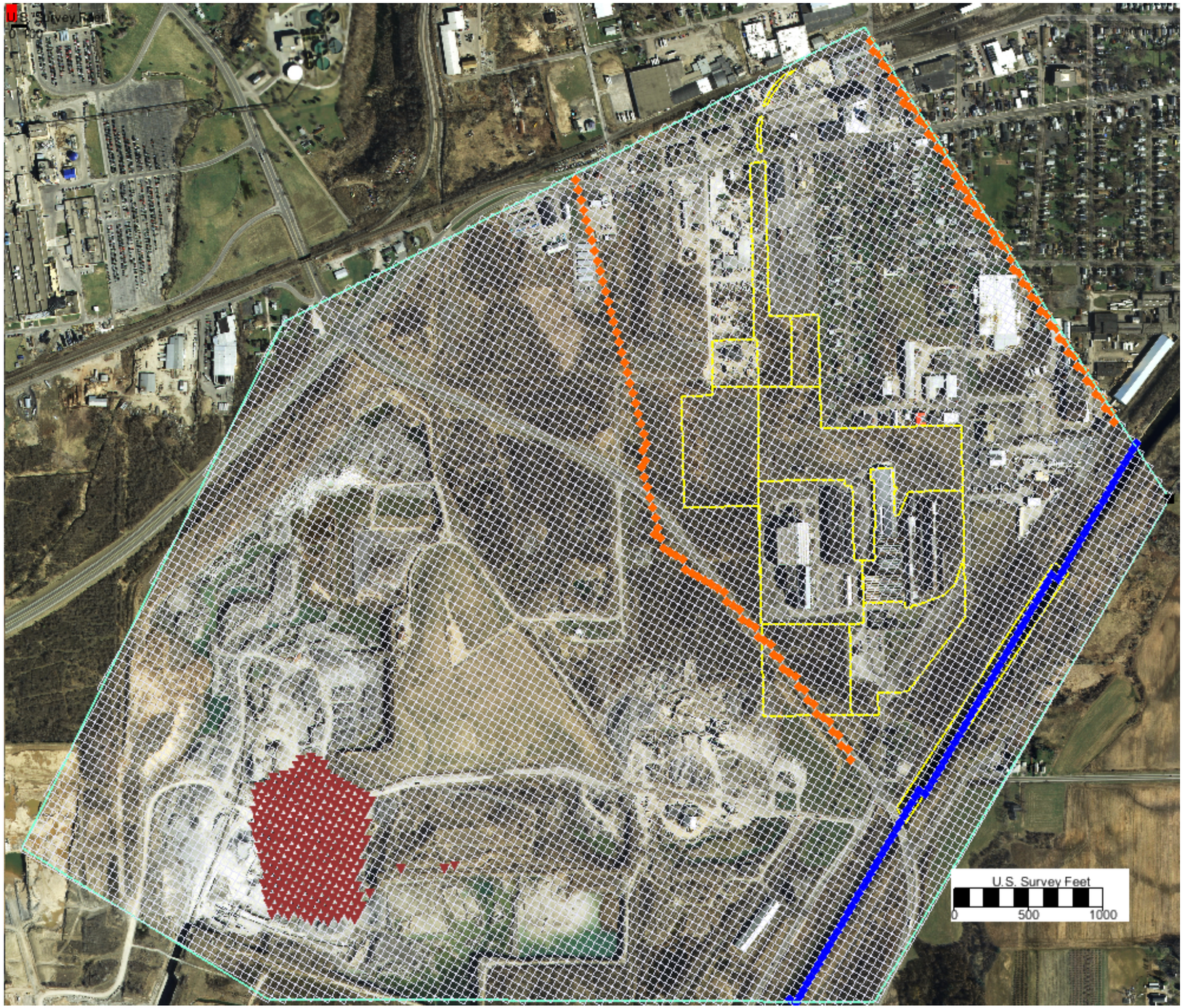
US Army Corps of Engineers
Buffalo District
BUILDING STRONG

N
W
E
S

CALIBRATED MODEL AREA OF INTEREST

GUTERL SPECIALITY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No:
12/09/2013	**Graphic**	**6-1**



NOTES:

ACTIVE MODEL DOMAIN CELLS ARE SHOWN IN WHITE GRID.

LEGEND:

RIVER BOUNDARY

GENERAL HEAD BOUNDARY

SPECIFIED HEAD BOUNDARY

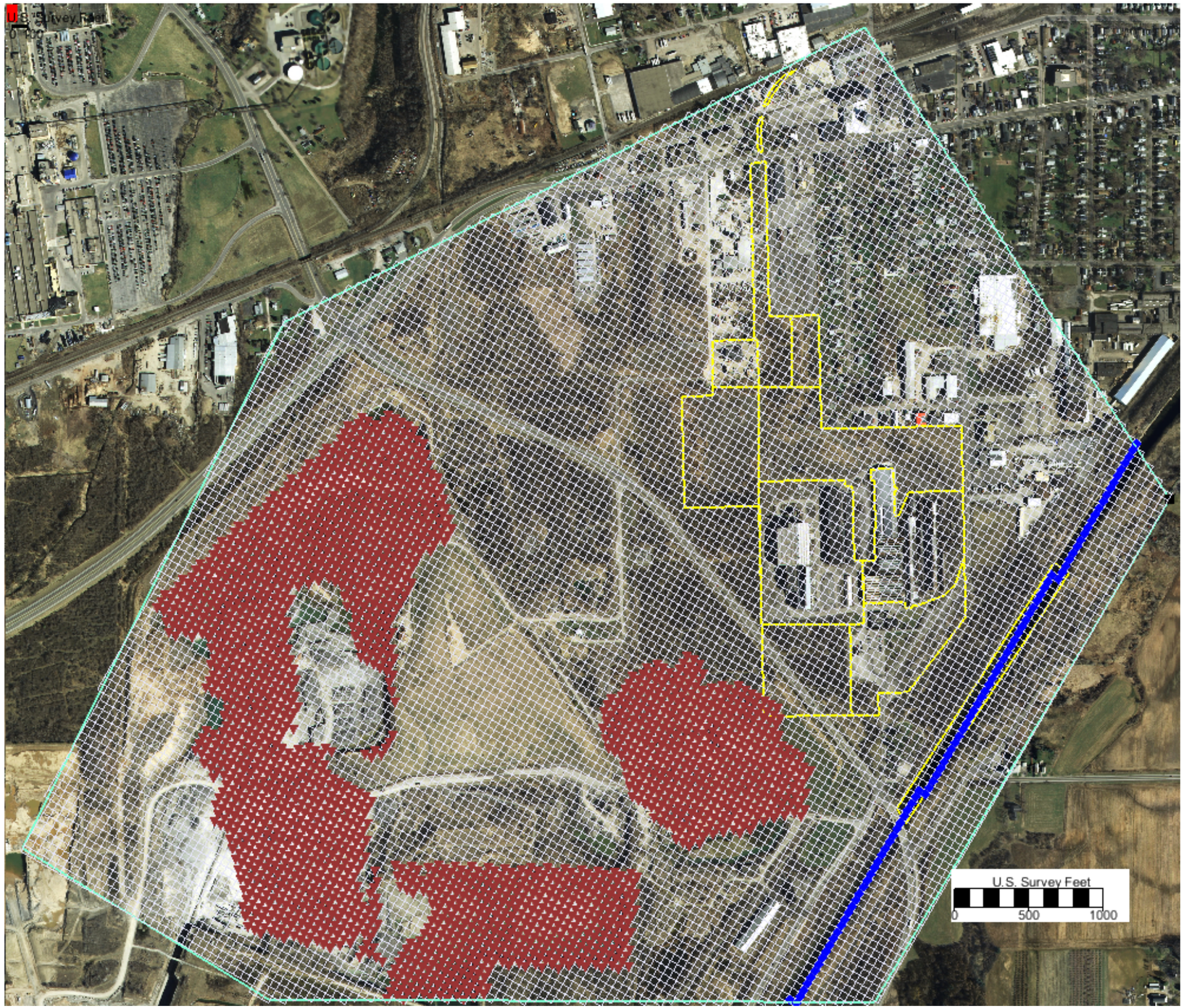
US Army Corps of Engineers
Buffalo District
BUILDING STRONG

N
W
E
S

CALIBRATED MODEL GRID AND BOUNDARY CONDITIONS FOR SHALLOW GROUNDWATER (LAYER 1)

GUTERL SPECIALITY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No:
12/09/2013	**Graphic**	**6-2**



NOTES:

ACTIVE MODEL DOMAIN CELLS ARE SHOWN IN WHITE GRID.

LEGEND:

RIVER BOUNDARY

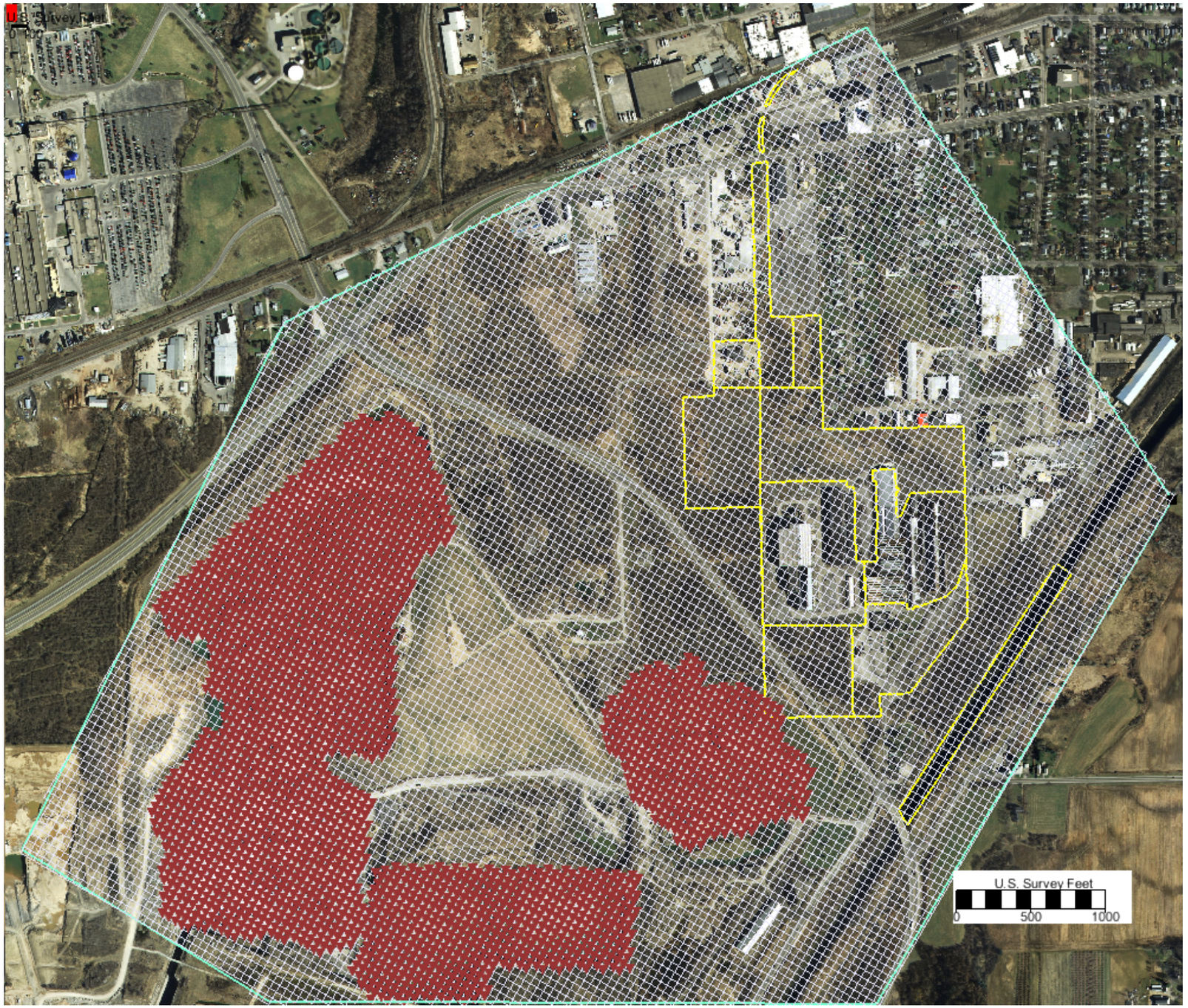
GENERAL HEAD BOUNDARY

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

CALIBRATED MODEL GRID AND BOUNDARY CONDITIONS FOR DEEP GROUNDWATER (LAYER 2)

GUTERL SPECIALITY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No:
12/09/2013	**Graphic**	**6-3**



NOTES:

ACTIVE MODEL DOMAIN CELLS ARE SHOWN IN WHITE GRID.

LEGEND:

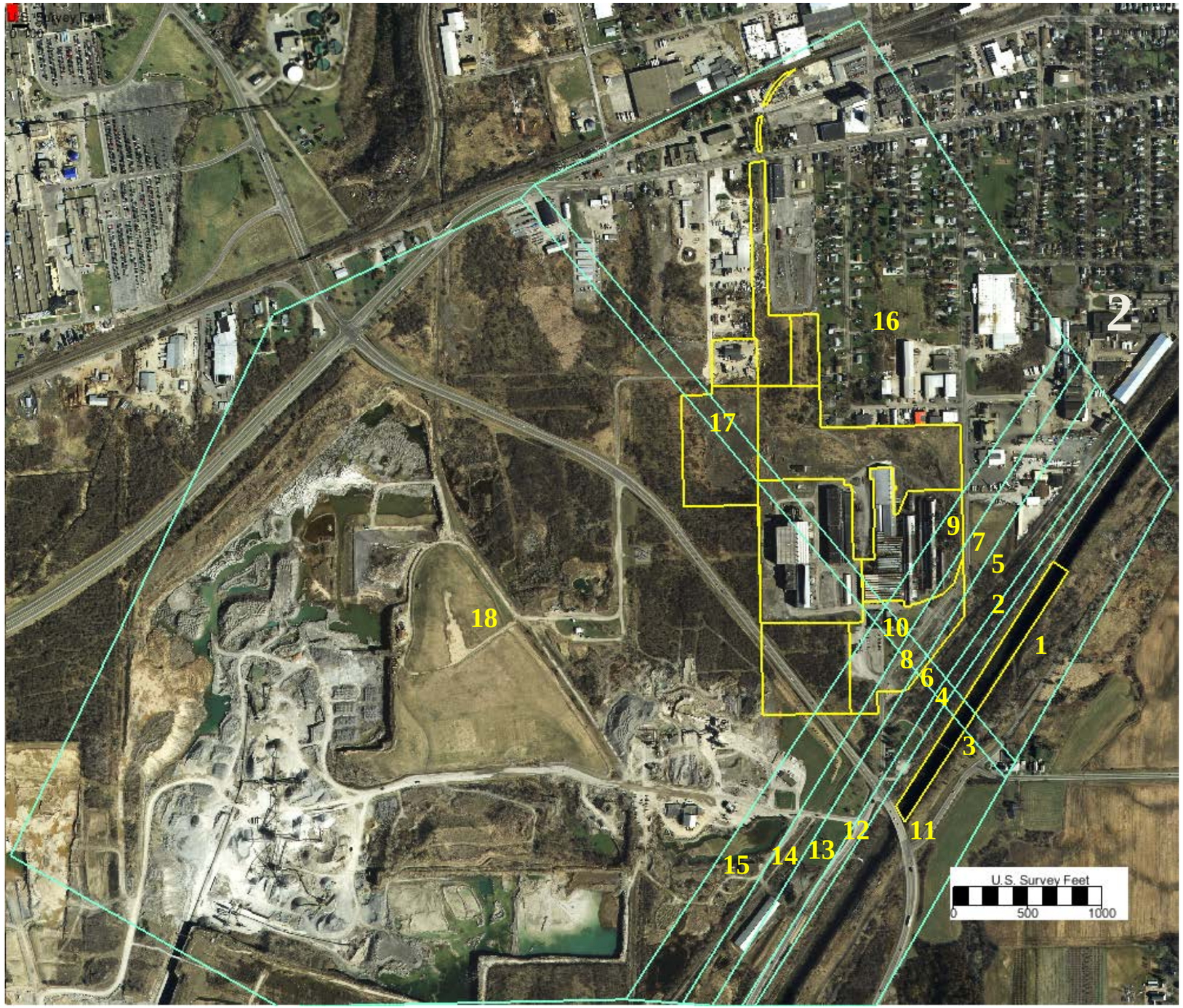
GENERAL HEAD BOUNDARY

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

CALIBRATED MODEL GRID AND BOUNDARY CONDITIONS FOR LAYER 3

GUTERL SPECIALITY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No:
12/09/2013	**Graphic**	**6-4**



LEGEND:

Zone Number	Hydraulic Conductivity, ft/day		
	Layer 1	Layer 2	Layer 3
1	19.8	1.5	0.1
2	9.6	0.7	0.1
3	42.0	23.2	0.1
4	42.0	22.9	0.1
5	6.7	2.2	0.1
6	41.6	14.8	0.1
7	23.5	0.1	0.1
8	21.1	11.6	0.1
9	15.0	0.3	0.1
10	69.9	7.7	0.1
11	13.1	0.6	0.1
12	5.7	2.0	0.1
13	13.8	2.4	0.1
14	54.4	0.2	0.1
15	26.2	0.2	0.1
16	16.2	0.1	0.1
17	30.0	53.3	0.1
18	11.8	1.5	0.1

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

CALIBRATED MODEL HYDRAULIC CONDUCTIVITY ZONES

GUTERL SPECIALITY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No:
12/09/2013	**Graphic**	**6-5**

LEGEND:

592 GROUNDWATER ELEVATION CONTOUR, WITH GROUNDWATER ELEVATION IN FEET ABOVE MSL

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

N
W E
S

CALIBRATED MODEL GROUNDWATER ELEVATION CONTOURS FOR SHALLOW GROUNDWATER

GUTERL SPECIALITY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No:
07/01/2014	**Graphic**	**6-6**

B

LEGEND:

592 — GROUNDWATER ELEVATION CONTOUR, WITH GROUNDWATER ELEVATION IN FEET ABOVE MSL

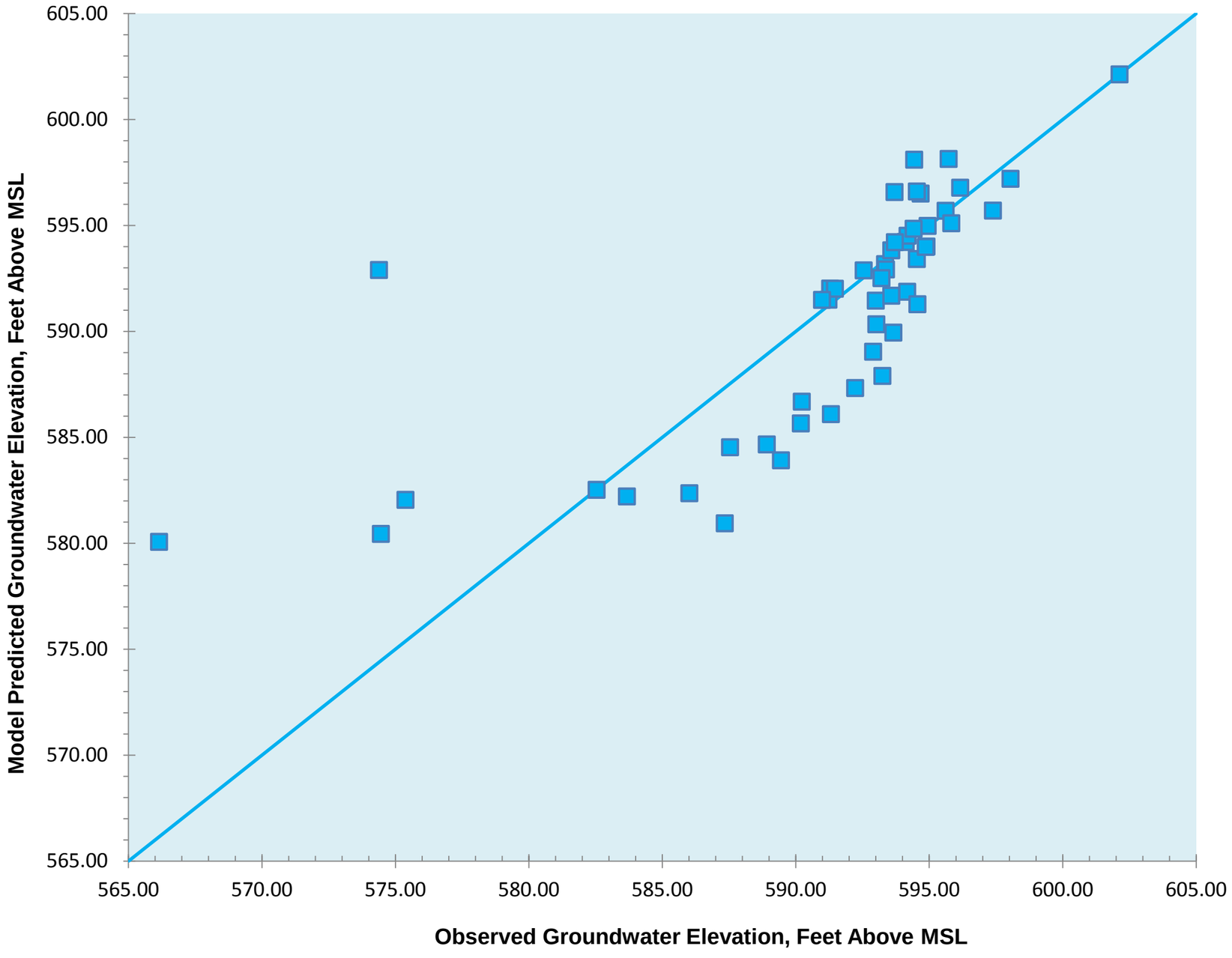
US Army Corps of Engineers
Buffalo District
BUILDING STRONG

N
W
E
S

CALIBRATED MODEL GROUNDWATER ELEVATION CONTOURS FOR DEEP GROUNDWATER

GUTERL SPECIALITY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No:
07/01/2014	**Graphic**	**6-7**



NOTES:

1. FOR AN IDEAL CALIBRATION WITH ZERO ERROR, THE DATA ARE EXPECTED TO BE ALIGNED ALONG THE 45 DEGREE LINE.

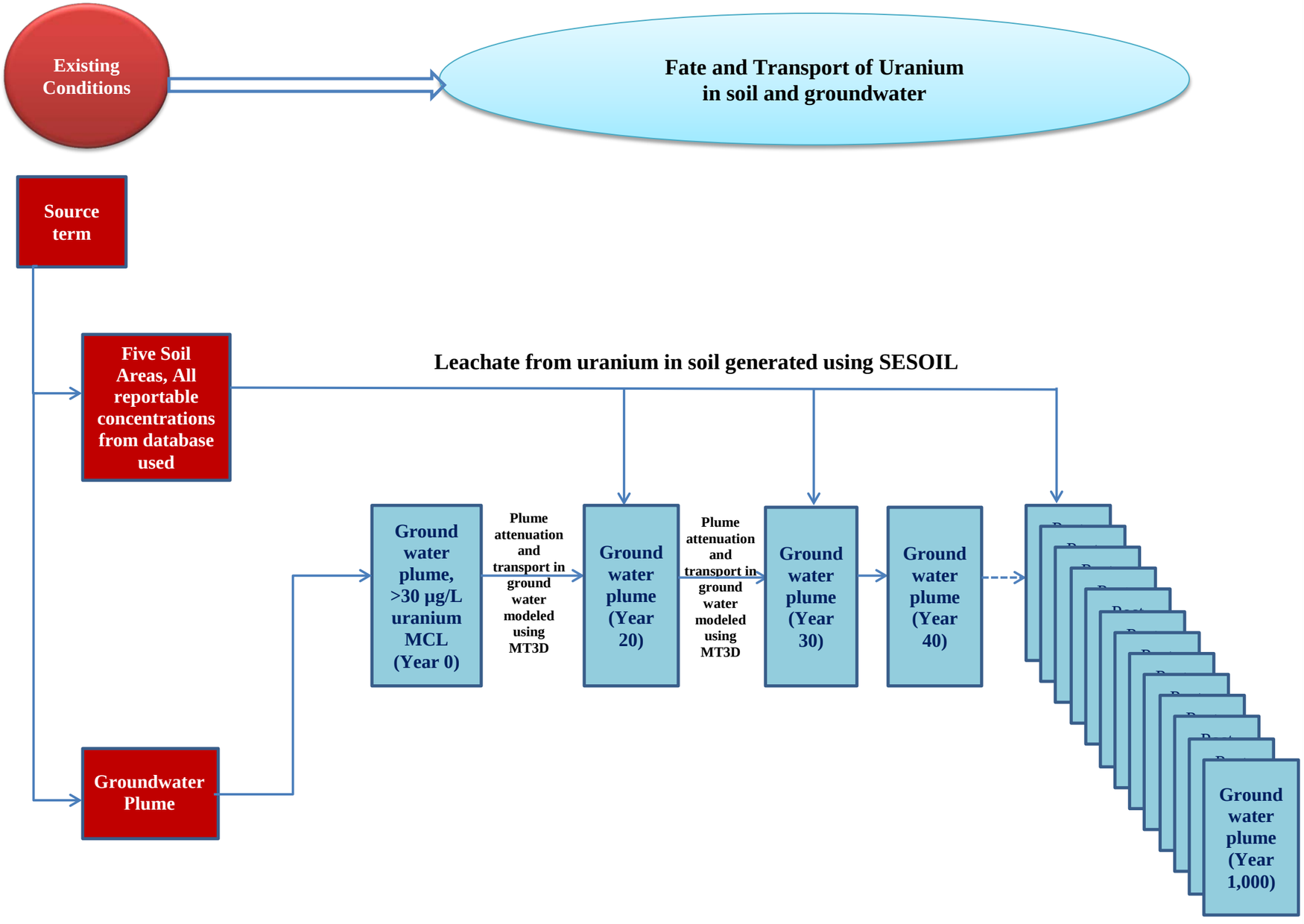
2. DEVIATIONS FROM THE 45 DEGREE LINE REPRESENT MODEL CALIBRATIONS ERRORS.

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

SCATTER PLOT SHOWING RELATIONSHIP BETWEEN OBSERVED AND MODELED GROUNDWATER ELEVATIONS

GUTERL SPECIALITY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No:
07/01/2014	**Graphic**	**6-8**

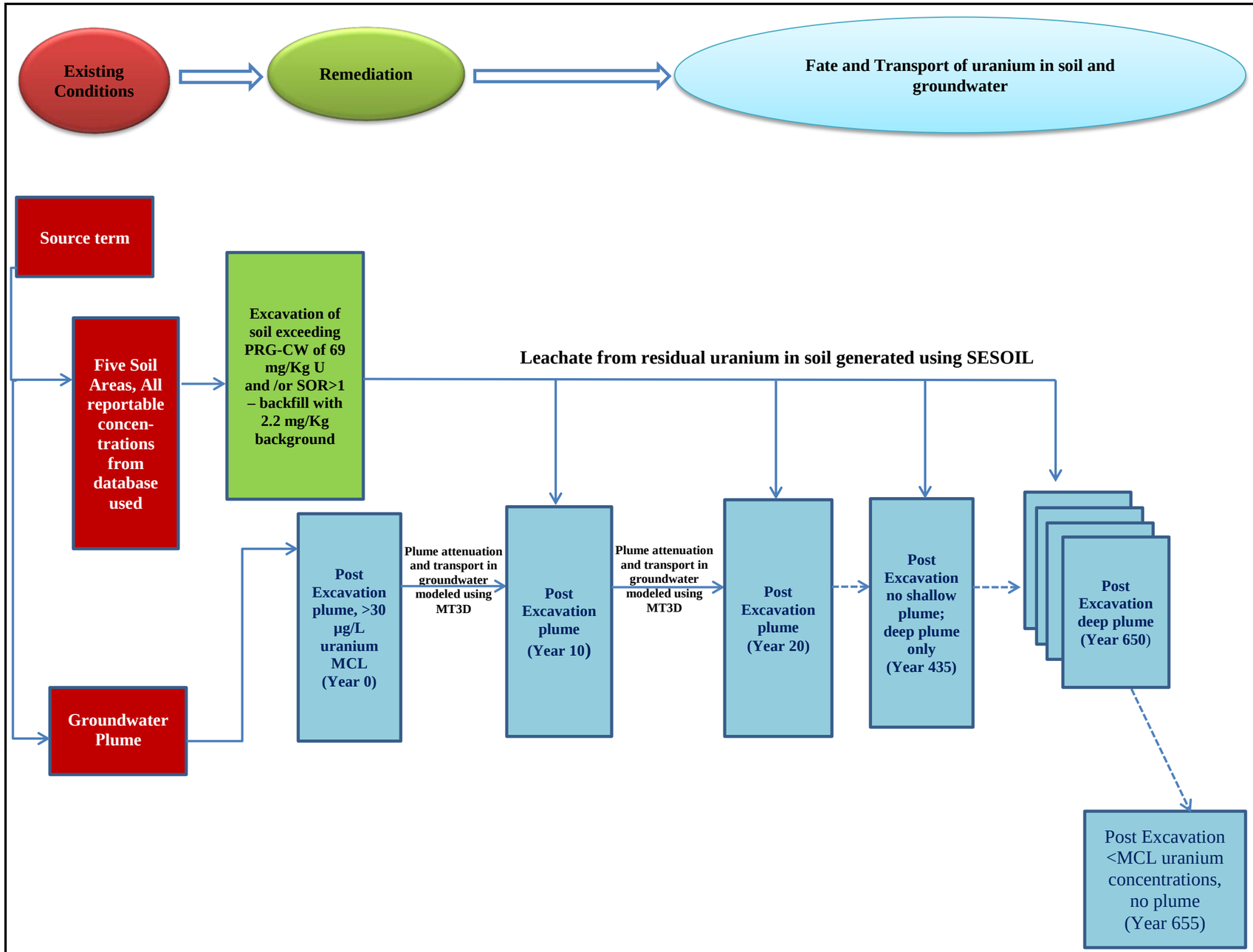


US Army Corps of Engineers
Buffalo District
BUILDING STRONG

URANIUM FATE AND TRANSPORT MODELING APPROACH FOR NO ACTION ALTERNATIVE EVALUATION

GUTERL SPECIALITY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No:
07/01/2014	**None**	**7-1**

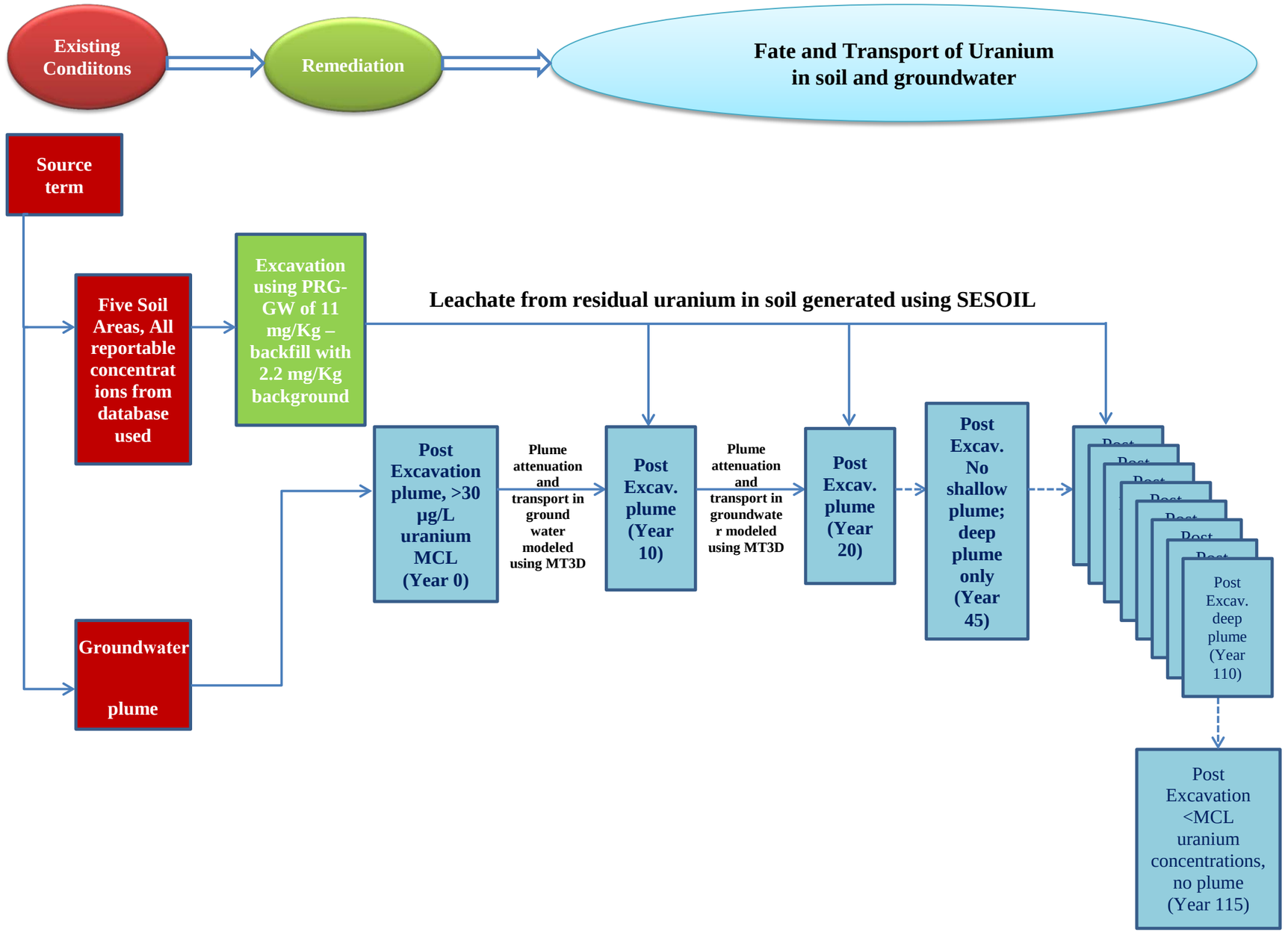


US Army Corps of Engineers
Buffalo District
BUILDING STRONG

URANIUM FATE AND TRANSPORT MODELING APPROACH FOR SOIL REMOVAL TO CONSTRUCTION WORKER STANDARDS

GUTERL SPECIALITY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No:
07/21/2014	**None**	**7-2**

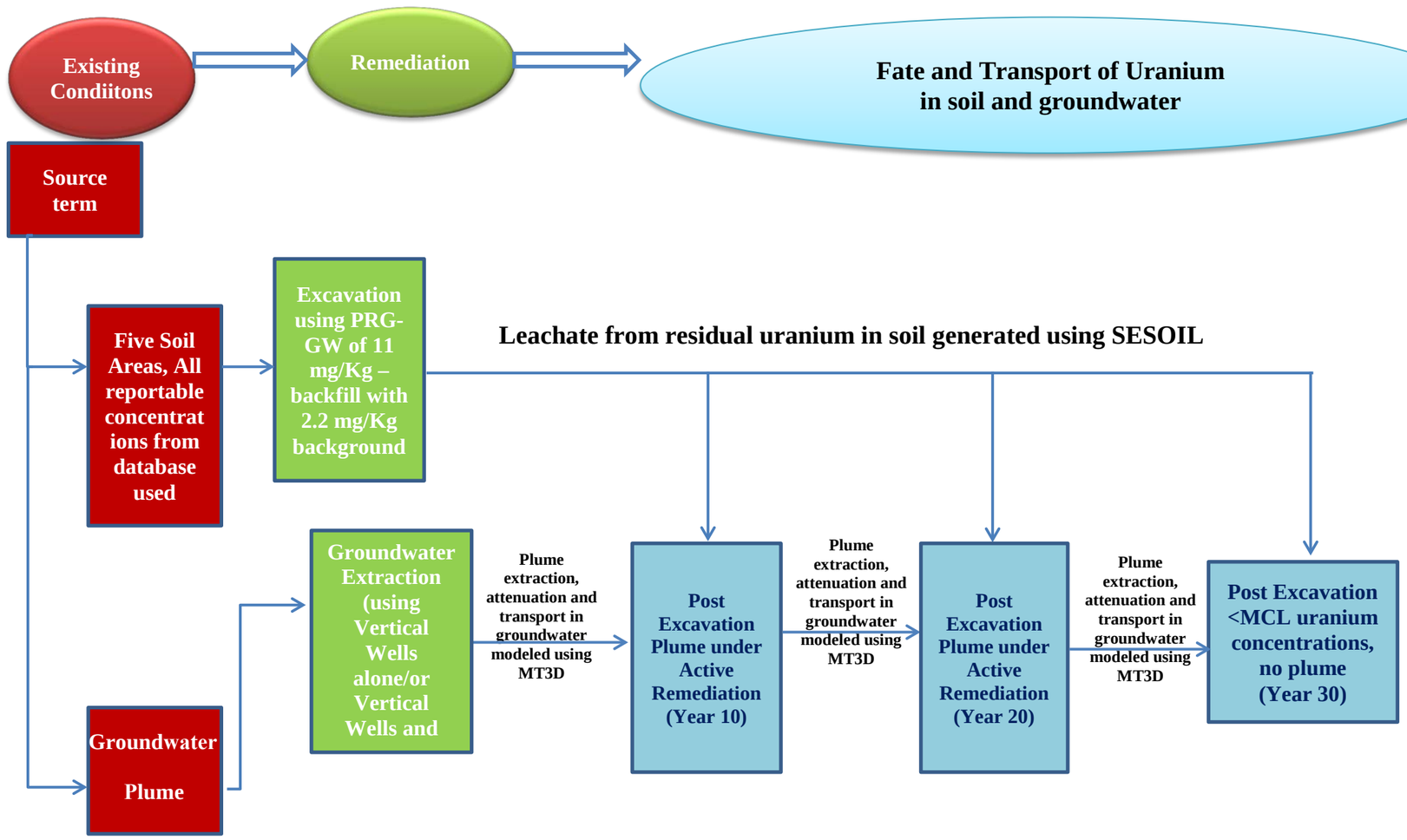


US Army Corps of Engineers
Buffalo District
BUILDING STRONG

URANIUM FATE AND TRANSPORT MODELING APPROACH FOR MNA ALTERNATIVE EVALUATION

GUTERL SPECIALITY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No:
07/21/2014	**None**	**7-3**



US Army Corps of Engineers
Buffalo District
BUILDING STRONG

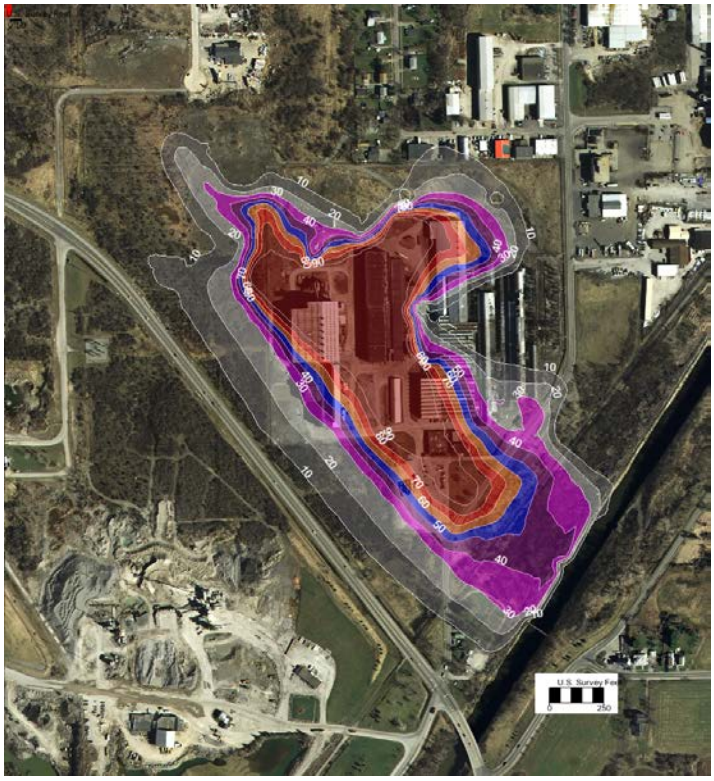
URANIUM FATE AND TRANSPORT MODELING APPROACH FOR GROUNDWATER RECOVERY BASED ALTERNATIVES EVALUATION

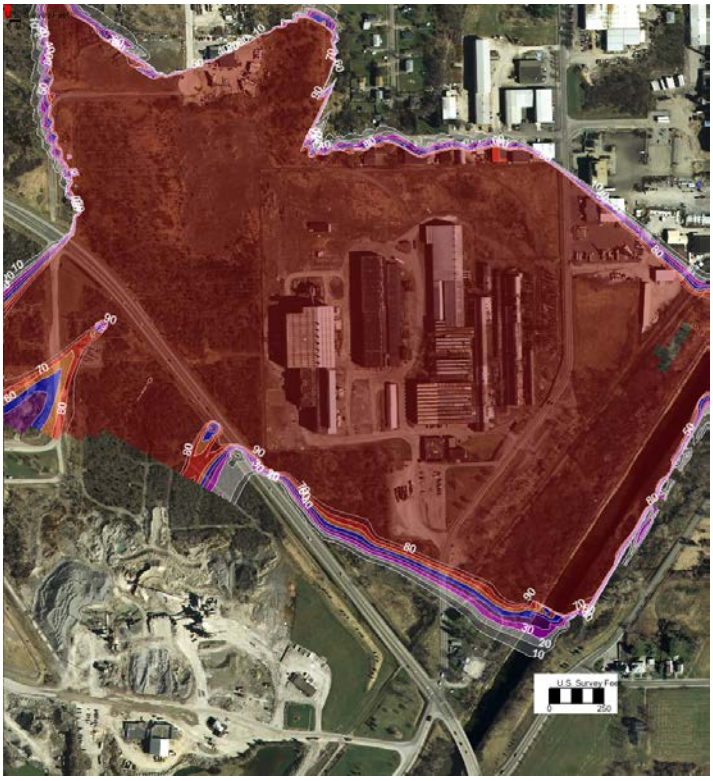
GUTERL SPECIALITY STEEL CORPORATION
LOCKPORT, NY

Date:	Scale:	Figure No:
07/21/2014	**None**	**7-4**

Year 1 - Current Plume

Year 320 - Maximum Extent





Uranium (ug/L) 300 180 90 60 30 10

Year 600 - Degrading Plume

Year 780 - MCL Achieved

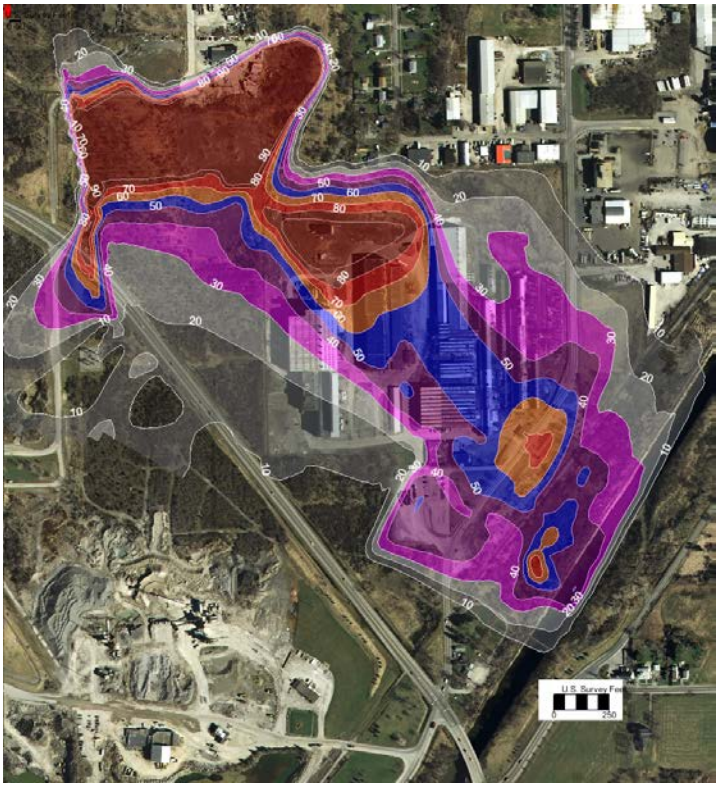
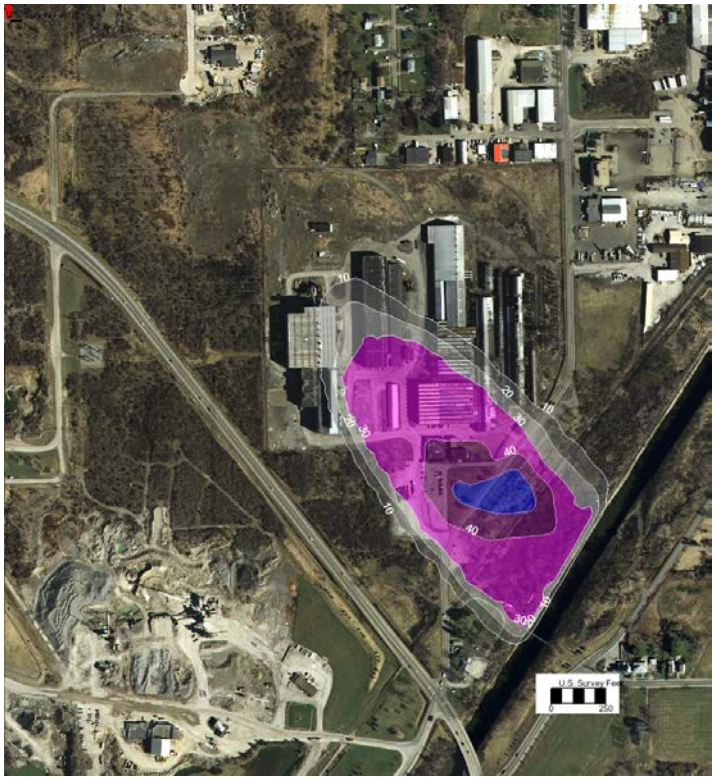
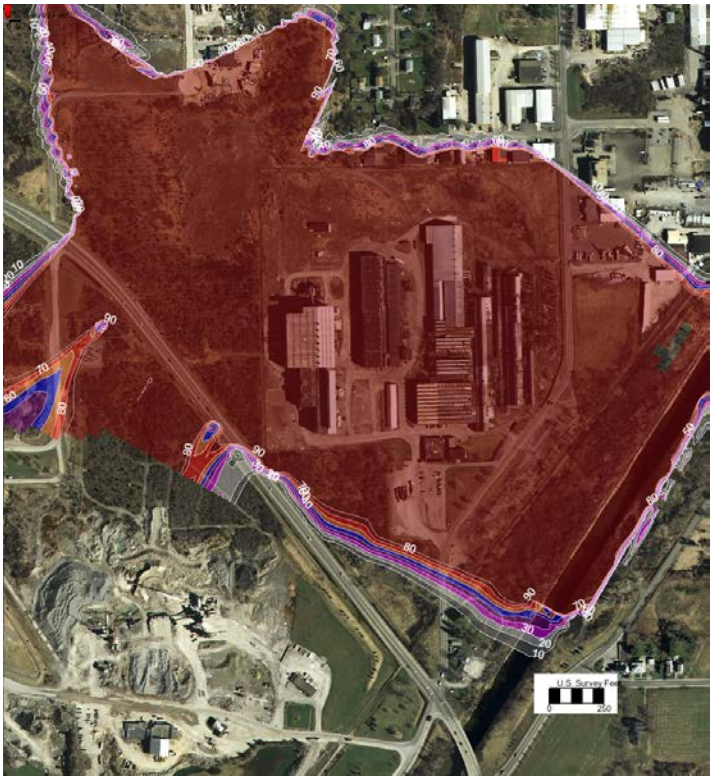


Figure 7-5. Alternative G1 - No Action Plume Prediction Shallow Aquifer

Year 1 - Current Plume

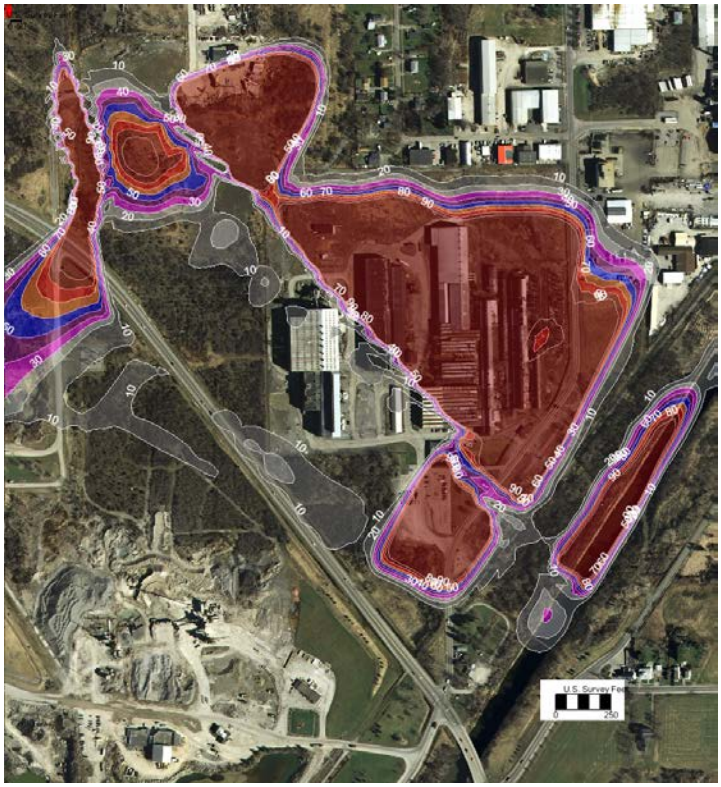


Year 430 - Maximum Extent



Uranium (ug/L) 300 180 90 60 30 10

Year 800 - Degrading Plume



Year 1,000 – Plume Remains

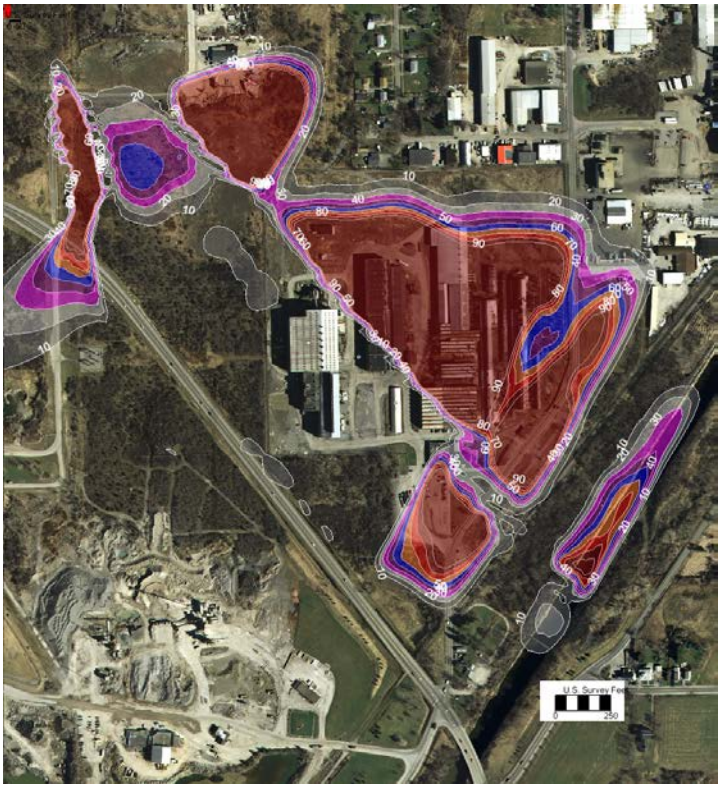
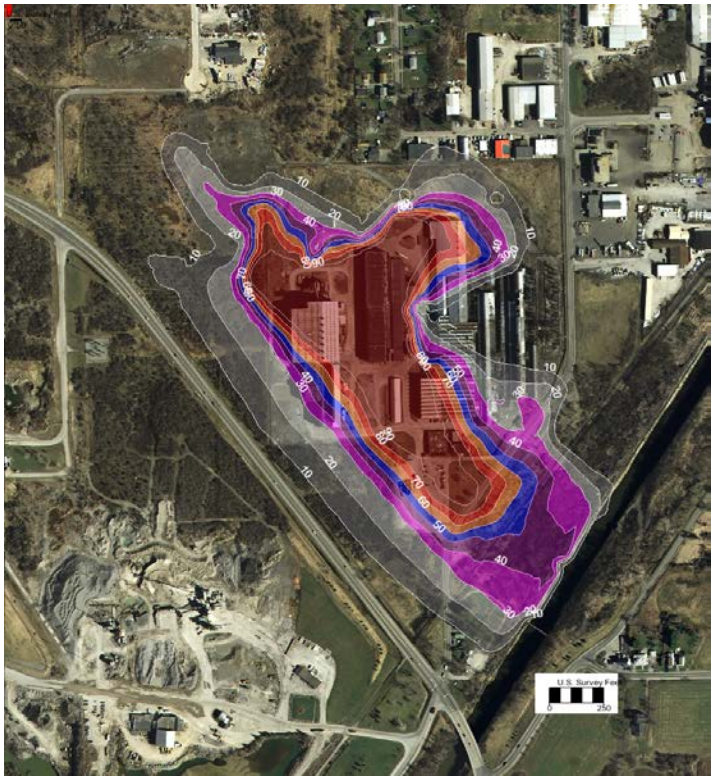
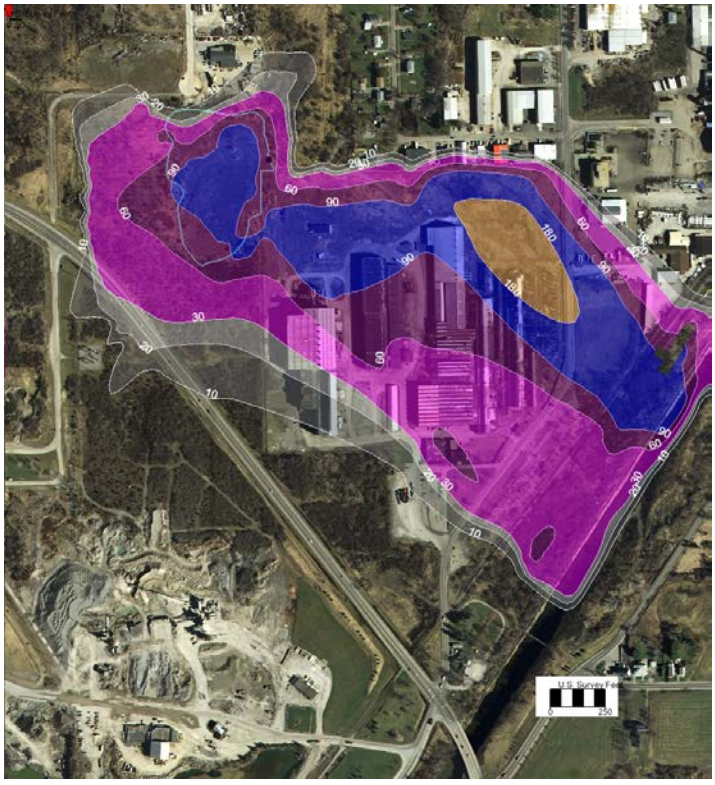


Figure 7-6. Alternative G1 - No Action Plume Prediction Deep Aquifer

Year 1 - Current Plume

Year 50 - Maximum Extent

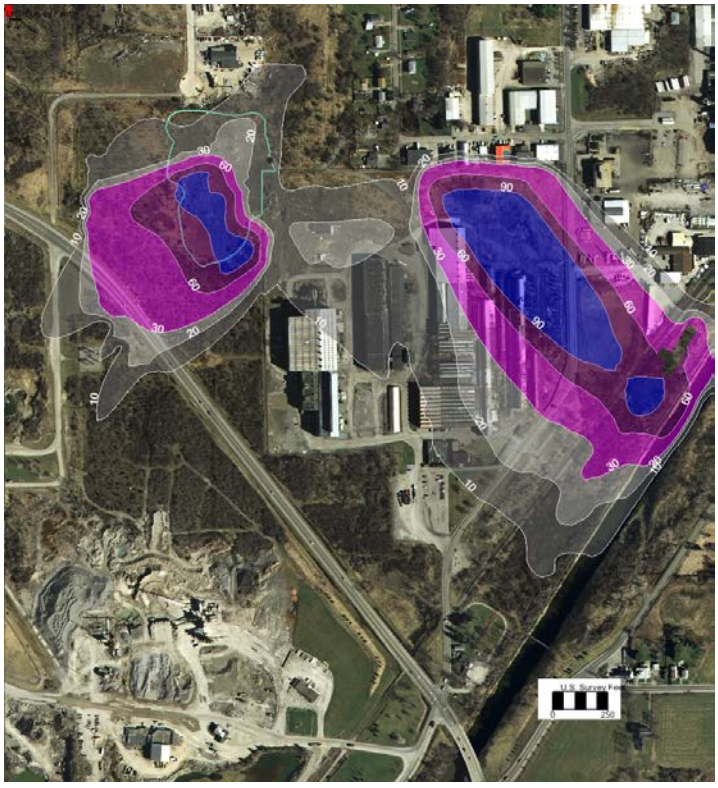




Uranium (ug/L) 300 180 90 60 30 10

Year 200 - Degrading Plume

Year 430 - MCL Achieved



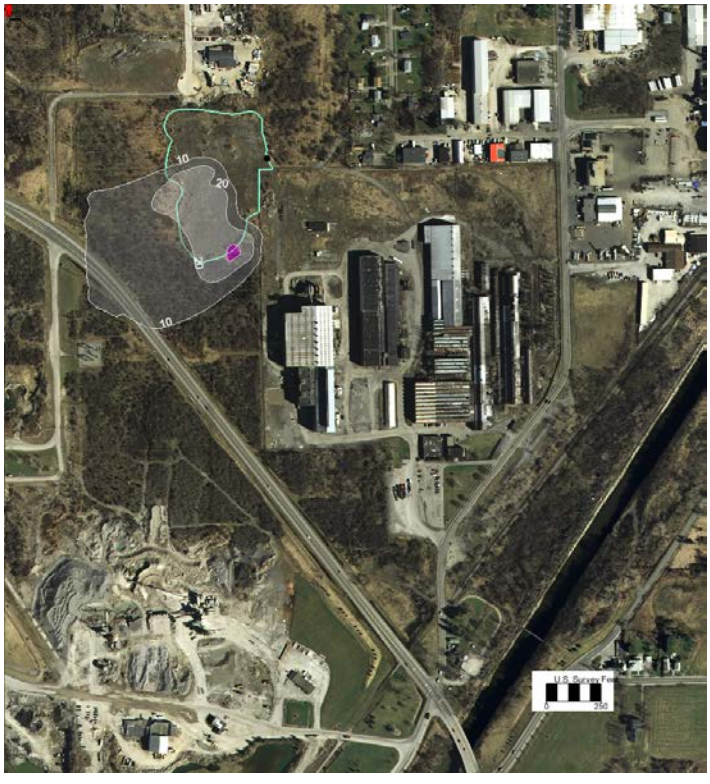
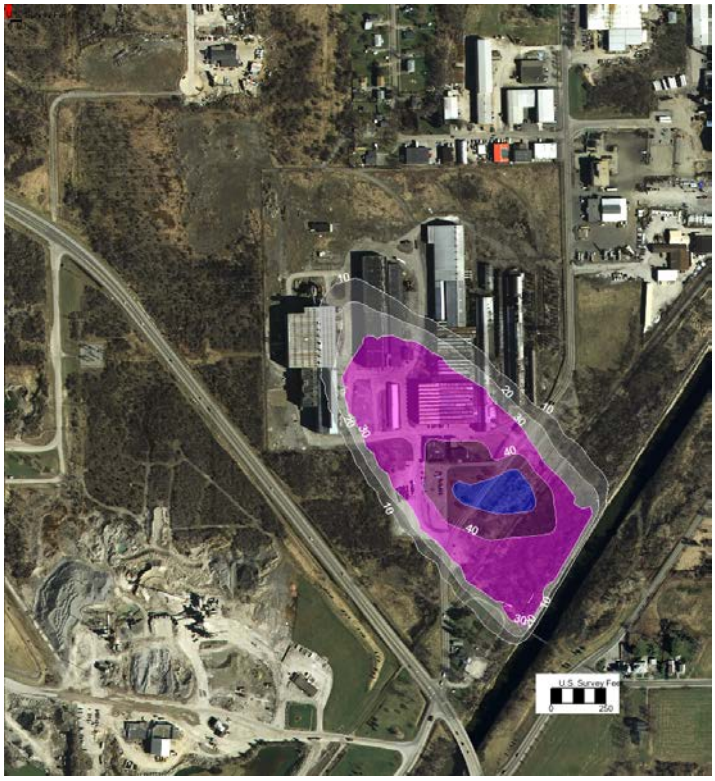
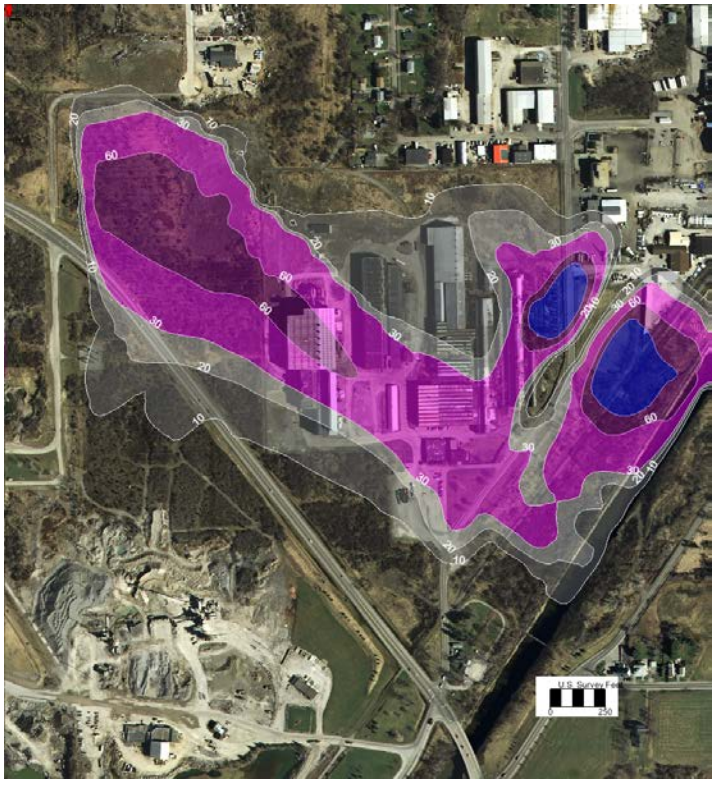


Figure 7-7. Alternative G2 – Construction Worker PRG and MNA Shallow Aquifer

Year 1 - Current Plume

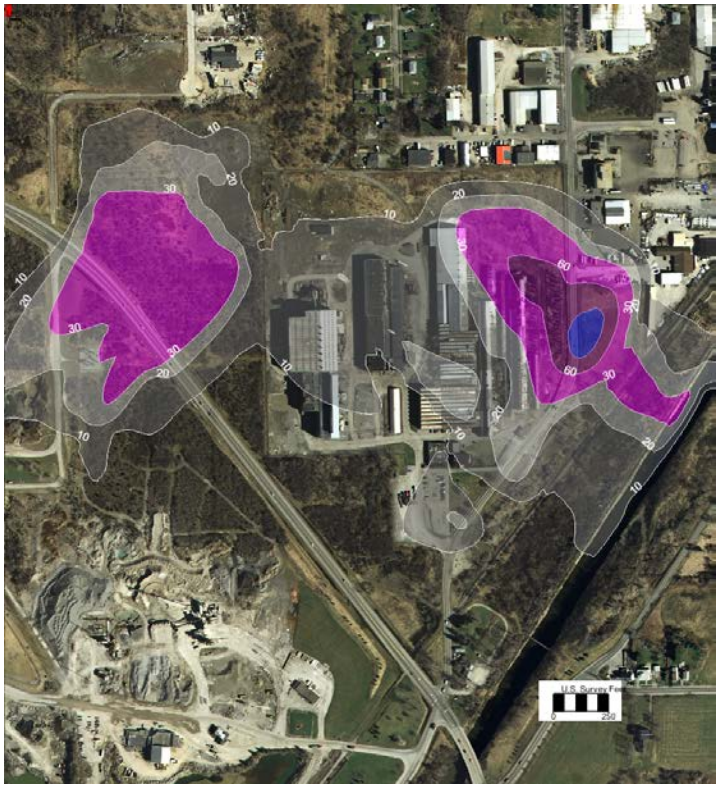


Year 100 - Maximum Extent



Uranium (ug/L) 300 180 90 60 30 10

Year 300 - Degrading Plume

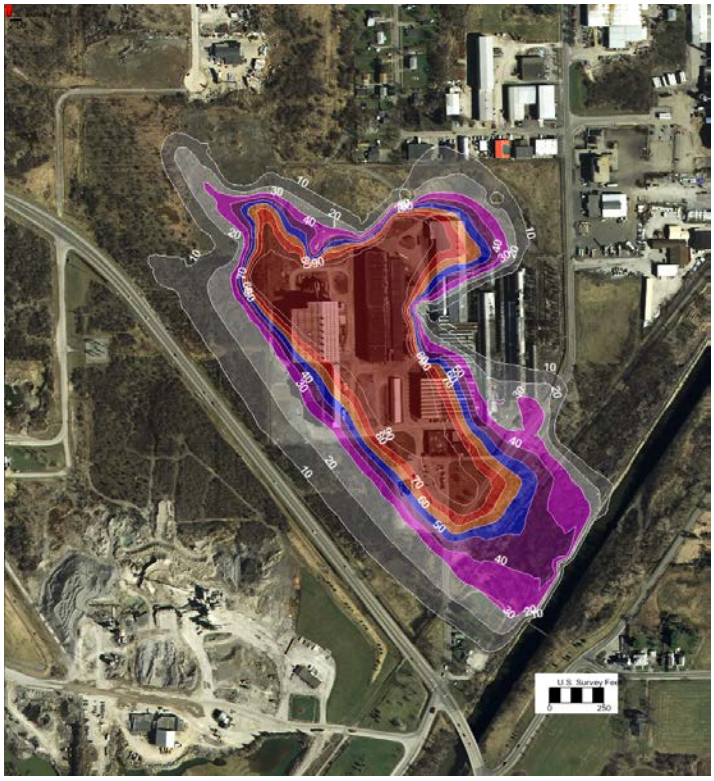


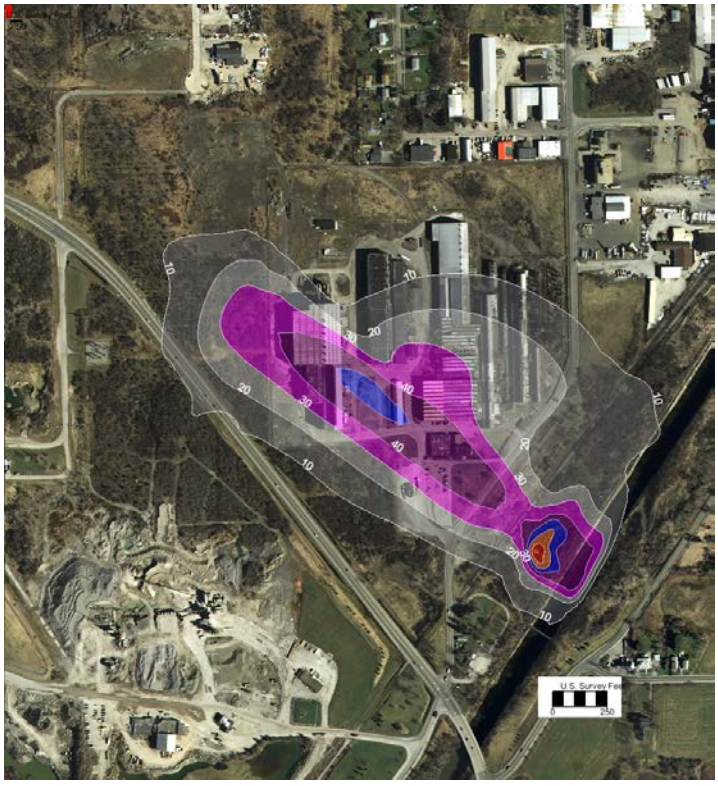
Year 660 - MCL Achieved

Figure 7-8. Alternative G2 – Construction Worker PRG and MNA Deep Aquifer

Year 1 - Current Plume

Year 10 – Degrading Plume





Uranium (ug/L) 300 180 90 60 30 10

Year 20 - Degrading Plume

Year 50 - MCL Achieved

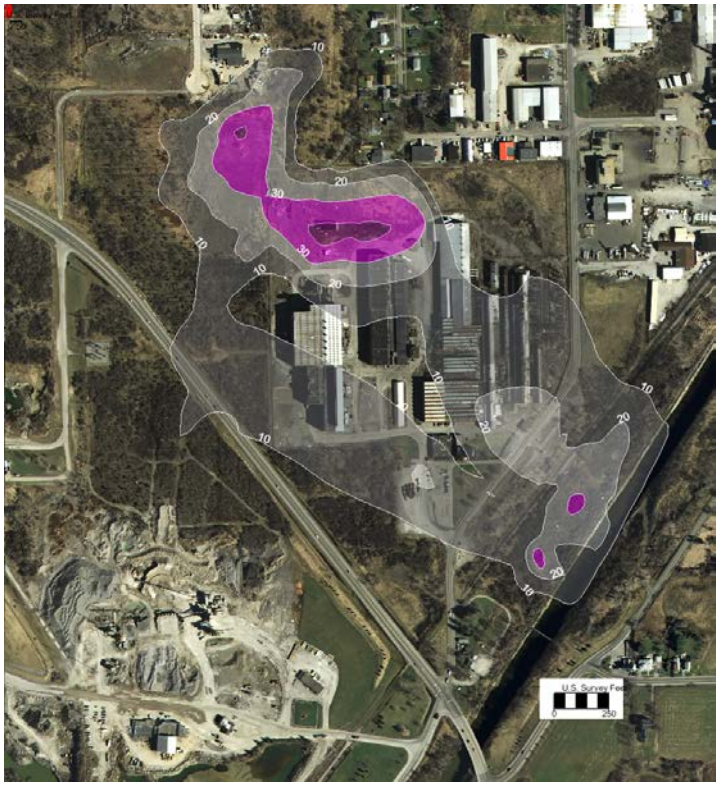
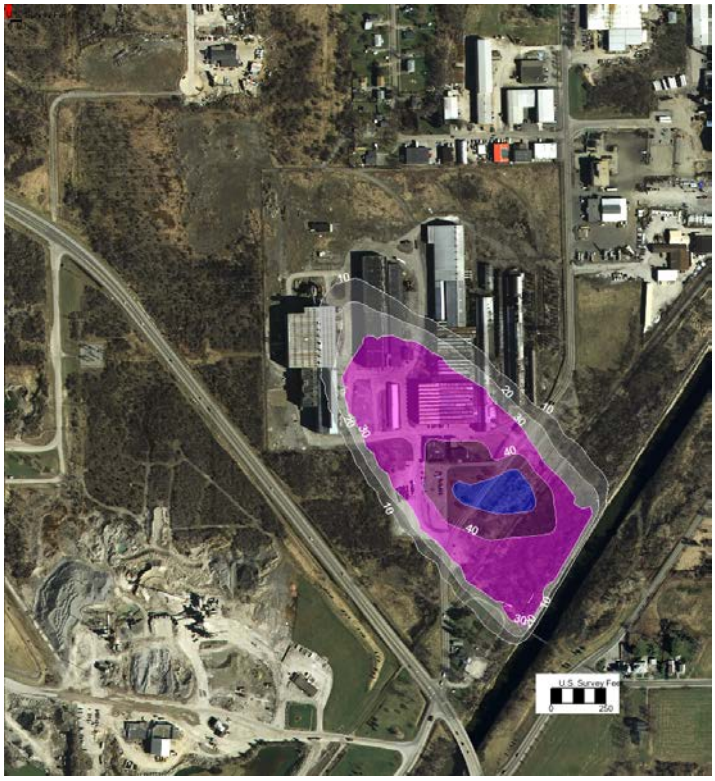
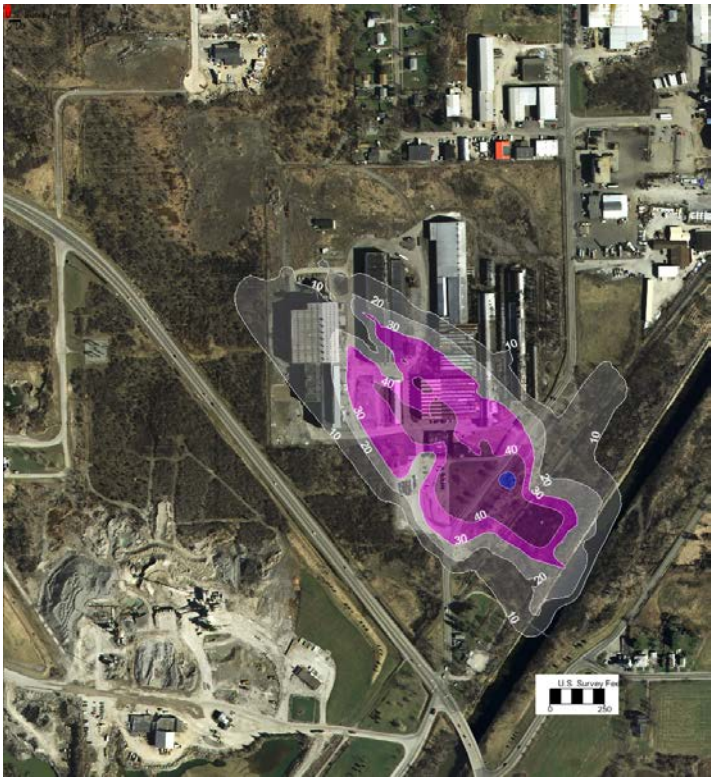


Figure 7-9. Alternative G3 – Groundwater Protection PRG and MNA Shallow Aquifer

Year 1 - Current Plume

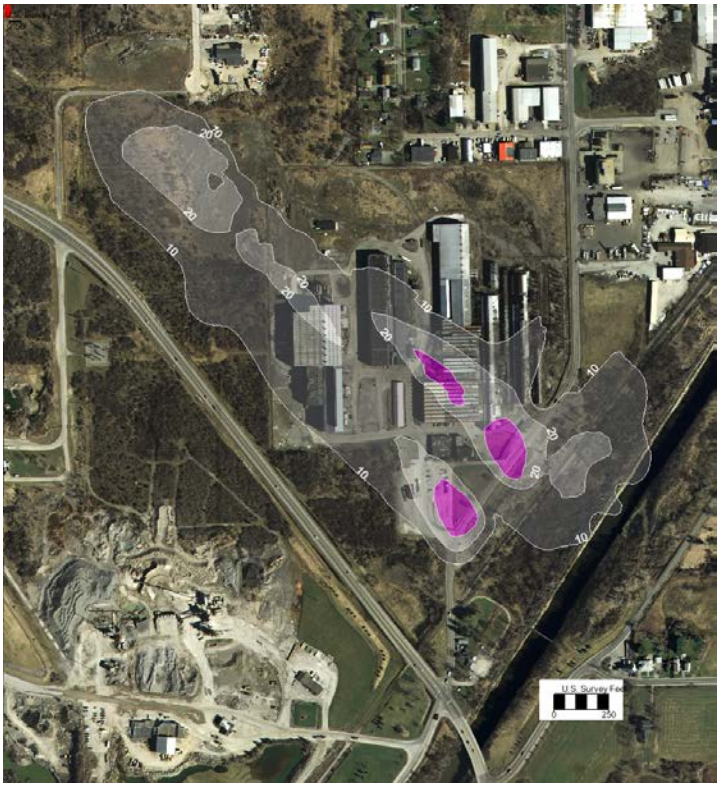


Year 10 – Degrading Plume



Uranium (ug/L) 300 180 90 60 30 10

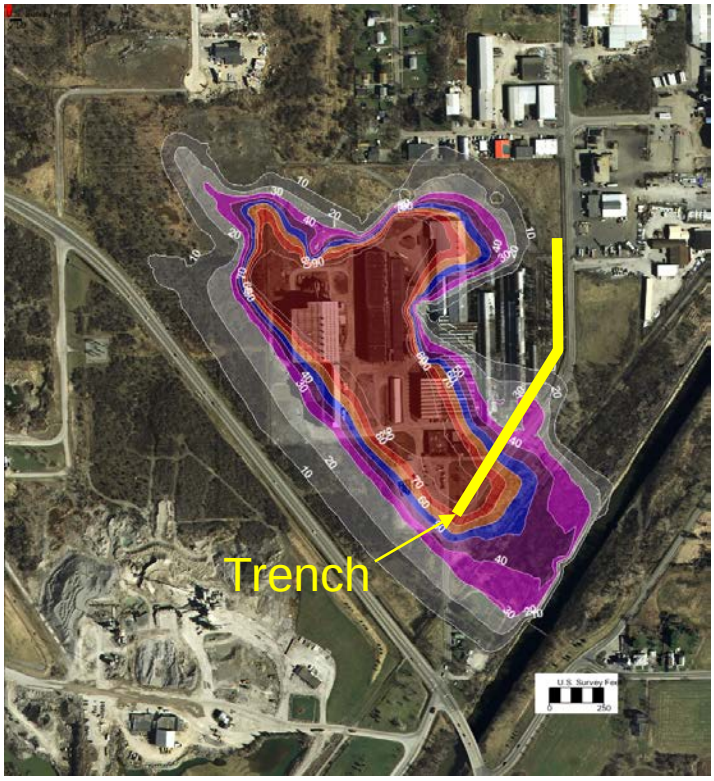
Year 60 - Degrading Plume



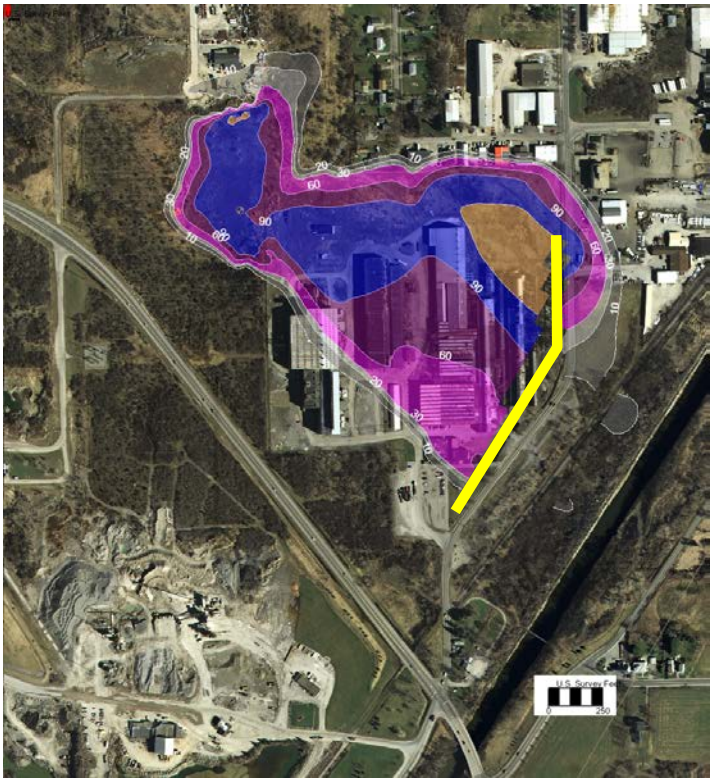
Year 120 - MCL Achieved

Figure 7-10. Alternative G3 – Groundwater Protection PRG and MNA Deep Aquifer

Year 1 - Current Plume

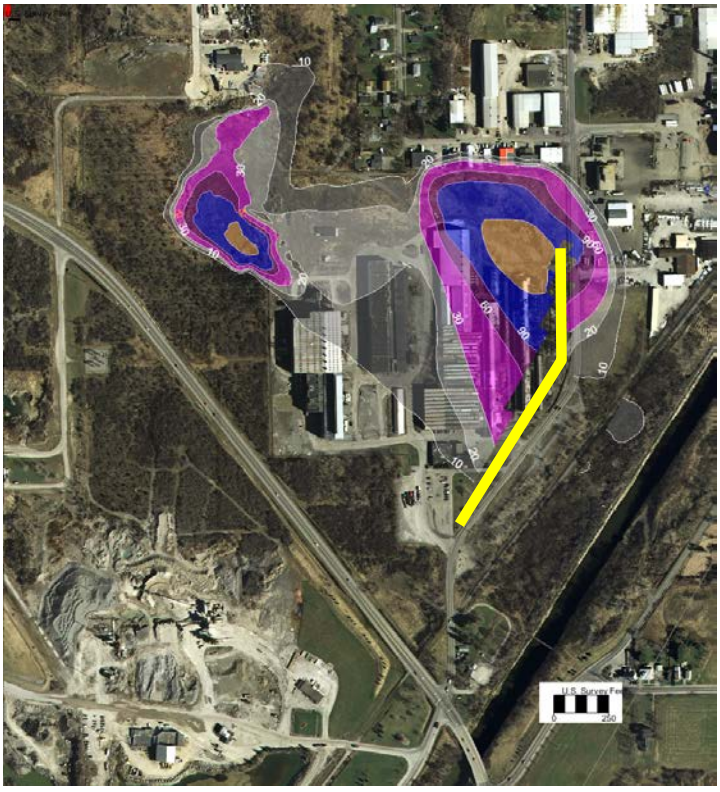


Year 40 – Maximum Extent



Uranium (ug/L) 300 180 90 60 30 10

Year 160 - Degrading Plume



Year 500 - MCL Achieved

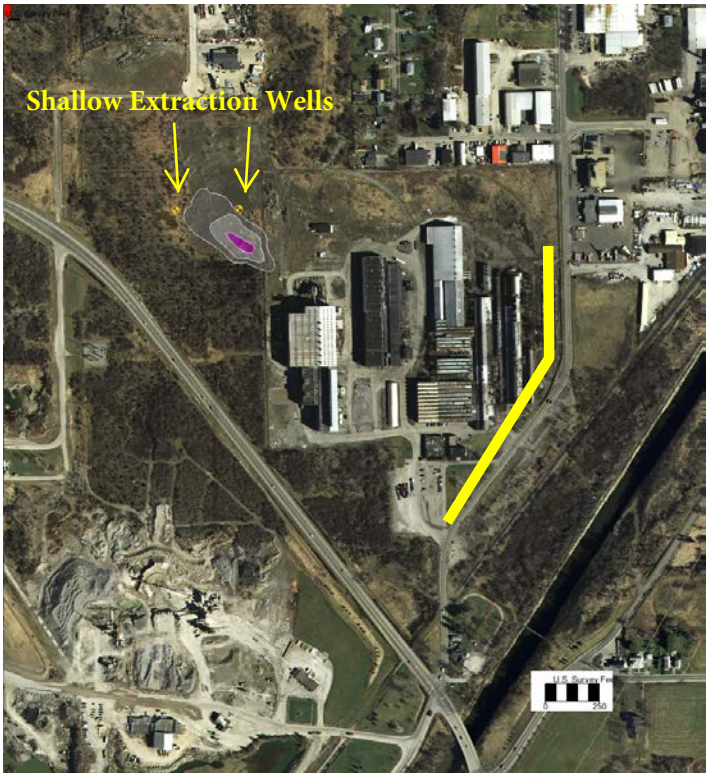
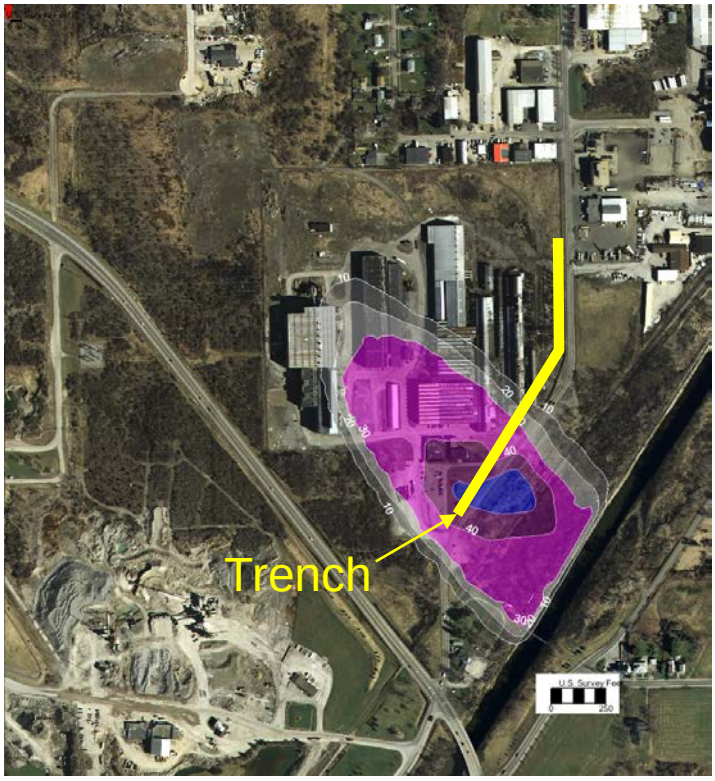
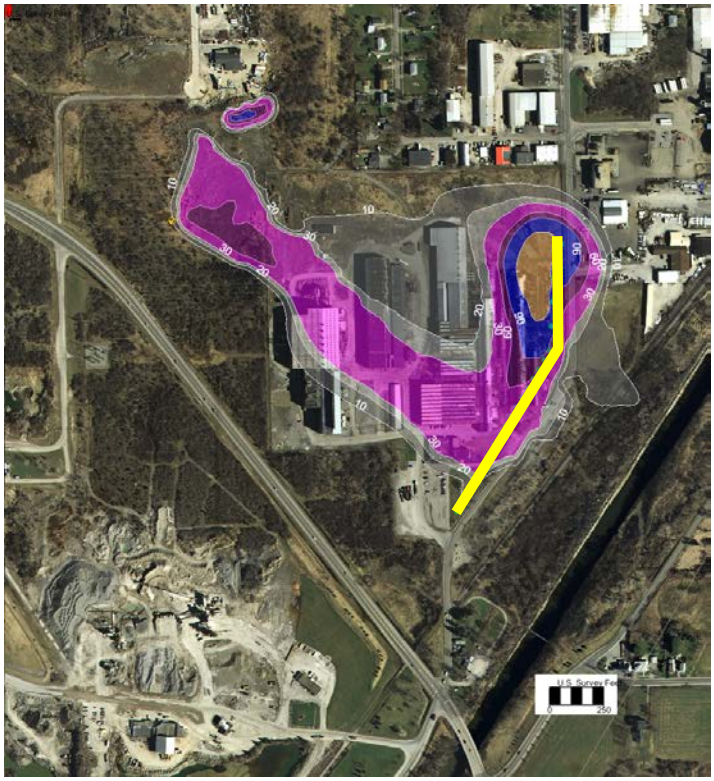


Figure 7-11. Alternative G4 – Construction Worker PRG, Rubblized Trench, and Pumping Wells - Shallow Aquifer

Year 1 - Current Plume

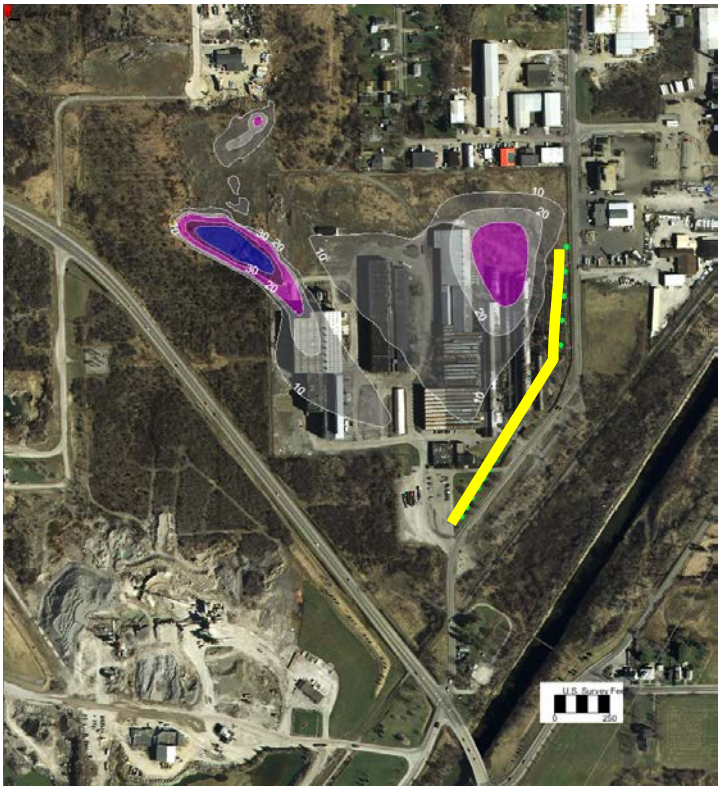


Year 100 – Maximum Extent



Uranium (ug/L) 300 180 90 60 30 10

Year 400 - Degrading Plume



Year 580 - MCL Achieved

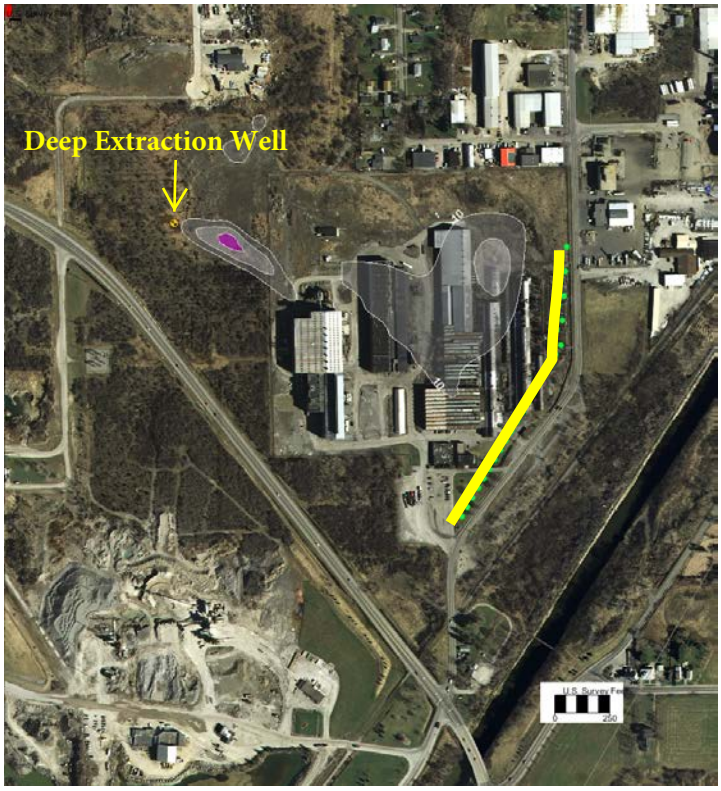
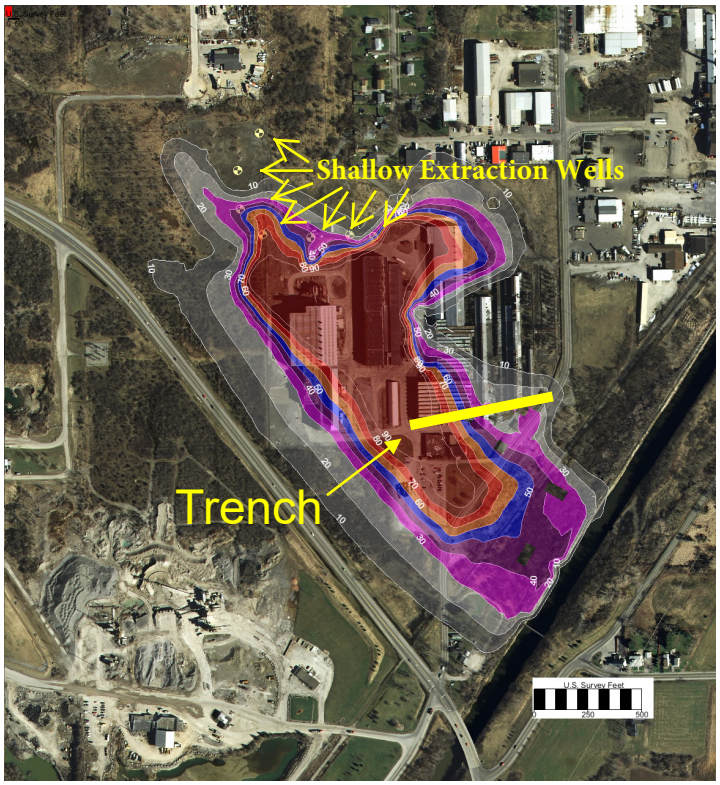


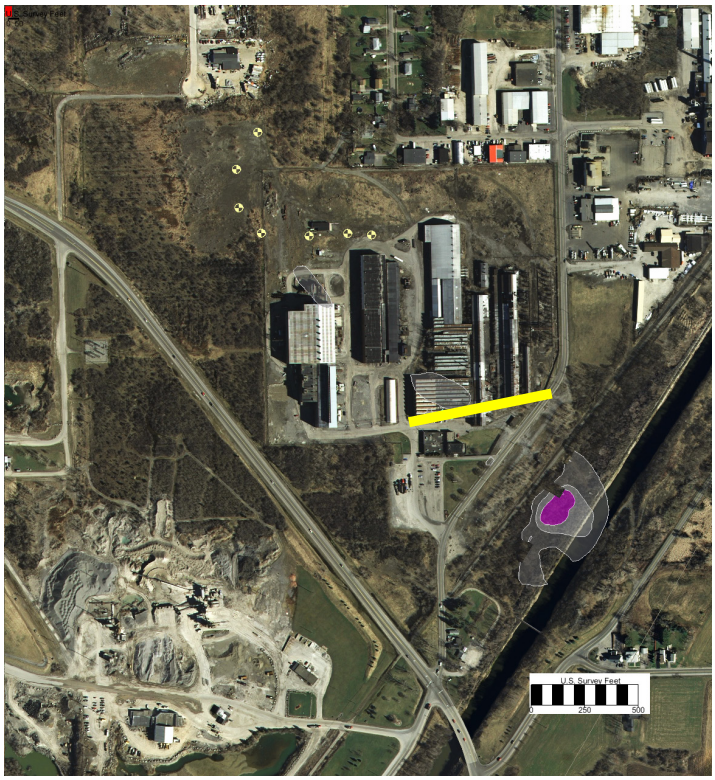
Figure 7-12. Alternative G4 – Construction Worker PRG, Rubblized Trench, and Pumping Wells - Deep Aquifer

Year 1 - Current Plume

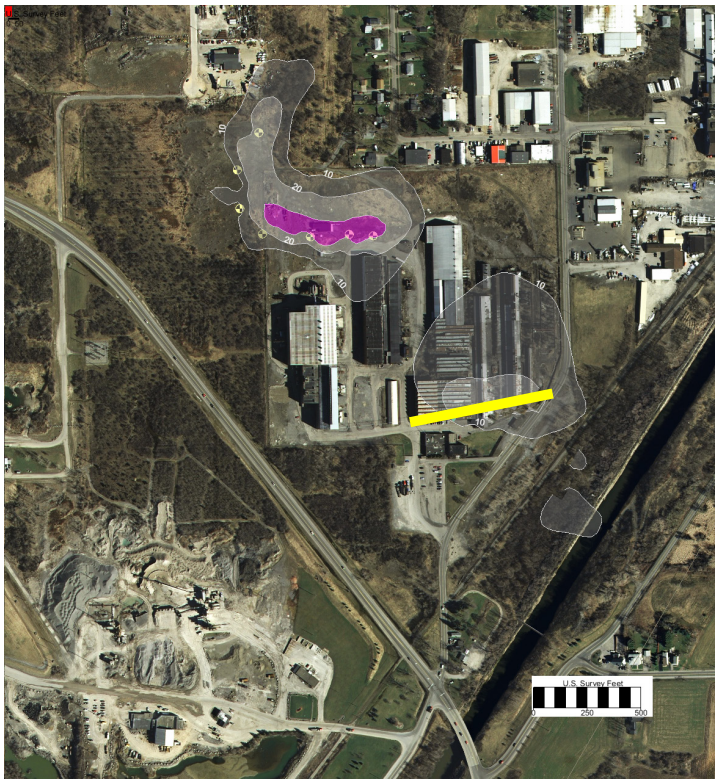


Uranium (ug/L) 300 180 90 60 30 10

Year 10 – Degrading Plume



Year 20 - Degrading Plume



Year 30 - MCL Achieved

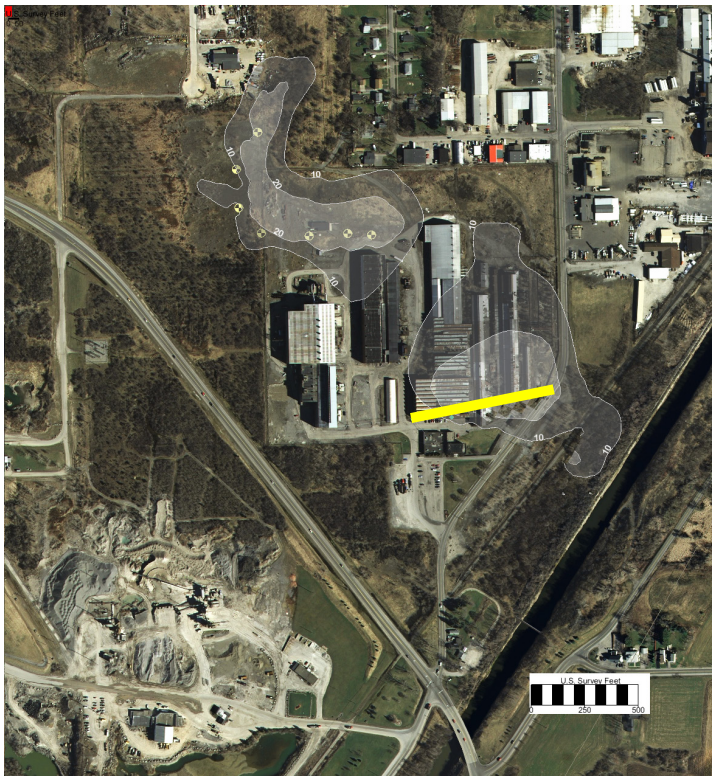
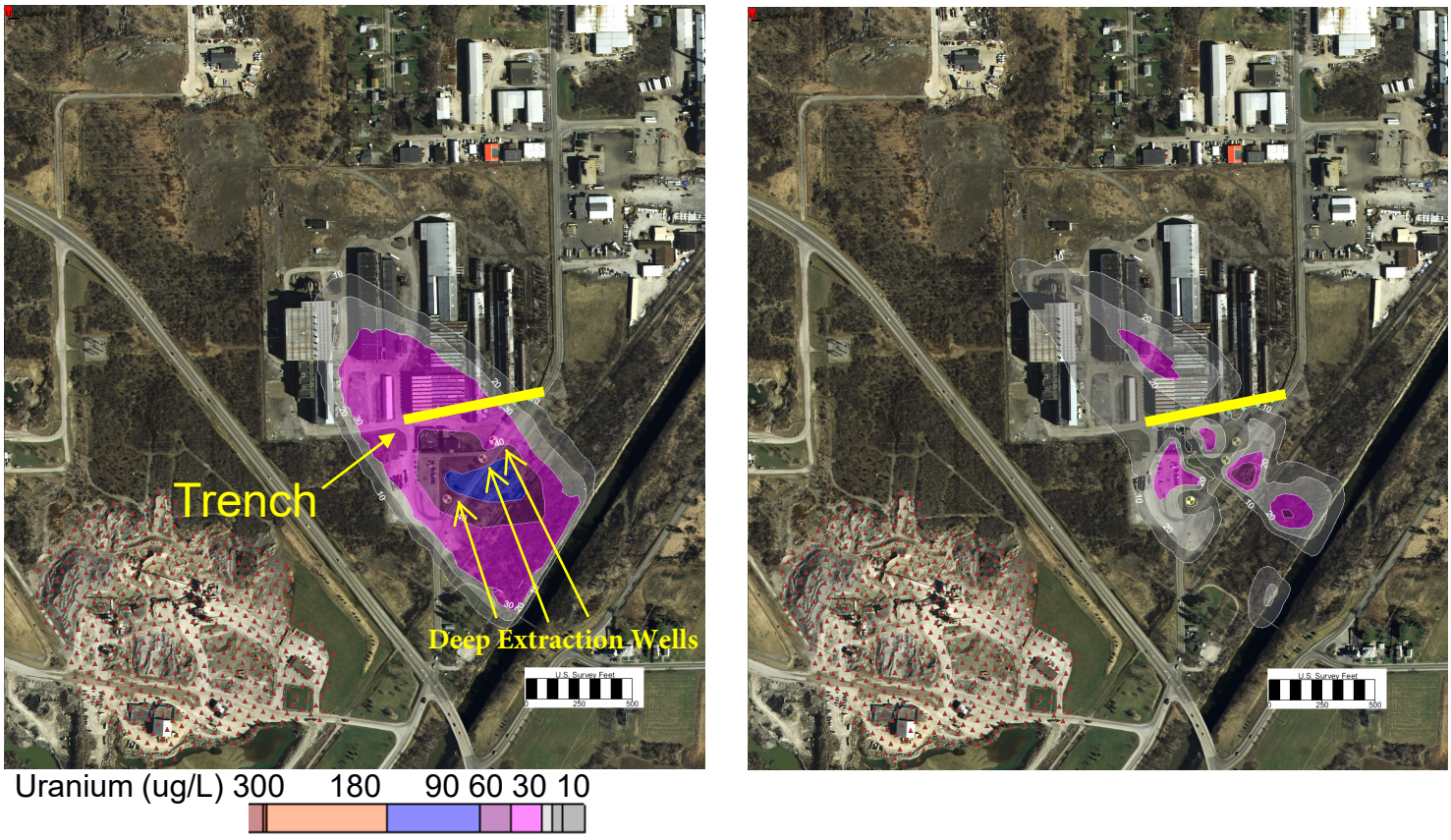


Figure 7-13. Alternative G5 – Groundwater Protection PRG, Rubblized Trench, and Pumping Wells - Shallow Aquifer

Year 1 - Current Plume

Year 10 – Degrading Plume



Uranium (ug/L) 300 180 90 60 30 10

Year 20 - Degrading Plume

Year 30 - MCL Achieved

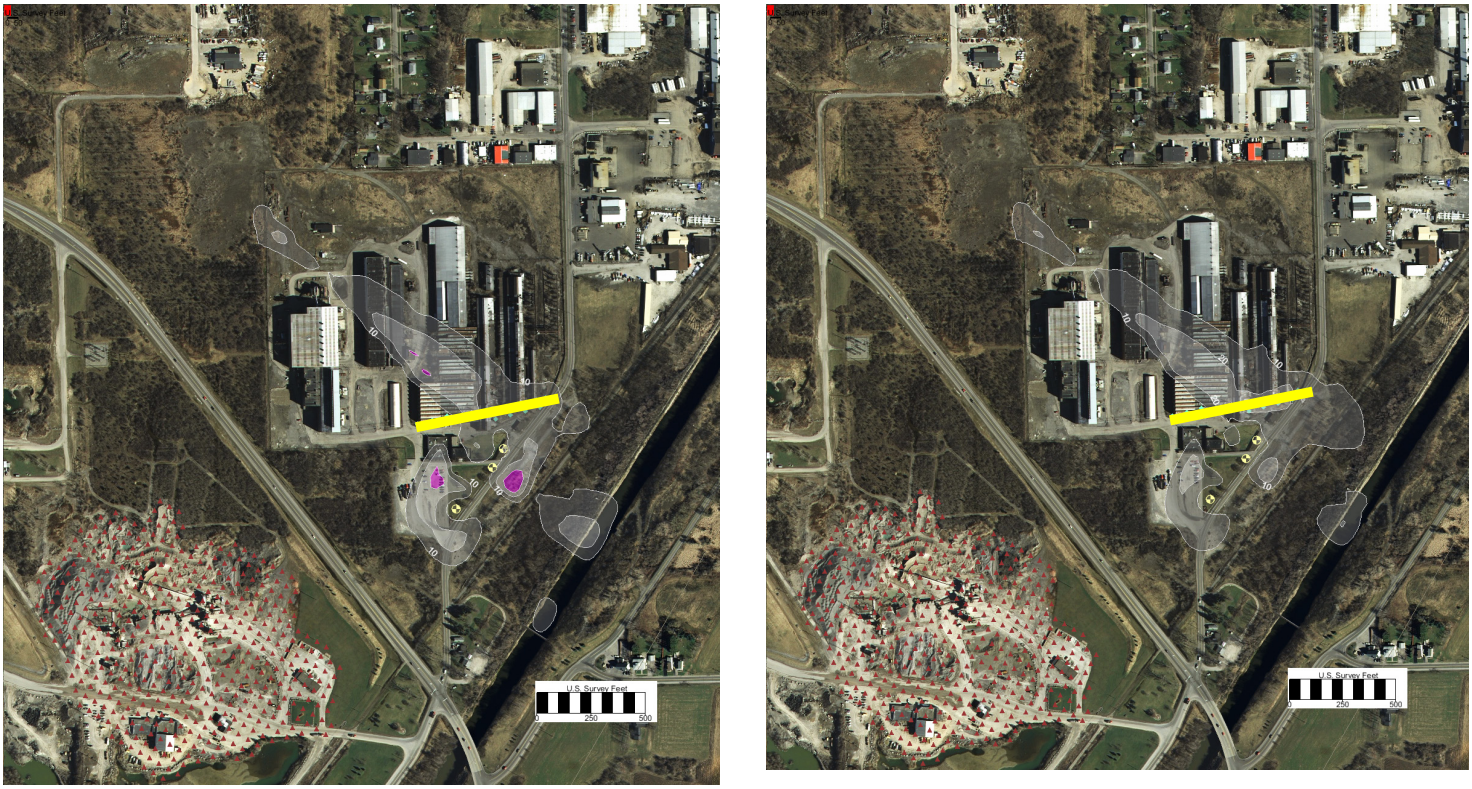
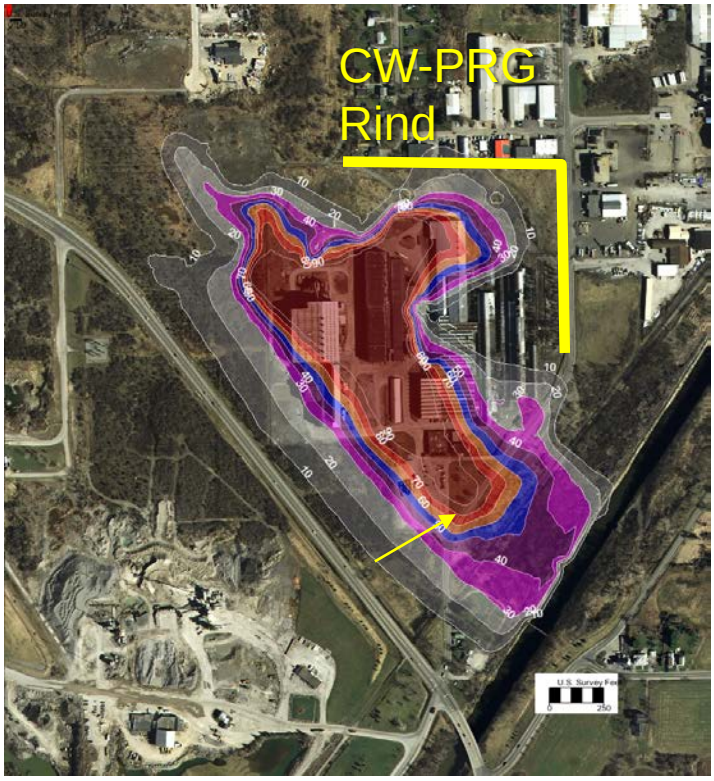
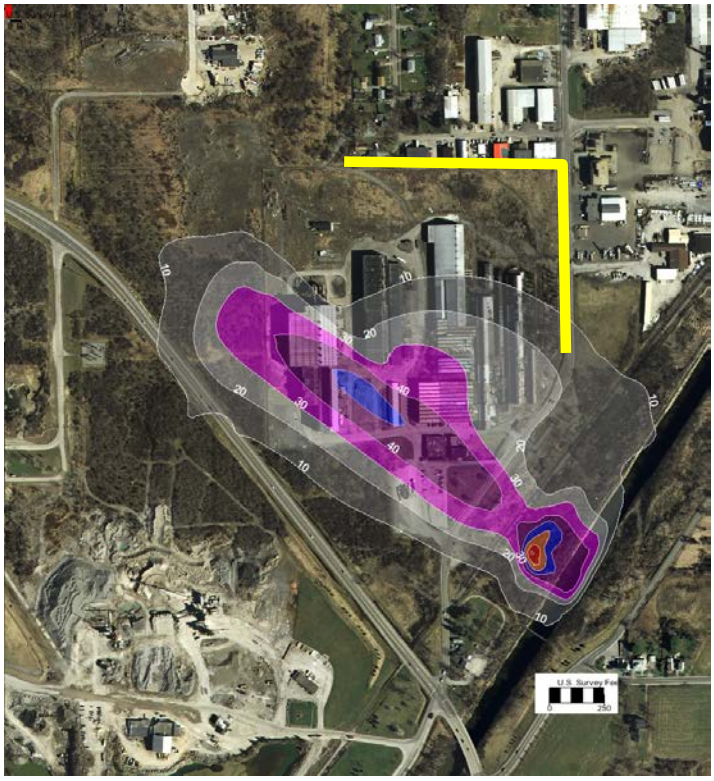


Figure 7-14. Alternative G5 – Groundwater Protection PRG, Rubblized Trench, and Pumping Wells - Deep Aquifer

Year 1 - Current Plume

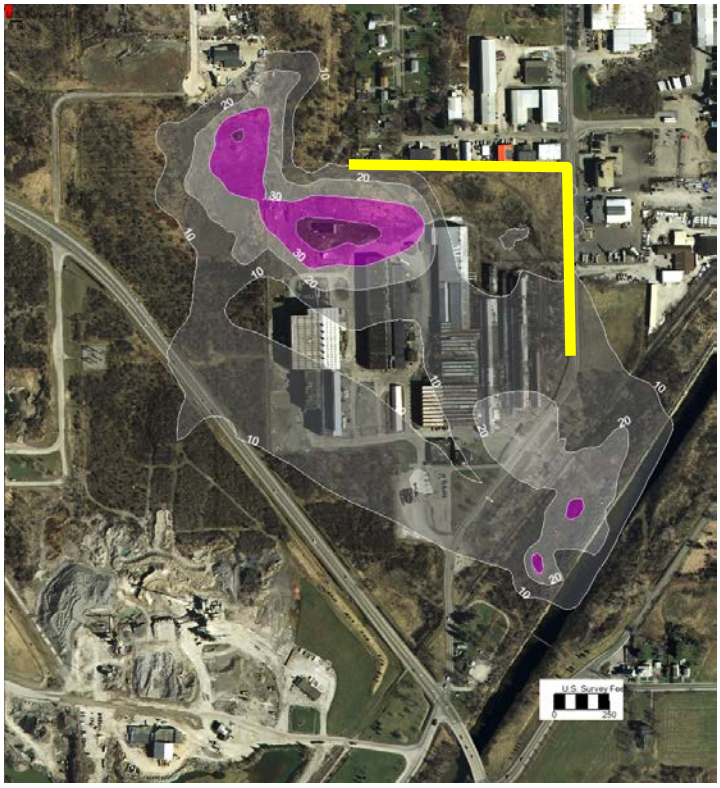


Year 10 – Degrading Plume



Uranium (ug/L) 300 180 90 60 30 10

Year 20 - Degrading Plume



Year 50 - MCL Achieved

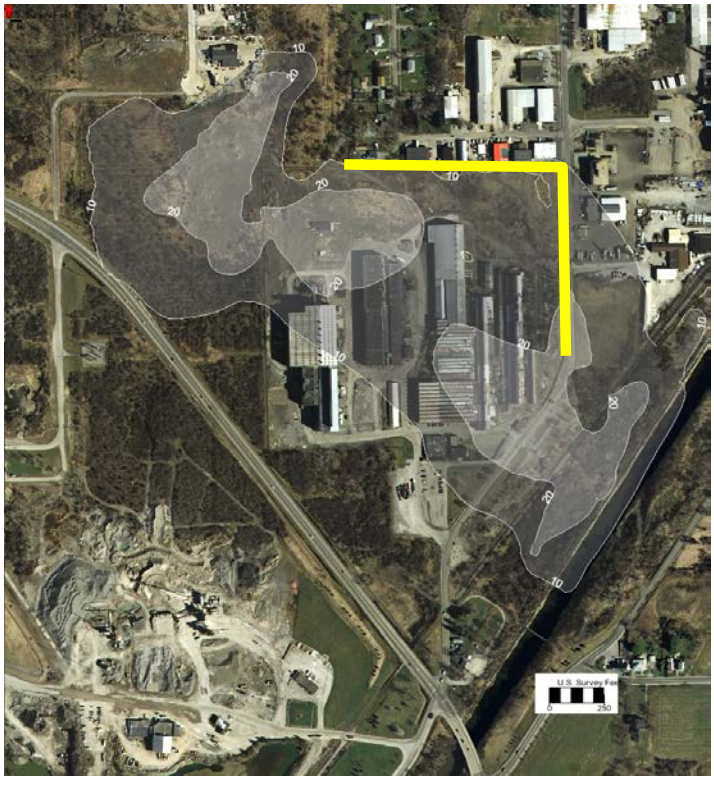
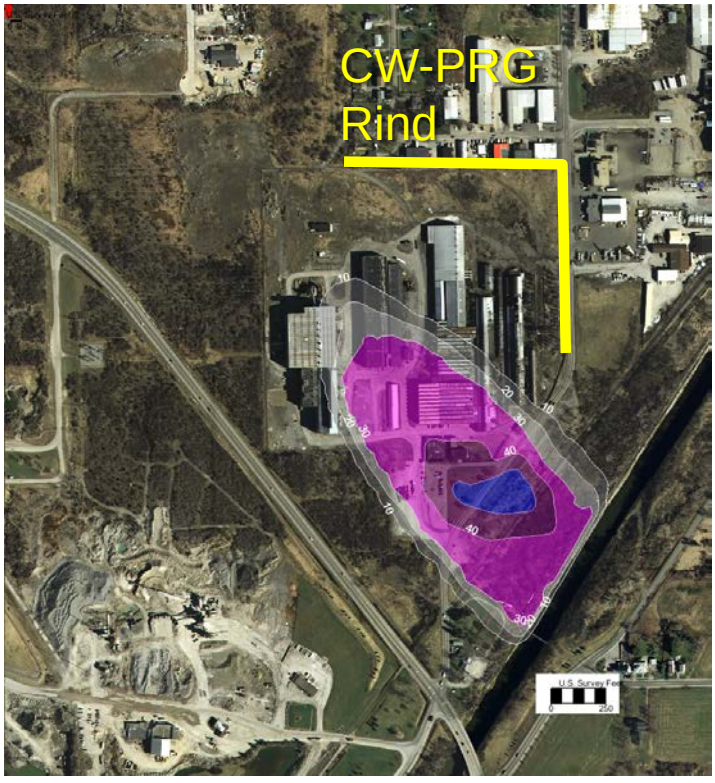
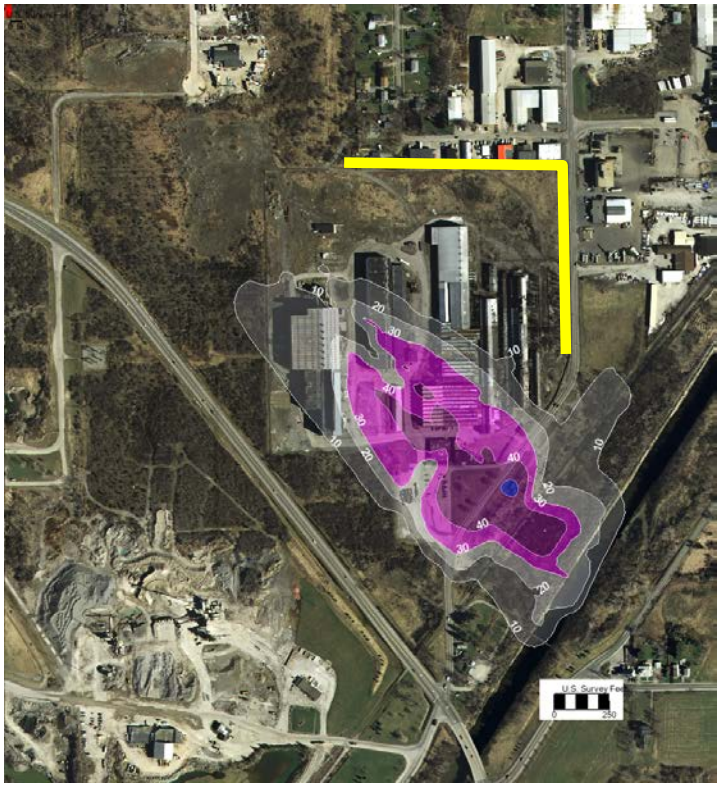


Figure 7-15. GW-PRG and MNA With Simulated Residual Contamination at the CW-PRG Along the North and East Boundaries - Shallow Aquifer

Year 1 - Current Plume

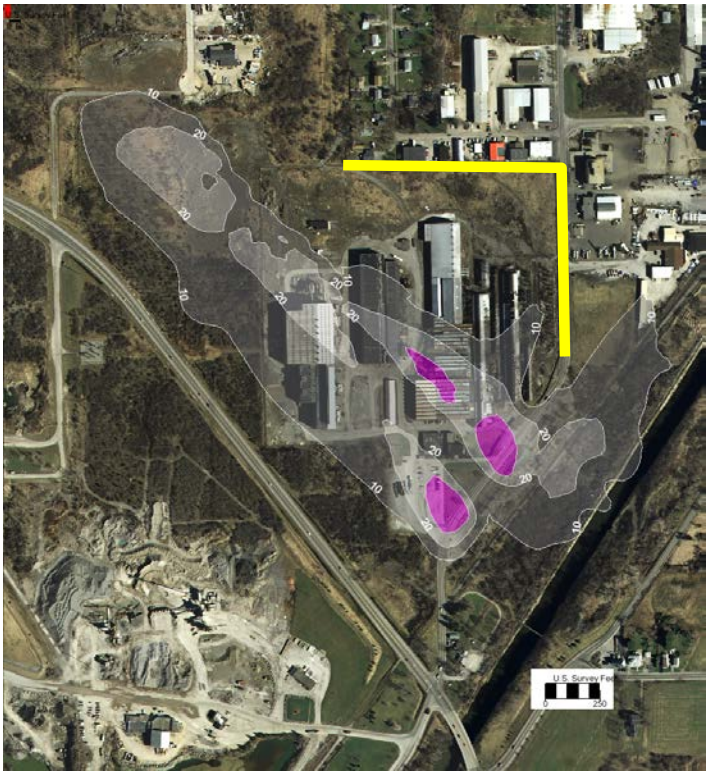


Year 10 – Degrading Plume



Uranium (ug/L) 300 180 90 60 30 10

Year 60 - Degrading Plume



Year 120 - MCL Achieved

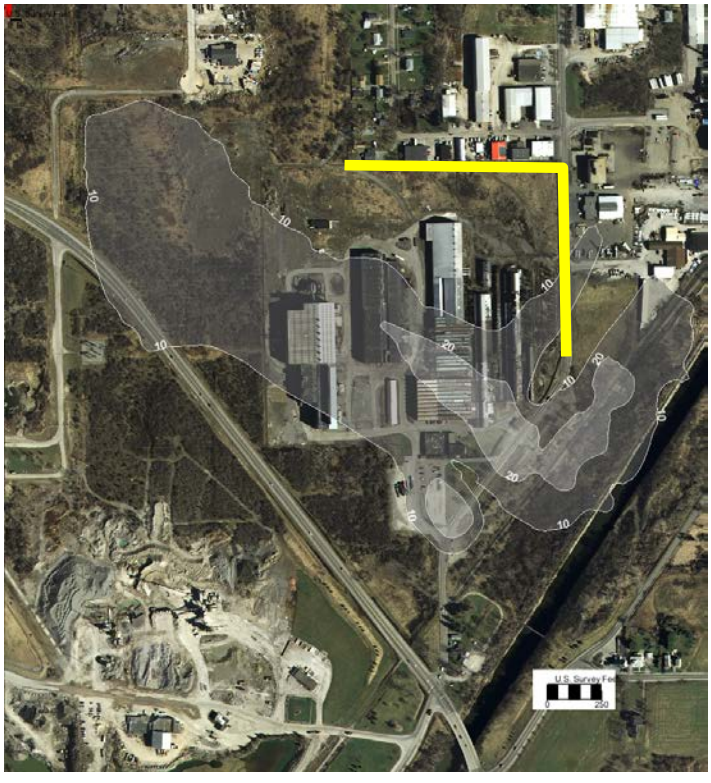


Figure 7-16. GW-PRG and MNA With Simulated Residual Contamination at the CW-PRG Along the North and East Boundaries - Deep Aquifer

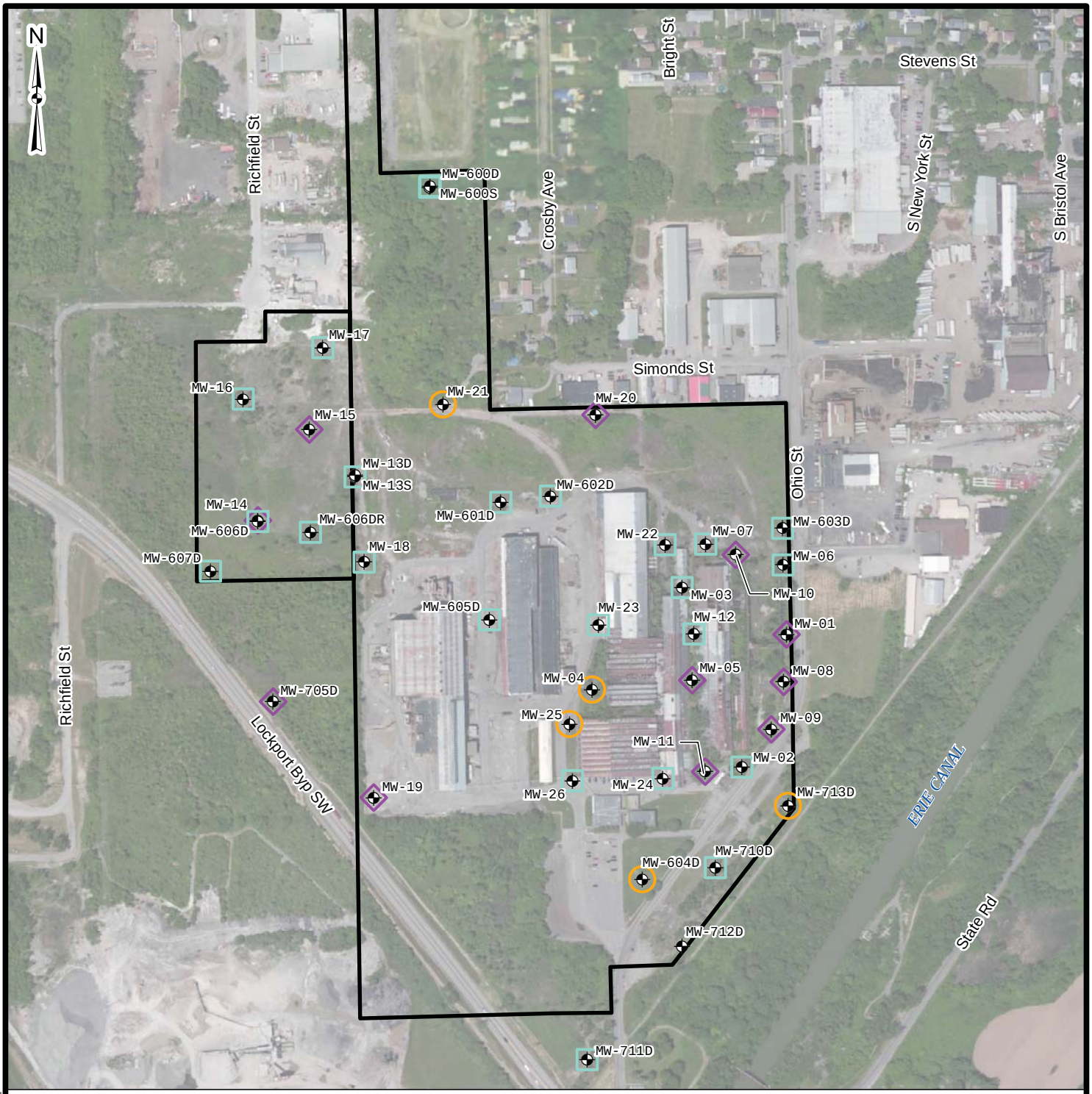
ATTACHMENTS

Attachment A

Uranium Trend Analysis

Attachment Table 1.
Guterl Steel Site - Mann-Kendal Trends of Uranium in Groundwater

Sampling Location	Trend	Average Uranium Concentration (ug/L)
MW-01	Increasing	3.5
MW-02	No Trend	27.4
MW-03	No Trend	3.4
MW-04	Decreasing	41.9
MW-05	Increasing	6.3
MW-06	No Trend	3.9
MW-07	No Trend	25.0
MW-08	Increasing	0.9
MW-09	Increasing	40.1
MW-10	Increasing	1.5
MW-11	Increasing	17.0
MW-12	No Trend	2.5
MW-13D	No Trend	83.3
MW-14	Increasing	6.9
MW-15	Increasing	2.9
MW-16	No Trend	26.8
MW-17	No Trend	6.0
MW-18	Stable	132.6
MW-19	Increasing	16.6
MW-20	Increasing	13.3
MW-21	Decreasing	3.6
MW-22	No Trend	49.9
MW-23	Stable	7.4
MW-24	No Trend	13.2
MW-25	Decreasing	162.6
MW-26	No Trend	164.3
MW-600D	Stable	2.1
MW-600S	Stable	2.8
MW-601D	Stable	8.0
MW-602D	Stable	105.9
MW-603D	No Trend	7.7
MW-604D	Probably Decreasing	98.1
MW-605D	No Trend	253.7
MW-606D	Stable	7.5
MW-606DR	Stable	10.8
MW-607D	No Trend	12.1
MW-701DD	Stable	1.0
MW-702DD	No Trend	77.4
MW-703DD	No Trend	0.3
MW-704DD	No Trend	50.3
MW-705D	Increasing	1.1
MW-705DD	Stable	1.1
MW-706DD	Stable	1.3
MW-707DD	Decreasing	12.6
MW-708DD	Probably Decreasing	20.5
MW-709DD	Stable	71.0
MW-710D	Stable	55.9
MW-710DD	Decreasing	49.9
MW-711D	Stable	5.3
MW-711DD	Probably Increasing	3.0
MW-712DD	Stable	22.1
MW-713D	Decreasing	0.9



Legend

- Shallow Monitoring Well
- Site Boundary
- Decreasing Trend
- Increasing Trend
- No Trend/Stable

0 225 450 900 Feet

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
BUFFALO, NY

US Army Corps of Engineers
Buffalo District

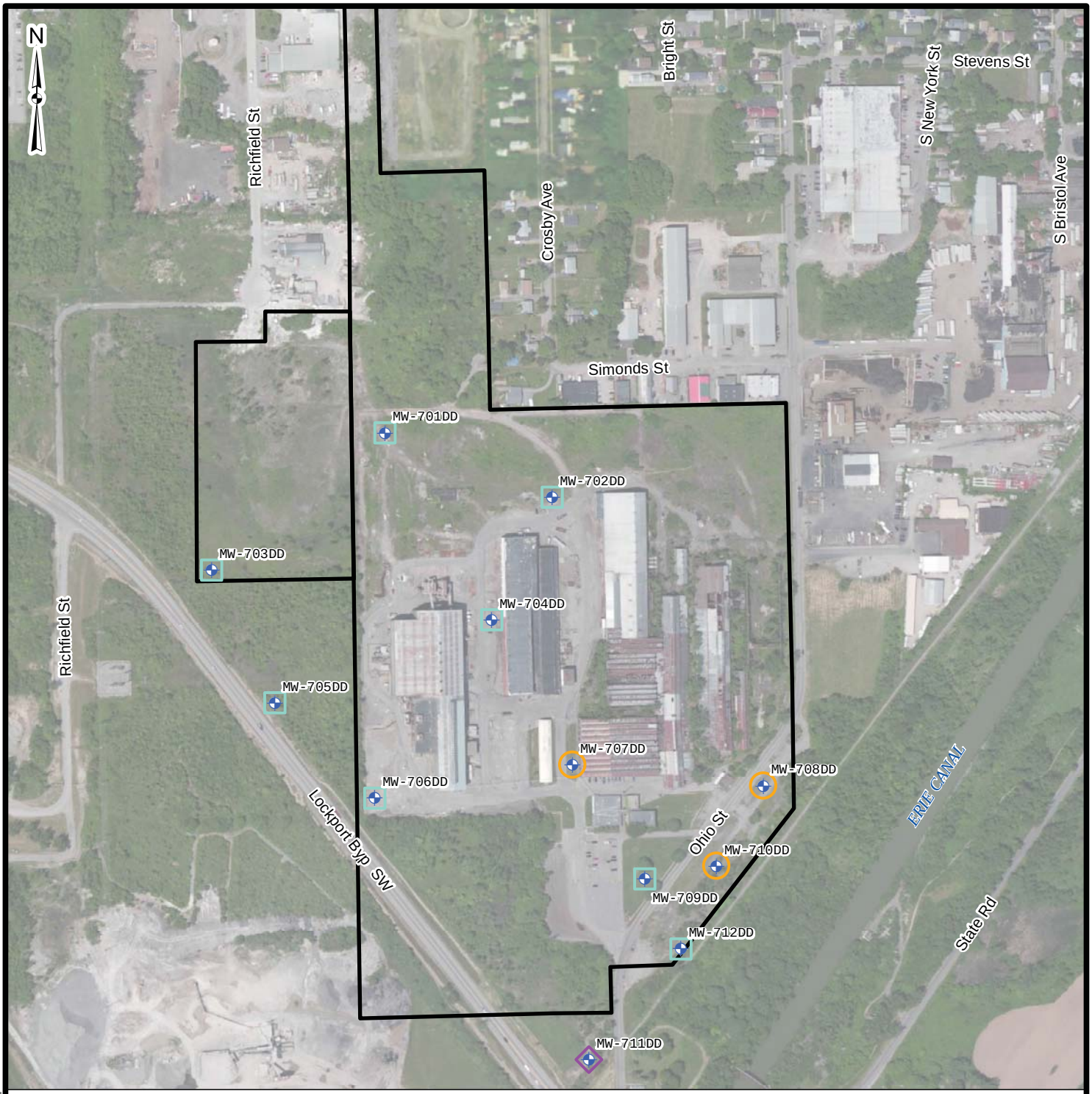
TOTAL URANIUM TRENDS IN SHALLOW GROUNDWATER

Document Name: 170109_SH_MKTrends.mxd
Drawn By: H5TDESPM
Date Saved: 09 Jan 2017
Time Saved: 10:16:02 AM

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

FIGURE 1

Document Path: K:\GuterlGIS\ArcMap\Groundwater\2017\170109_SH_MKTrends.mxd



Legend

- Deep Monitoring Well
- Site Boundary
- Decreasing Trend
- Increasing Trend
- No Trend/Stable

0 225 450 900 Feet

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
BUFFALO, NY

US Army Corps of Engineers
Buffalo District

TOTAL URANIUM TRENDS IN DEEP GROUNDWATER

Document Name: 170109_DB_MKTrends.mxd
Drawn By: H5TDESPM
Date Saved: 09 Jan 2017
Time Saved: 11:01:34 AM

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

FIGURE 2

Document Path: K:\GuterlGIS\ArcMap\Groundwater\2017\170109_DB_MKTrends.mxd

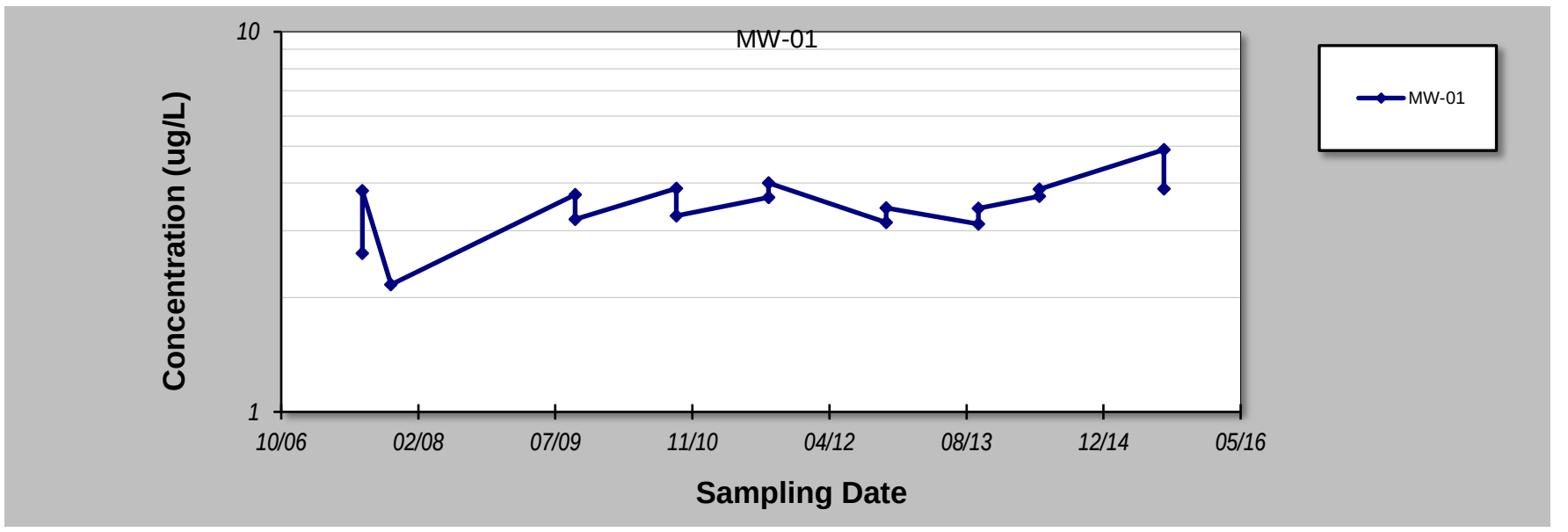
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-01**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	02-Aug-07	2.613
2	02-Aug-07	3.814
3	14-Nov-07	2.162
4	16-Sep-09	3.724
5	16-Sep-09	3.209
6	20-Sep-10	3.874
7	20-Sep-10	3.280
8	23-Aug-11	3.664
9	23-Aug-11	4.000
10	25-Oct-12	3.153
11	25-Oct-12	3.440
12	26-Sep-13	3.123
13	26-Sep-13	3.430
14	06-May-14	3.694
15	06-May-14	3.850
16	04-Aug-15	4.895
17	04-Aug-15	3.860
18		
19		
20		
Coefficient of Variation:		1.89
Mann-Kendall Statistic (S):		77
Confidence Factor:		99.7%
Concentration Trend:		Increasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

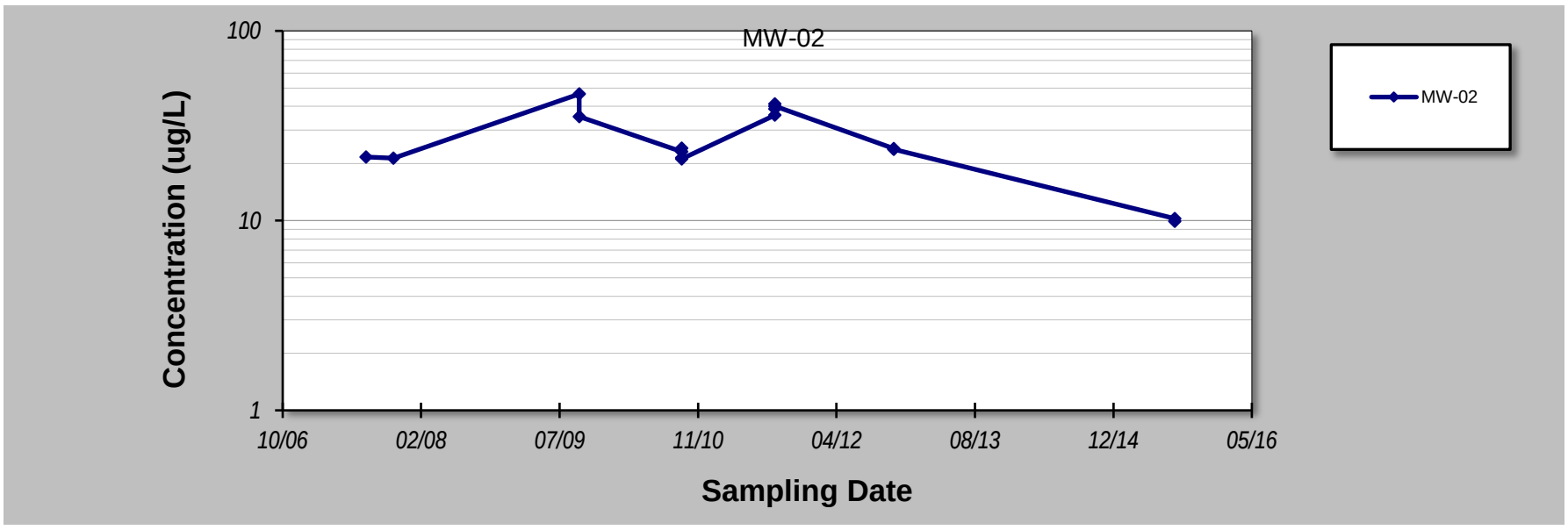
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-02**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	07-Aug-07	21.622
2	14-Nov-07	21.321
3	15-Sep-09	46.486
4	15-Sep-09	35.263
5	20-Sep-10	23.123
6	20-Sep-10	24.084
7	20-Sep-10	21.400
8	20-Sep-10	21.100
9	23-Aug-11	36.036
10	23-Aug-11	38.739
11	23-Aug-11	41.300
12	23-Aug-11	40.100
13	25-Oct-12	23.934
14	25-Oct-12	23.800
15	06-Aug-15	10.240
16	06-Aug-15	9.930
17		
18		
19		
20		
Coefficient of Variation:		0.48
Mann-Kendall Statistic (S):		19
Confidence Factor:		75.0%
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

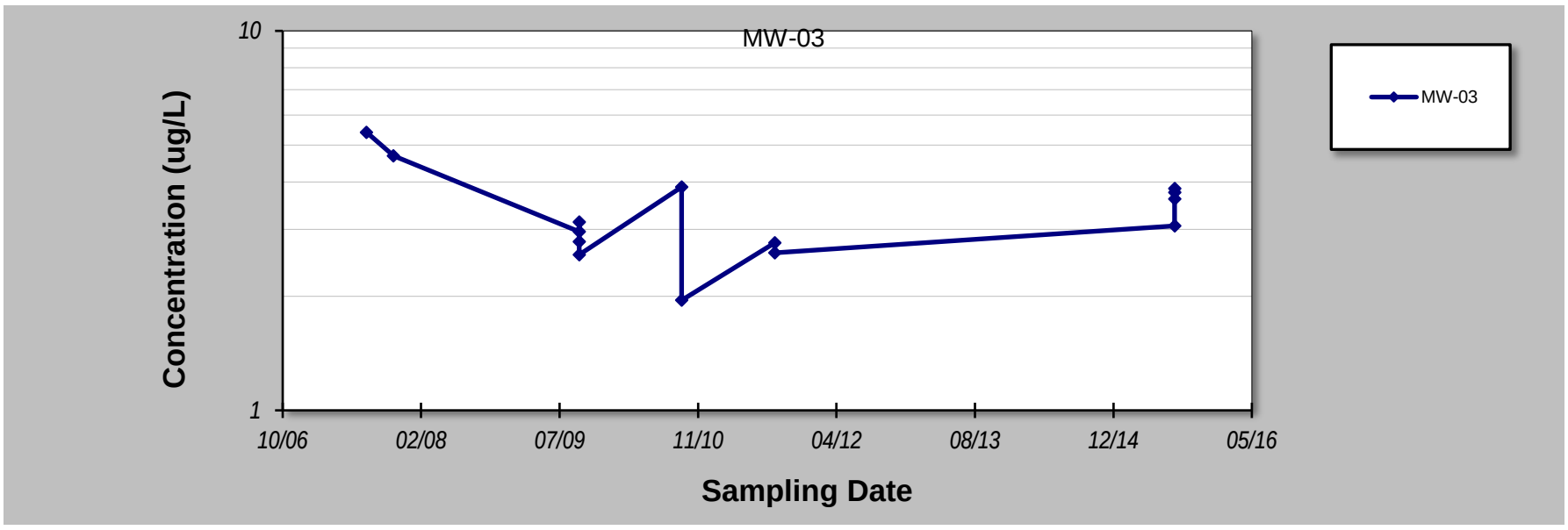
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-03**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	09-Aug-07	5.405
2	14-Nov-07	4.685
3	15-Sep-09	2.960
4	15-Sep-09	3.132
5	15-Sep-09	2.782
6	15-Sep-09	2.572
7	20-Sep-10	3.874
8	20-Sep-10	1.950
9	22-Aug-11	2.763
10	22-Aug-11	2.600
11	05-Aug-15	3.063
12	05-Aug-15	3.604
13	05-Aug-15	3.840
14	05-Aug-15	3.750
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		**1.67**
Mann-Kendall Statistic (S):		**32**
Confidence Factor:		**89.8%**
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

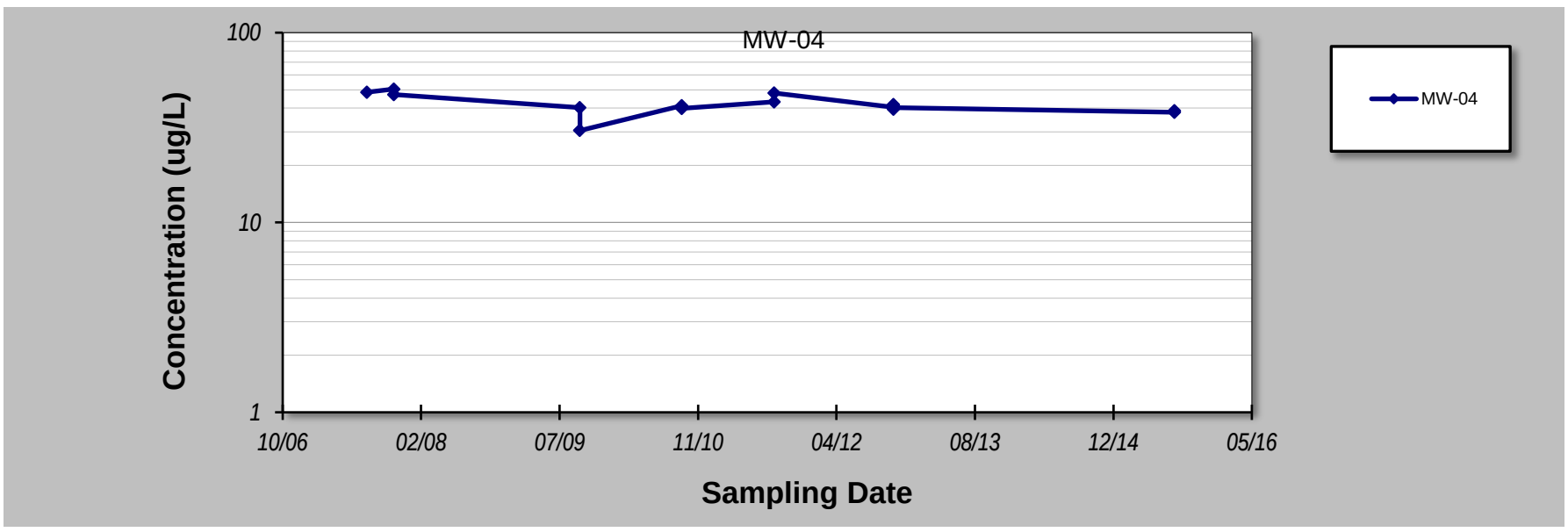
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-04**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	10-Aug-07	48.649
2	15-Nov-07	50.450
3	15-Nov-07	47.147
4	17-Sep-09	40.210
5	17-Sep-09	30.506
6	20-Sep-10	41.141
7	20-Sep-10	39.900
8	19-Aug-11	43.243
9	19-Aug-11	48.000
10	24-Oct-12	40.541
11	24-Oct-12	41.742
12	24-Oct-12	39.600
13	24-Oct-12	40.300
14	04-Aug-15	38.138
15	04-Aug-15	38.800
16		
17		
18		
19		
20		
Coefficient of Variation:		**0.15**
Mann-Kendall Statistic (S):		**-75**
Confidence Factor:		**99.8%**
Concentration Trend:		Decreasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

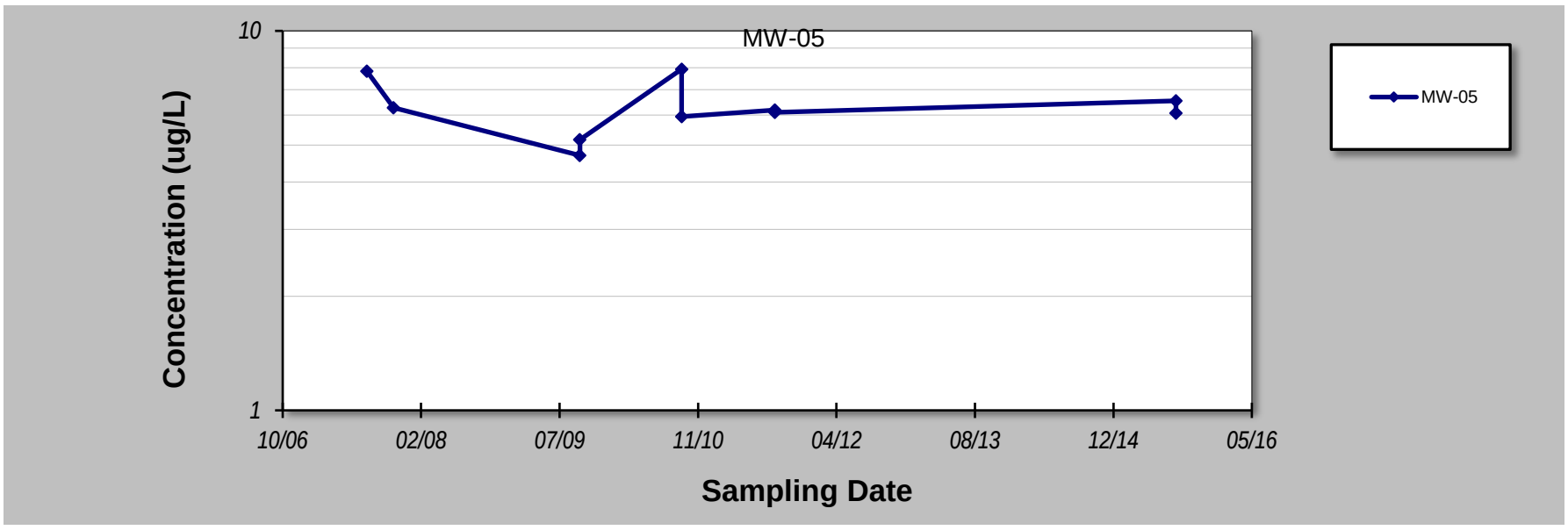
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-05**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	10-Aug-07	7.838
2	14-Nov-07	6.276
3	17-Sep-09	4.697
4	17-Sep-09	5.165
5	20-Sep-10	7.928
6	20-Sep-10	5.950
7	22-Aug-11	6.186
8	22-Aug-11	6.100
9	10-Aug-15	6.547
10	10-Aug-15	6.070
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		1.01
Mann-Kendall Statistic (S):		30
Confidence Factor:		96.2%
Concentration Trend:		Increasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

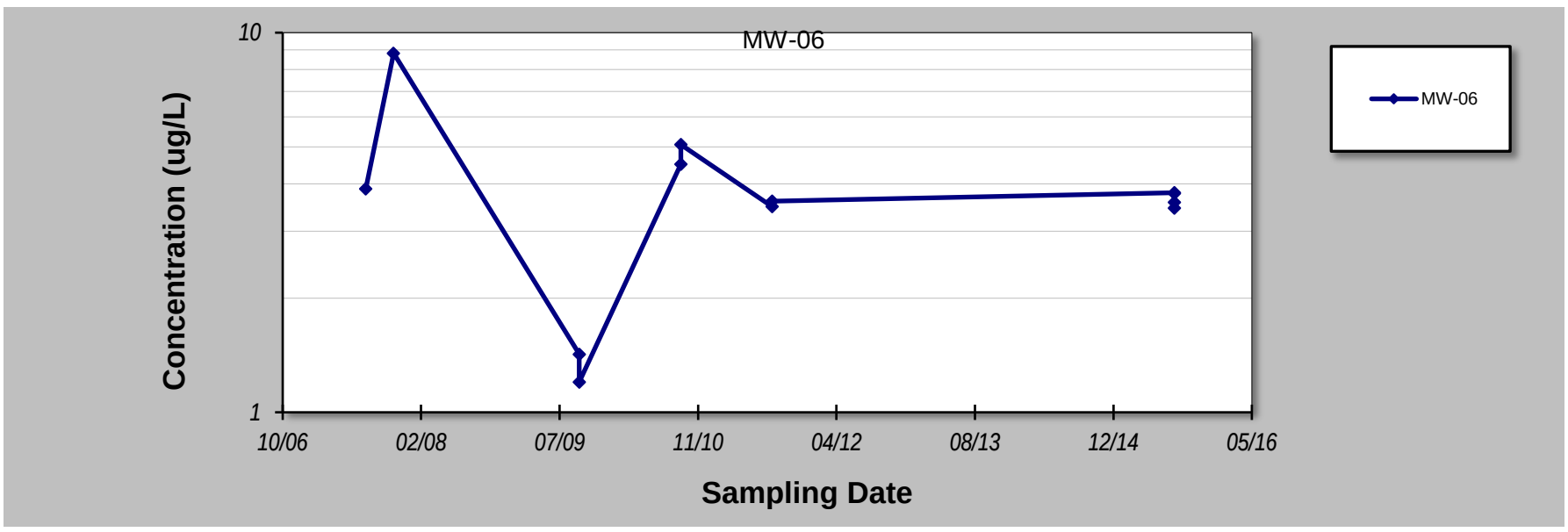
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-06**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	06-Aug-07	3.874
2	14-Nov-07	8.829
3	15-Sep-09	1.423
4	15-Sep-09	1.202
5	17-Sep-10	4.505
6	17-Sep-10	5.070
7	12-Aug-11	3.483
8	12-Aug-11	3.600
9	04-Aug-15	3.784
10	04-Aug-15	3.574
11	04-Aug-15	3.770
12	04-Aug-15	3.450
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		1.32
Mann-Kendall Statistic (S):		25
Confidence Factor:		88.0%
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

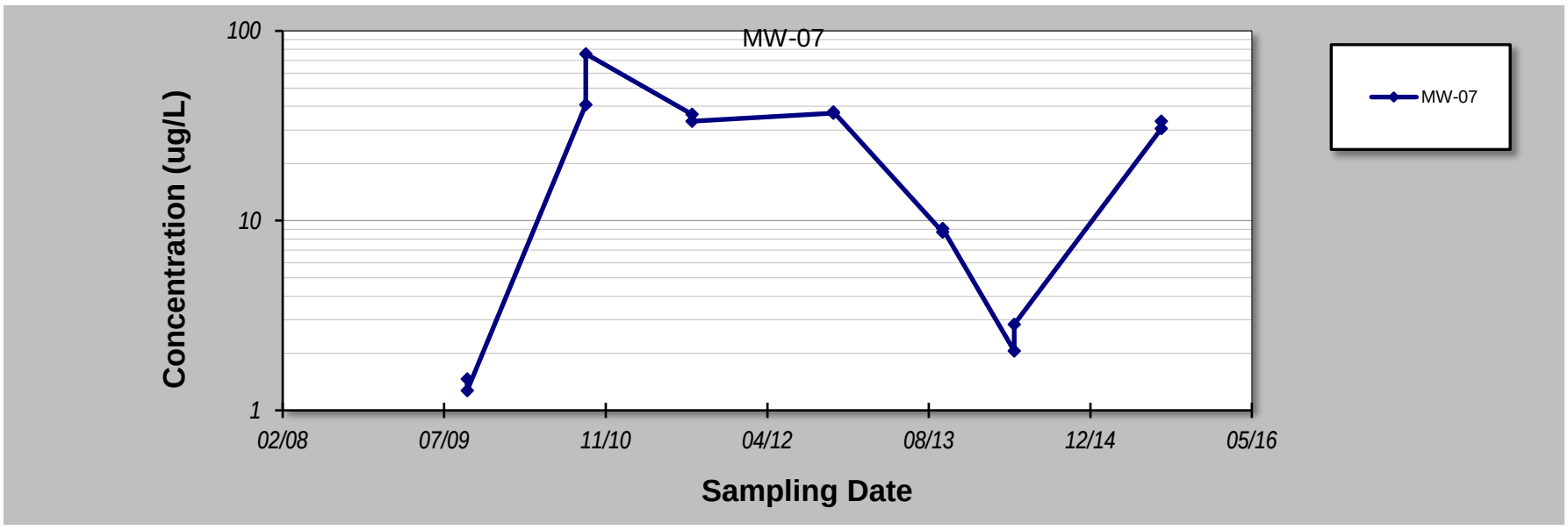
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-07**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	15-Sep-09	1.463
2	15-Sep-09	1.271
3	17-Sep-10	40.841
4	17-Sep-10	75.800
5	12-Aug-11	36.336
6	12-Aug-11	33.400
7	23-Oct-12	36.937
8	23-Oct-12	37.400
9	26-Sep-13	8.709
10	26-Sep-13	9.070
11	06-May-14	2.054
12	06-May-14	2.840
13	04-Aug-15	30.631
14	04-Aug-15	33.400
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.75
Mann-Kendall Statistic (S):		11
Confidence Factor:		65.7%
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

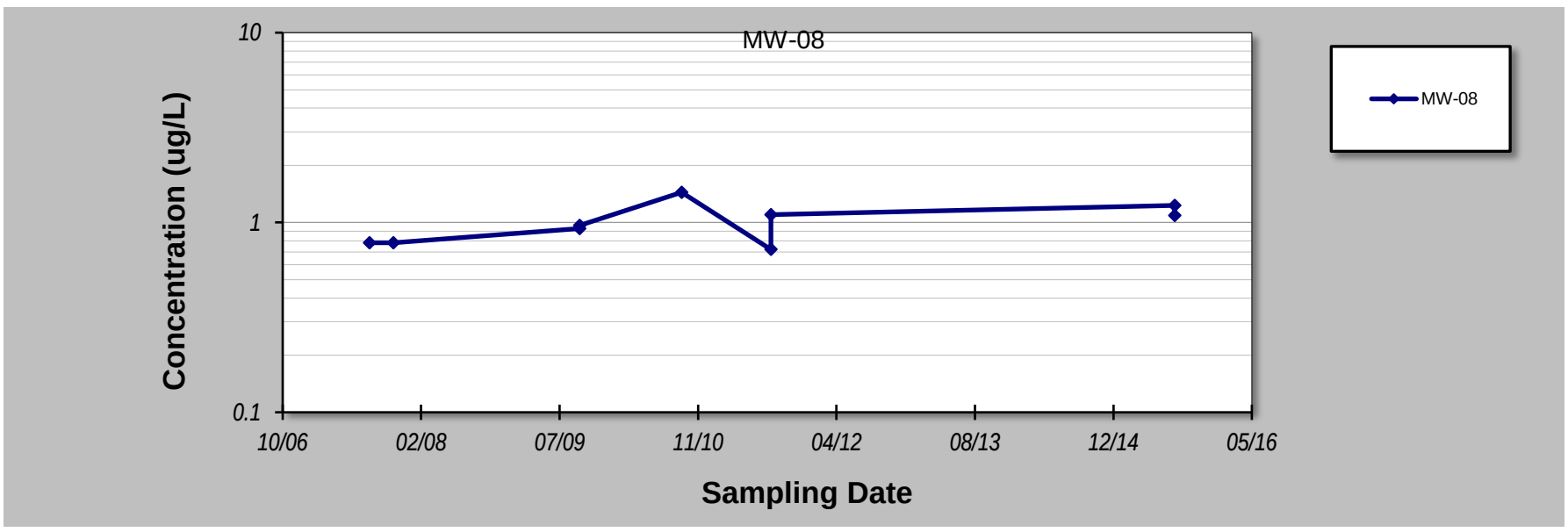
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-08**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	20-Aug-07	0.781
2	14-Nov-07	0.781
3	16-Sep-09	0.927
4	16-Sep-09	0.966
5	20-Sep-10	1.441
6	20-Sep-10	0.000
7	08-Aug-11	0.721
8	08-Aug-11	1.100
9	05-Aug-15	1.228
10	05-Aug-15	1.090
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		1.75
Mann-Kendall Statistic (S):		45
Confidence Factor:		99.8%
Concentration Trend:		Increasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

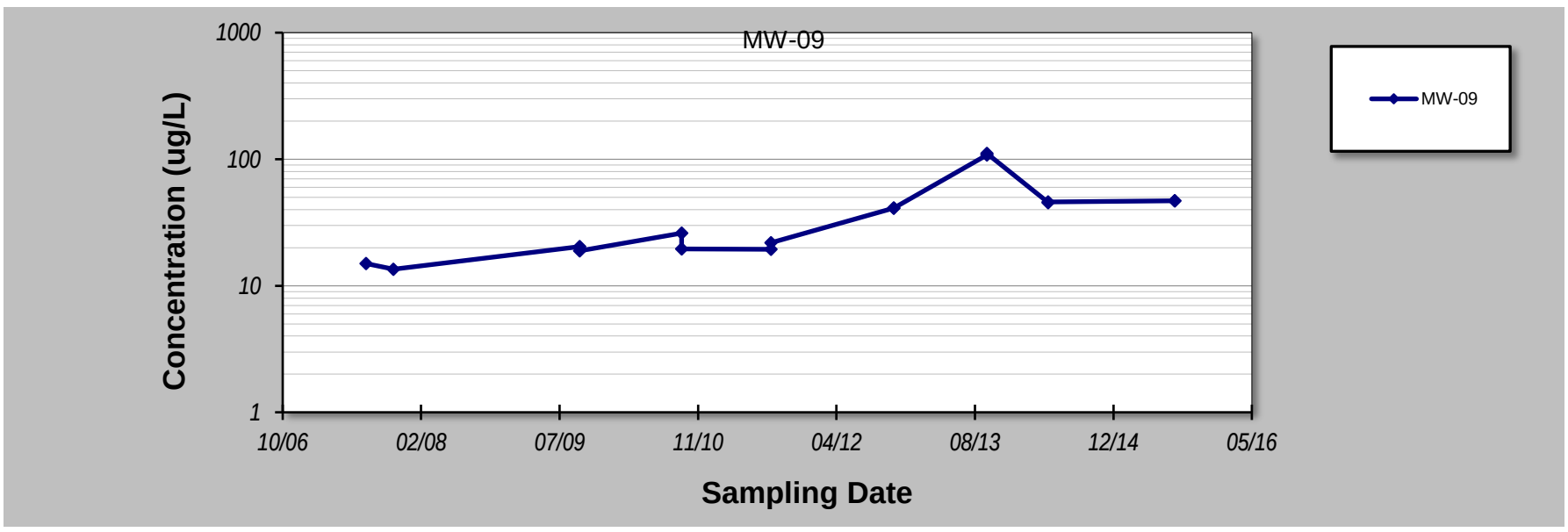
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-09**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	07-Aug-07	14.98
2	14-Nov-07	13.51
3	16-Sep-09	20.42
4	16-Sep-09	18.93
5	20-Sep-10	26.01
6	20-Sep-10	19.50
7	08-Aug-11	19.46
8	08-Aug-11	21.80
9	25-Oct-12	41.14
10	25-Oct-12	41.00
11	26-Sep-13	107.81
12	26-Sep-13	111.00
13	06-May-14	45.35
14	06-May-14	46.00
15	05-Aug-15	46.85
16	05-Aug-15	47.00
17		
18		
19		
20		
Coefficient of Variation:		0.70
Mann-Kendall Statistic (S):		85
Confidence Factor:		99.9%
Concentration Trend:		Increasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

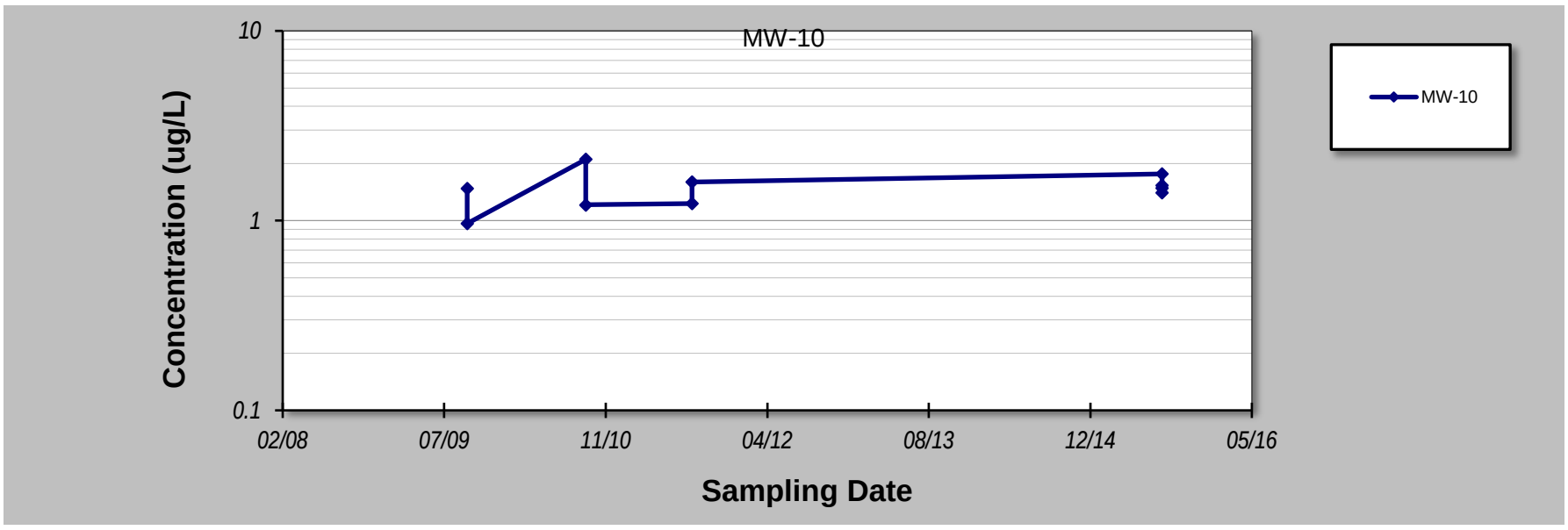
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-10**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	15-Sep-09	1.473
2	15-Sep-09	0.965
3	17-Sep-10	2.102
4	17-Sep-10	1.210
5	12-Aug-11	1.231
6	12-Aug-11	1.600
7	06-Aug-15	1.763
8	06-Aug-15	1.535
9	06-Aug-15	1.480
10	06-Aug-15	1.400
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		**1.64**
Mann-Kendall Statistic (S):		**36**
Confidence Factor:		**98.5%**
Concentration Trend:		Increasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

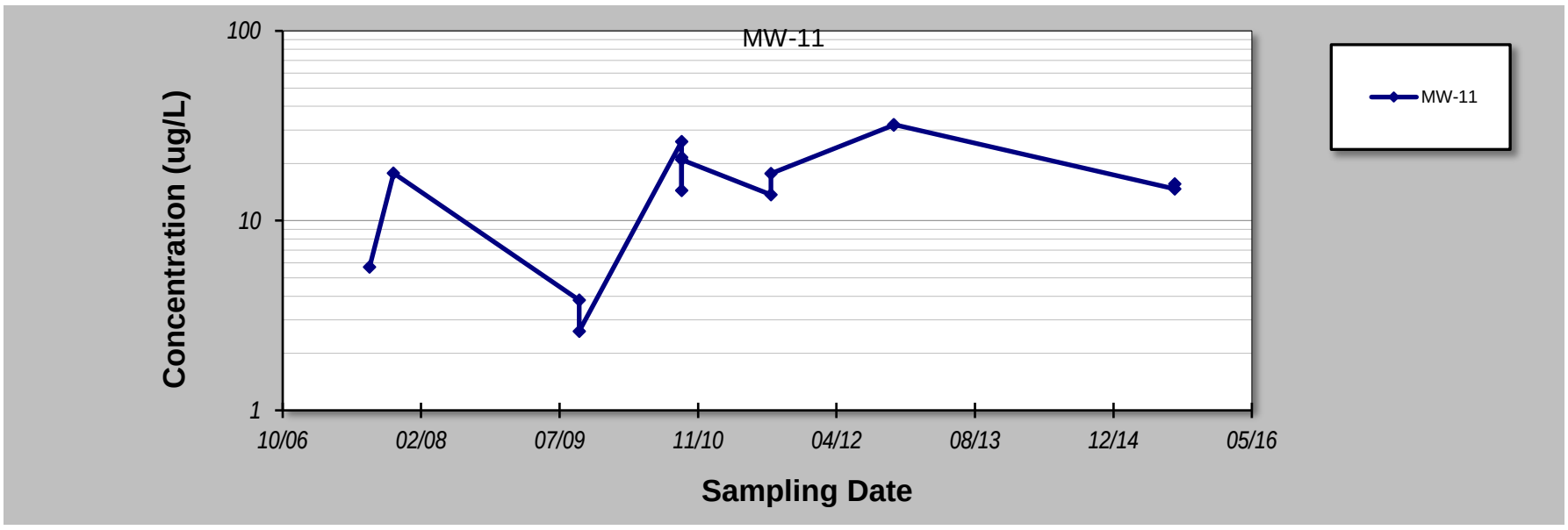
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-11**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	20-Aug-07	5.706
2	14-Nov-07	17.748
3	15-Sep-09	3.814
4	15-Sep-09	2.614
5	20-Sep-10	26.066
6	20-Sep-10	14.414
7	20-Sep-10	21.500
8	20-Sep-10	20.900
9	08-Aug-11	13.694
10	08-Aug-11	17.700
11	25-Oct-12	31.832
12	25-Oct-12	32.100
13	06-Aug-15	14.685
14	06-Aug-15	15.600
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		**0.56**
Mann-Kendall Statistic (S):		**62**
Confidence Factor:		**99.5%**
Concentration Trend:		Increasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

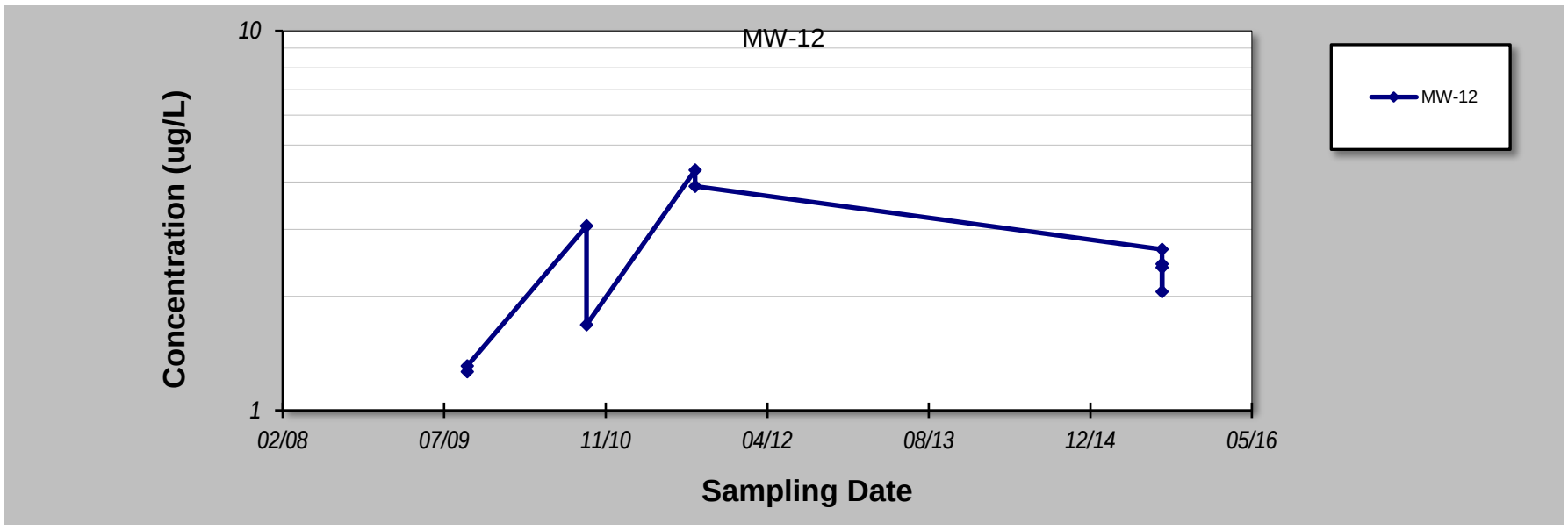
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-12**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	15-Sep-09	1.266
2	15-Sep-09	1.310
3	20-Sep-10	3.063
4	20-Sep-10	1.680
5	22-Aug-11	4.294
6	22-Aug-11	3.900
7	06-Aug-15	2.658
8	06-Aug-15	2.054
9	06-Aug-15	2.430
10	06-Aug-15	2.380
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.41
Mann-Kendall Statistic (S):		9
Confidence Factor:		75.8%
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

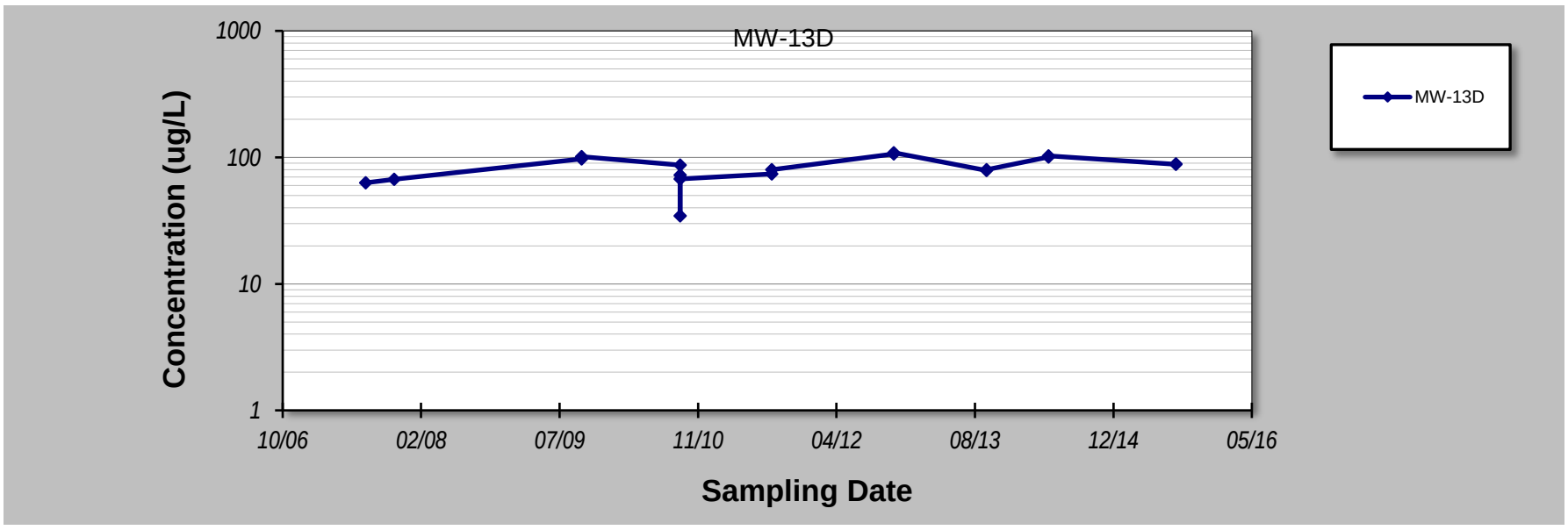
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-13D**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	06-Aug-07	63.063
2	16-Nov-07	67.267
3	23-Sep-09	97.297
4	23-Sep-09	101.503
5	14-Sep-10	87.087
6	14-Sep-10	34.535
7	14-Sep-10	72.600
8	14-Sep-10	67.700
9	11-Aug-11	73.874
10	11-Aug-11	79.800
11	25-Oct-12	106.607
12	25-Oct-12	109.000
13	25-Sep-13	78.679
14	25-Sep-13	80.000
15	07-May-14	100.601
16	07-May-14	103.000
17	10-Aug-15	87.988
18	10-Aug-15	88.800
19		
20		
Coefficient of Variation:		0.32
Mann-Kendall Statistic (S):		8
Confidence Factor:		58.3%
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

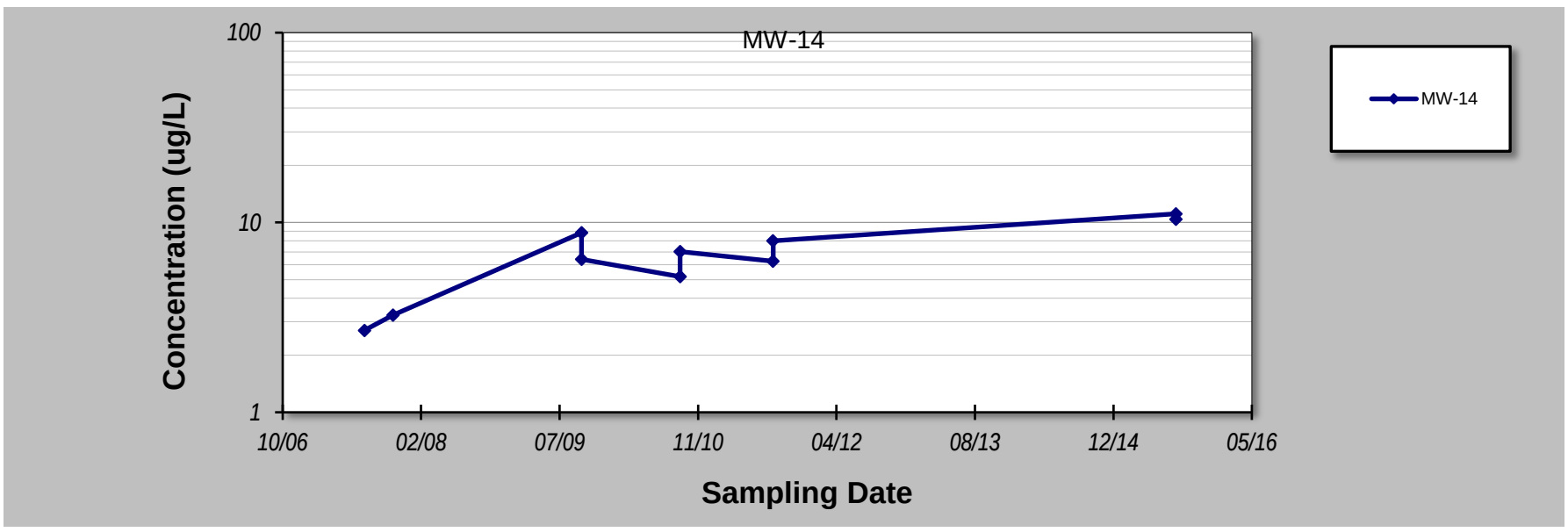
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-14**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	01-Aug-07	2.703
2	12-Nov-07	3.243
3	23-Sep-09	8.832
4	23-Sep-09	6.387
5	14-Sep-10	5.195
6	14-Sep-10	7.010
7	16-Aug-11	6.246
8	16-Aug-11	8.000
9	10-Aug-15	11.111
10	10-Aug-15	10.400
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		**0.97**
Mann-Kendall Statistic (S):		**58**
Confidence Factor:		**>99.9%**
Concentration Trend:		Increasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

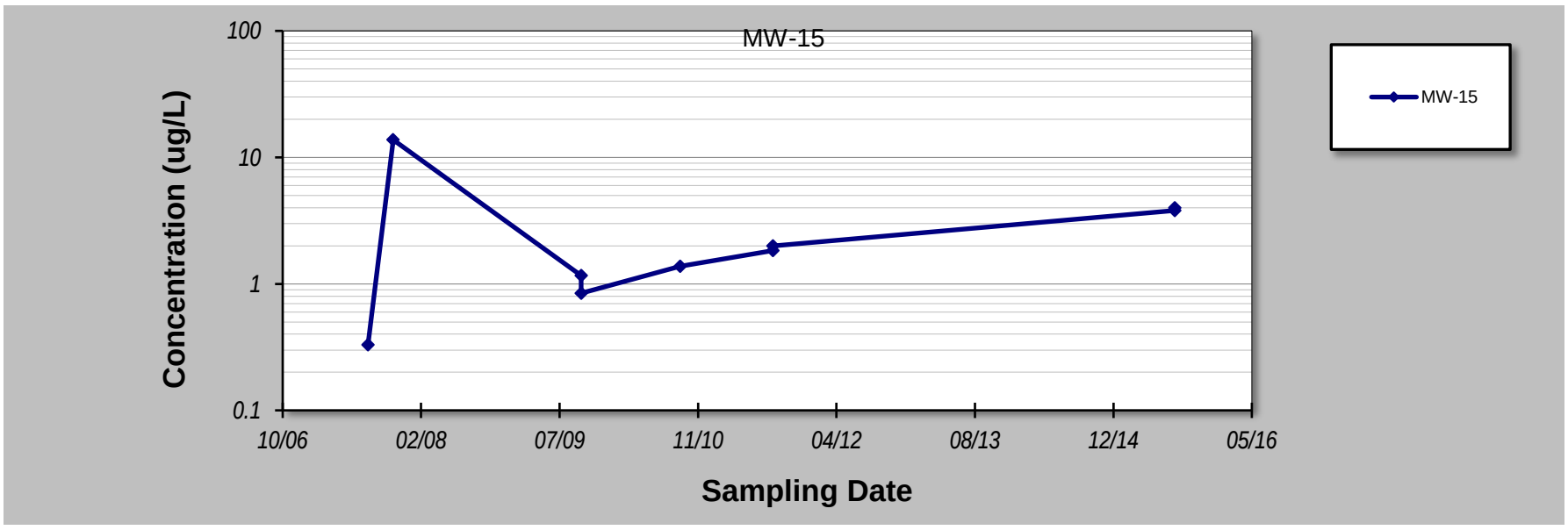
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-15**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	14-Aug-07	0.330
2	13-Nov-07	13.754
3	22-Sep-09	1.161
4	22-Sep-09	0.843
5	14-Sep-10	1.378
6	14-Sep-10	0.000
7	16-Aug-11	1.832
8	16-Aug-11	2.000
9	06-Aug-15	3.814
10	06-Aug-15	3.980
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		**1.30**
Mann-Kendall Statistic (S):		**59**
Confidence Factor:		**100.0%**
Concentration Trend:		Increasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

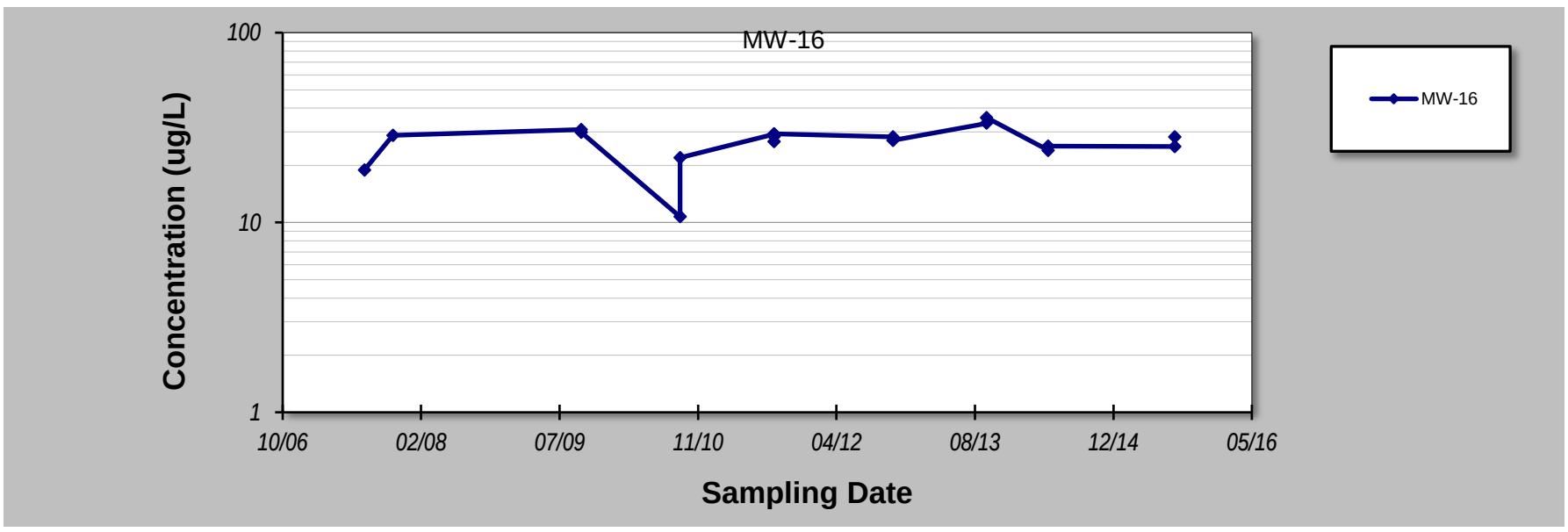
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-16**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	01-Aug-07	18.919
2	12-Nov-07	28.829
3	22-Sep-09	30.901
4	22-Sep-09	29.799
5	14-Sep-10	10.721
6	14-Sep-10	21.900
7	19-Aug-11	29.129
8	19-Aug-11	26.667
9	19-Aug-11	28.400
10	19-Aug-11	29.300
11	22-Oct-12	28.288
12	22-Oct-12	27.100
13	25-Sep-13	33.333
14	25-Sep-13	35.700
15	06-May-14	24.024
16	06-May-14	25.300
17	06-Aug-15	25.135
18	06-Aug-15	28.200
19		
20		
Coefficient of Variation:		0.21
Mann-Kendall Statistic (S):		1
Confidence Factor:		50.0%
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

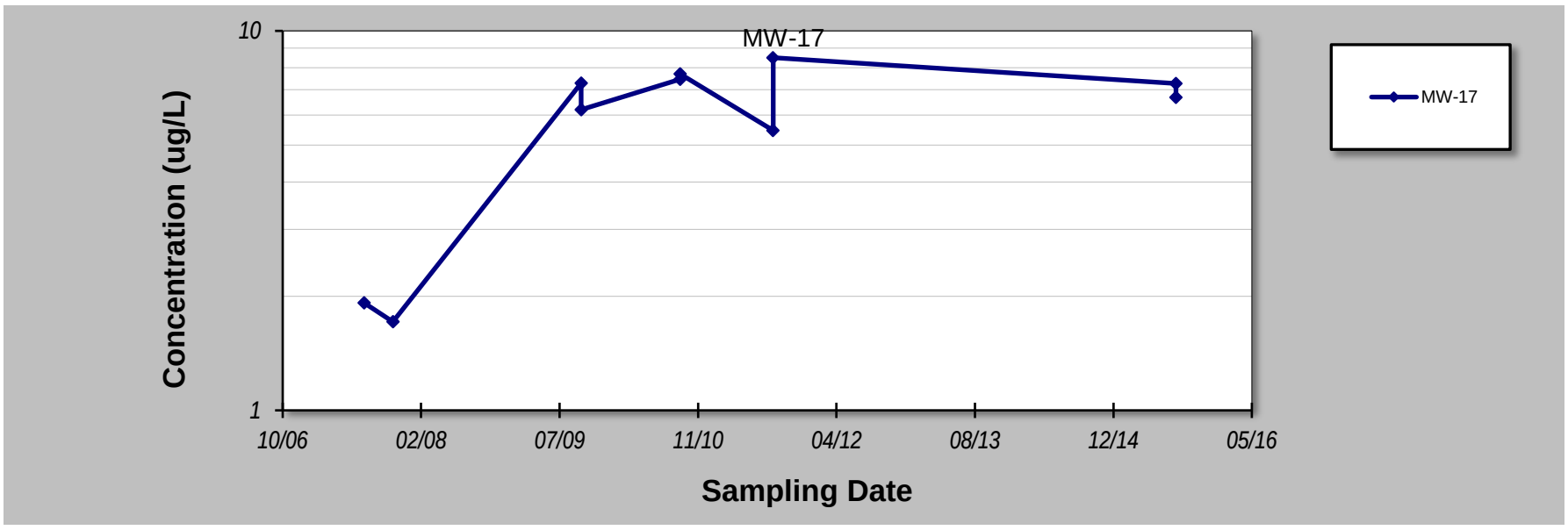
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-17**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	31-Jul-07	1.922
2	12-Nov-07	1.712
3	22-Sep-09	7.285
4	22-Sep-09	6.206
5	14-Sep-10	7.447
6	14-Sep-10	7.700
7	16-Aug-11	5.465
8	16-Aug-11	8.500
9	10-Aug-15	7.267
10	10-Aug-15	6.680
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		**0.39**
Mann-Kendall Statistic (S):		**15**
Confidence Factor:		**89.2%**
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

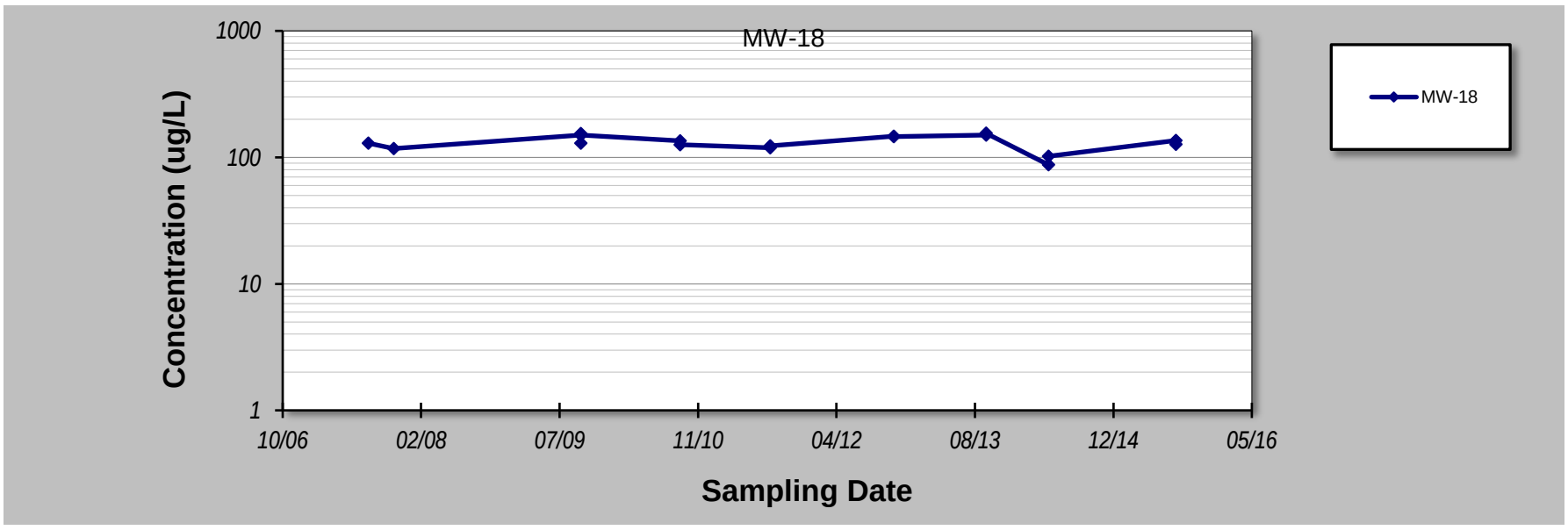
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-18**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	15-Aug-07	129.730
2	15-Nov-07	117.718
3	21-Sep-09	150.090
4	21-Sep-09	154.444
5	21-Sep-09	129.424
6	21-Sep-09	150.433
7	15-Sep-10	135.135
8	15-Sep-10	126.000
9	05-Aug-11	118.919
10	05-Aug-11	123.000
11	25-Oct-12	147.147
12	25-Oct-12	146.000
13	24-Sep-13	150.150
14	24-Sep-13	155.000
15	07-May-14	87.387
16	07-May-14	102.000
17	10-Aug-15	136.336
18	10-Aug-15	127.000
19		
20		
Coefficient of Variation:		0.14
Mann-Kendall Statistic (S):		-13
Confidence Factor:		67.3%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

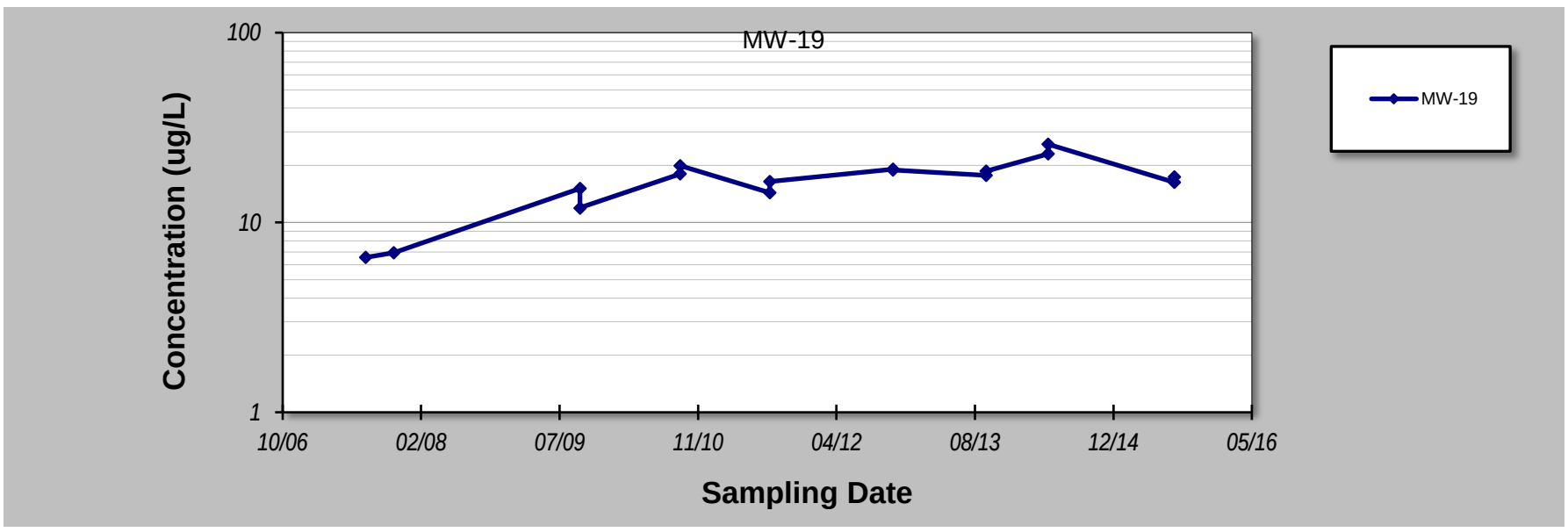
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-19**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	06-Aug-07	6.547
2	15-Nov-07	6.937
3	18-Sep-09	15.129
4	18-Sep-09	11.932
5	15-Sep-10	18.048
6	15-Sep-10	19.900
7	04-Aug-11	14.324
8	04-Aug-11	16.400
9	22-Oct-12	19.099
10	22-Oct-12	18.900
11	24-Sep-13	17.688
12	24-Sep-13	18.600
13	06-May-14	22.943
14	06-May-14	25.800
15	04-Aug-15	16.306
16	04-Aug-15	17.400
17		
18		
19		
20		
Coefficient of Variation:		0.30
Mann-Kendall Statistic (S):		54
Confidence Factor:		99.2%
Concentration Trend:		Increasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

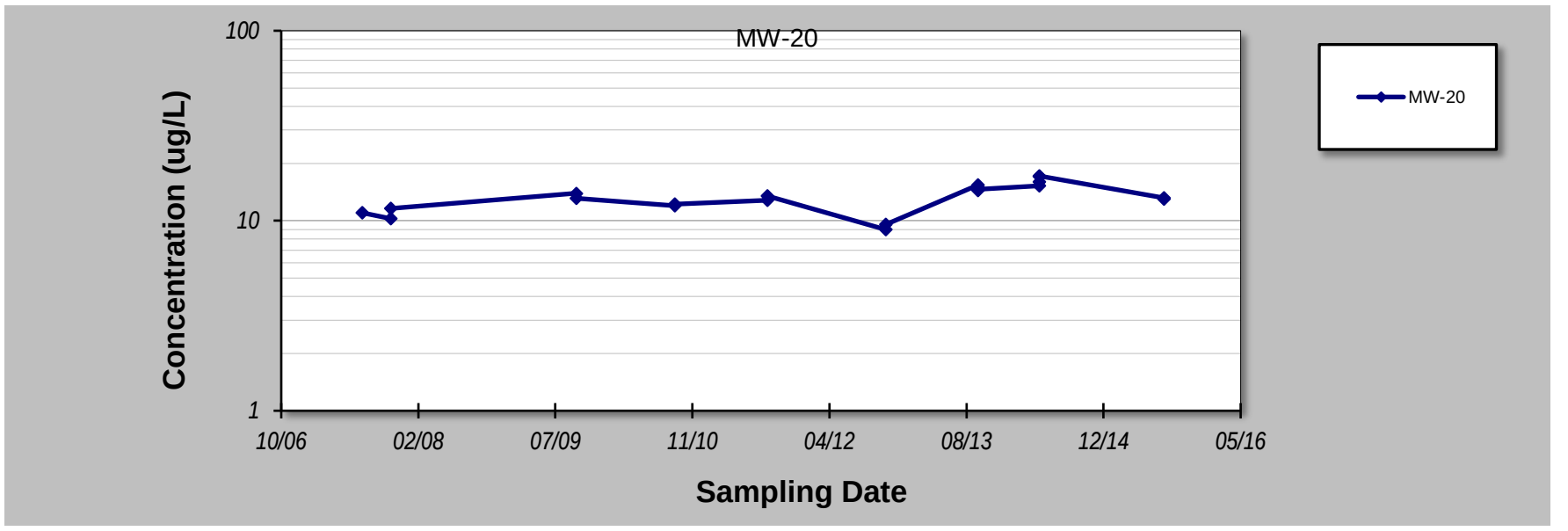
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-20**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	01-Aug-07	11.021
2	13-Nov-07	10.270
3	13-Nov-07	11.592
4	21-Sep-09	13.925
5	21-Sep-09	13.133
6	15-Sep-10	11.982
7	15-Sep-10	12.200
8	18-Aug-11	12.823
9	18-Aug-11	13.500
10	23-Oct-12	8.979
11	23-Oct-12	9.570
12	25-Sep-13	15.435
13	25-Sep-13	15.075
14	25-Sep-13	14.400
15	25-Sep-13	14.600
16	07-May-14	15.285
17	07-May-14	16.036
18	07-May-14	17.100
19	07-May-14	17.200
20	04-Aug-15	13.183
21	04-Aug-15	13.000
22		
23		
24		
25		
Coefficient of Variation:		0.17
Mann-Kendall Statistic (S):		100
Confidence Factor:		99.9%
Concentration Trend:		Increasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

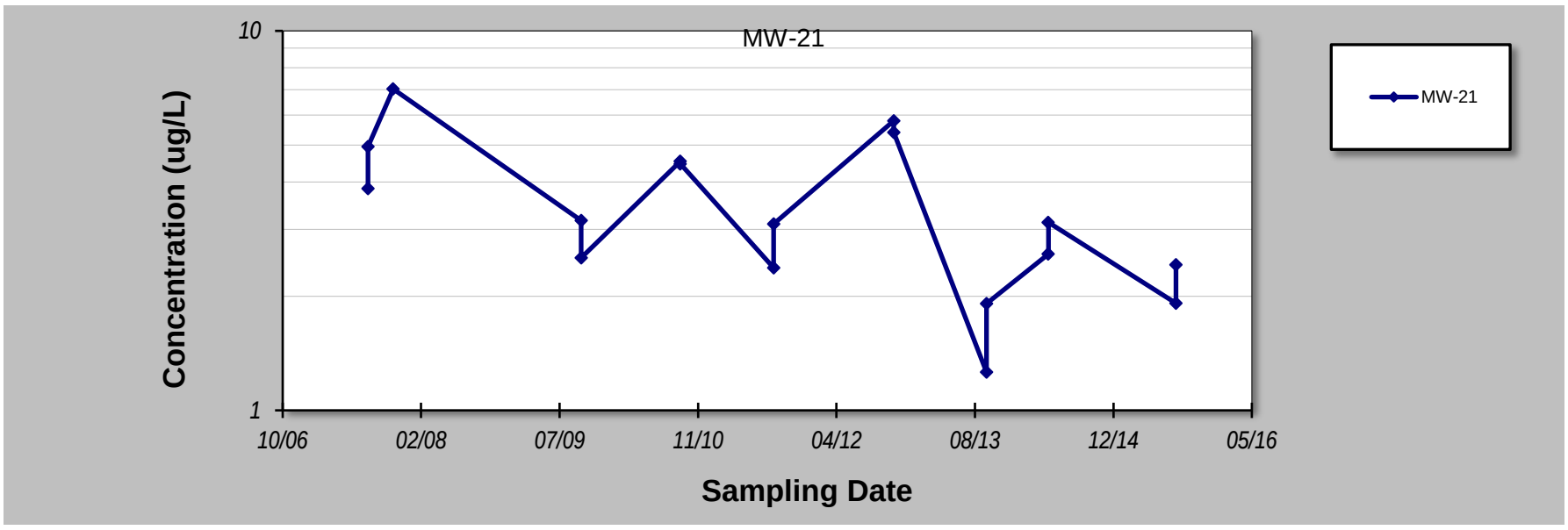
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-21**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	14-Aug-07	3.844
2	14-Aug-07	4.955
3	13-Nov-07	7.027
4	22-Sep-09	3.162
5	22-Sep-09	2.522
6	15-Sep-10	4.535
7	15-Sep-10	4.460
8	18-Aug-11	2.372
9	18-Aug-11	3.100
10	25-Oct-12	5.796
11	25-Oct-12	5.400
12	25-Sep-13	1.261
13	25-Sep-13	1.910
14	06-May-14	2.586
15	06-May-14	3.130
16	10-Aug-15	1.916
17	10-Aug-15	2.420
18		
19		
20		
Coefficient of Variation:		0.45
Mann-Kendall Statistic (S):		-48
Confidence Factor:		97.4%
Concentration Trend:		Decreasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

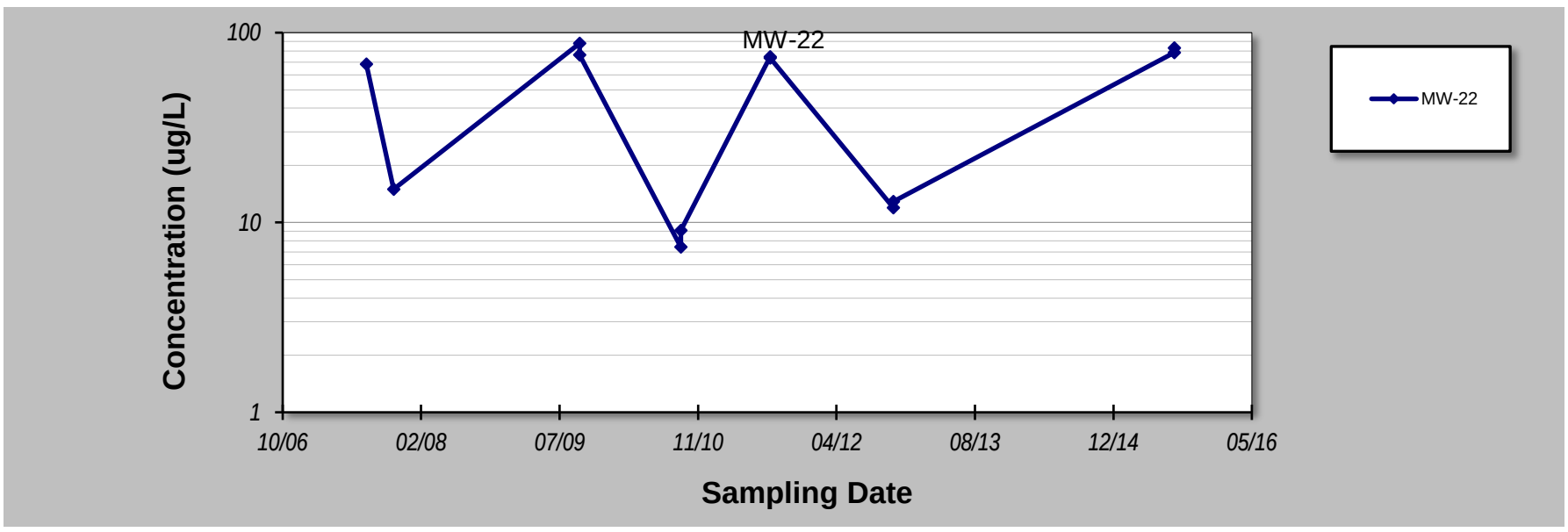
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-22**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	08-Aug-07	68.168
2	15-Nov-07	14.955
3	16-Sep-09	87.778
4	16-Sep-09	76.315
5	17-Sep-10	7.417
6	17-Sep-10	9.090
7	05-Aug-11	74.474
8	05-Aug-11	73.600
9	23-Oct-12	11.982
10	23-Oct-12	12.900
11	04-Aug-15	78.378
12	04-Aug-15	83.200
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		**0.69**
Mann-Kendall Statistic (S):		**8**
Confidence Factor:		**68.1%**
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

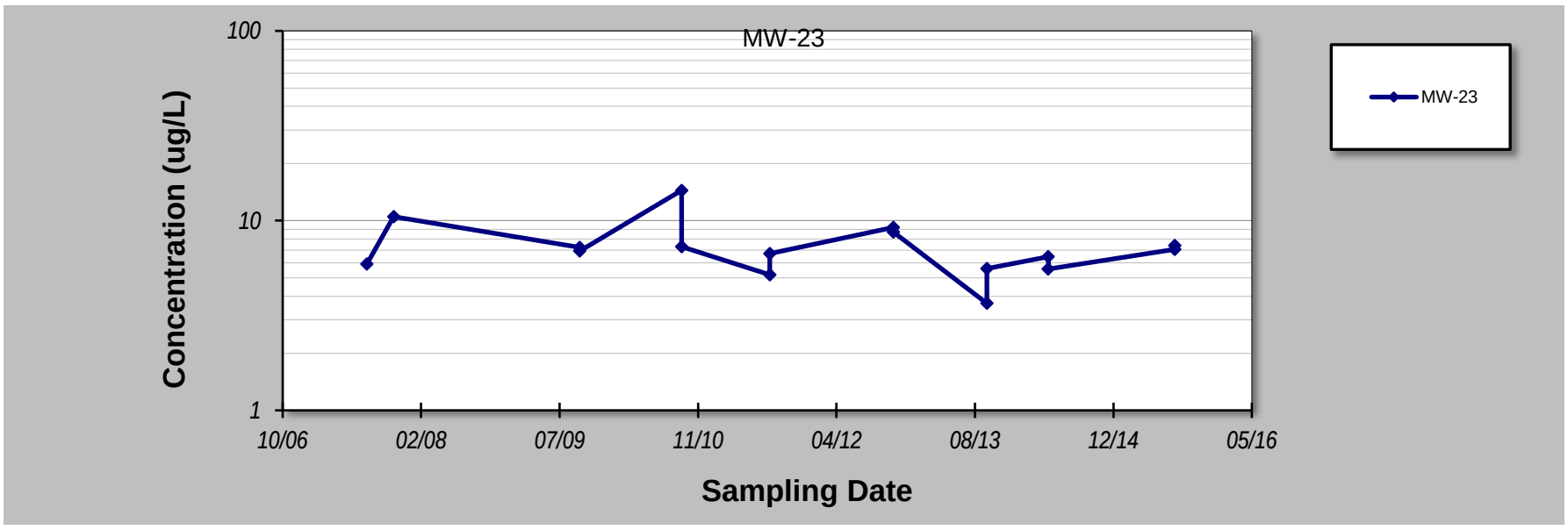
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-23**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	10-Aug-07	5.916
2	15-Nov-07	10.511
3	17-Sep-09	7.228
4	17-Sep-09	6.911
5	20-Sep-10	14.444
6	20-Sep-10	7.290
7	04-Aug-11	5.195
8	04-Aug-11	6.700
9	24-Oct-12	9.219
10	24-Oct-12	8.720
11	26-Sep-13	3.664
12	26-Sep-13	5.580
13	06-May-14	6.456
14	06-May-14	5.550
15	05-Aug-15	7.057
16	05-Aug-15	7.380
17		
18		
19		
20		
Coefficient of Variation:		0.34
Mann-Kendall Statistic (S):		-18
Confidence Factor:		77.5%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

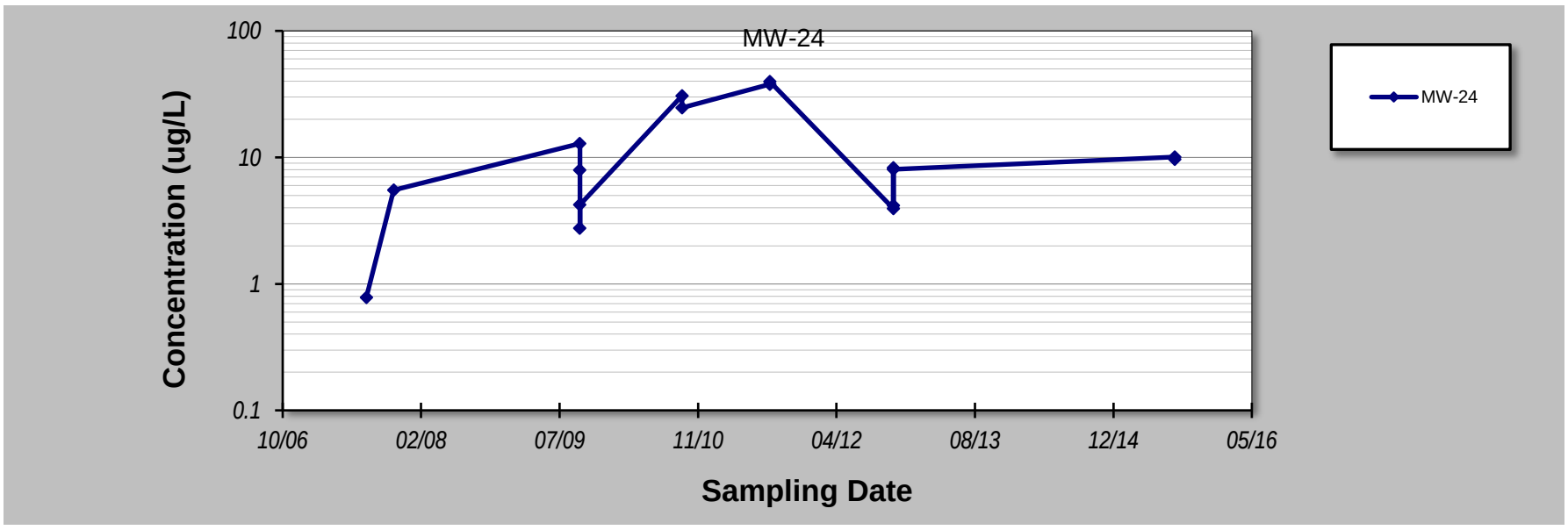
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-24**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	08-Aug-07	0.781
2	15-Nov-07	5.495
3	17-Sep-09	12.847
4	17-Sep-09	7.931
5	17-Sep-09	2.755
6	17-Sep-09	4.224
7	21-Sep-10	30.631
8	21-Sep-10	24.600
9	04-Aug-11	37.838
10	04-Aug-11	39.800
11	24-Oct-12	3.934
12	24-Oct-12	8.258
13	24-Oct-12	4.160
14	24-Oct-12	8.020
15	05-Aug-15	10.060
16	05-Aug-15	9.650
17		
18		
19		
20		
Coefficient of Variation:		**0.96**
Mann-Kendall Statistic (S):		**26**
Confidence Factor:		**86.7%**
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

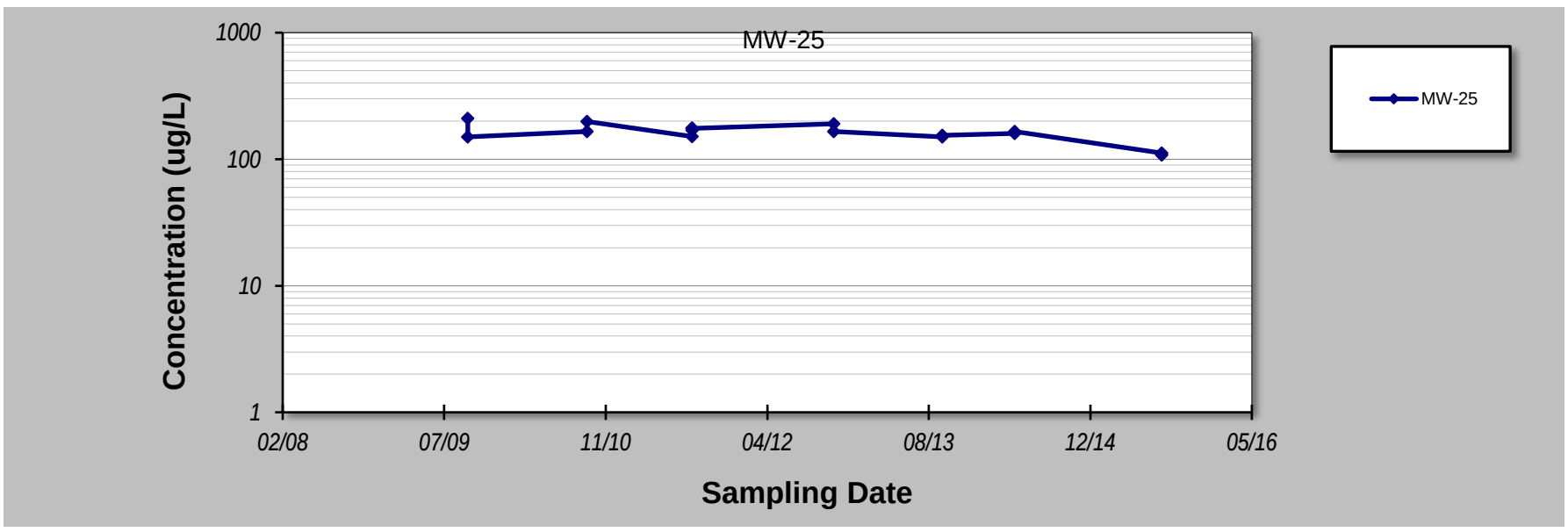
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-25**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	17-Sep-09	209.369
2	17-Sep-09	150.515
3	21-Sep-10	165.165
4	21-Sep-10	198.000
5	12-Aug-11	151.652
6	12-Aug-11	169.369
7	12-Aug-11	176.000
8	12-Aug-11	175.000
9	24-Oct-12	190.390
10	24-Oct-12	166.000
11	25-Sep-13	149.850
12	25-Sep-13	154.000
13	07-May-14	160.360
14	07-May-14	166.000
15	05-Aug-15	111.712
16	05-Aug-15	108.000
17		
18		
19		
20		
Coefficient of Variation:		0.16
Mann-Kendall Statistic (S):		-45
Confidence Factor:		97.7%
Concentration Trend:		Decreasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

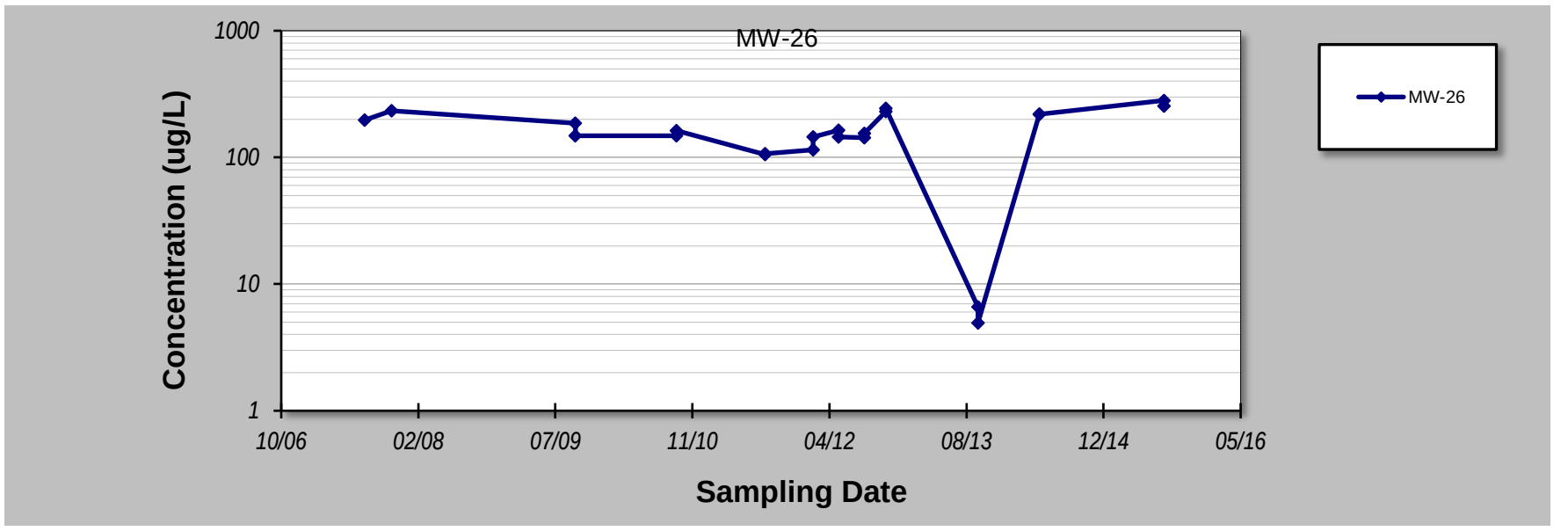
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-26**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	10-Aug-07	196.997
2	16-Nov-07	233.934
3	17-Sep-09	186.276
4	17-Sep-09	148.625
5	21-Sep-10	148.048
6	21-Sep-10	162.000
7	10-Aug-11	105.105
8	10-Aug-11	107.000
9	01-Feb-12	115.015
10	01-Feb-12	145.000
11	04-May-12	163.363
12	04-May-12	145.000
13	06-Aug-12	142.943
14	06-Aug-12	155.000
15	24-Oct-12	230.931
16	24-Oct-12	243.000
17	25-Sep-13	6.607
18	25-Sep-13	4.950
19	07-May-14	218.318
20	07-May-14	219.000
21	04-Aug-15	281.681
22	04-Aug-15	255.000
23		
24		
25		
Coefficient of Variation:		**0.43**
Mann-Kendall Statistic (S):		**28**
Confidence Factor:		**77.5%**
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

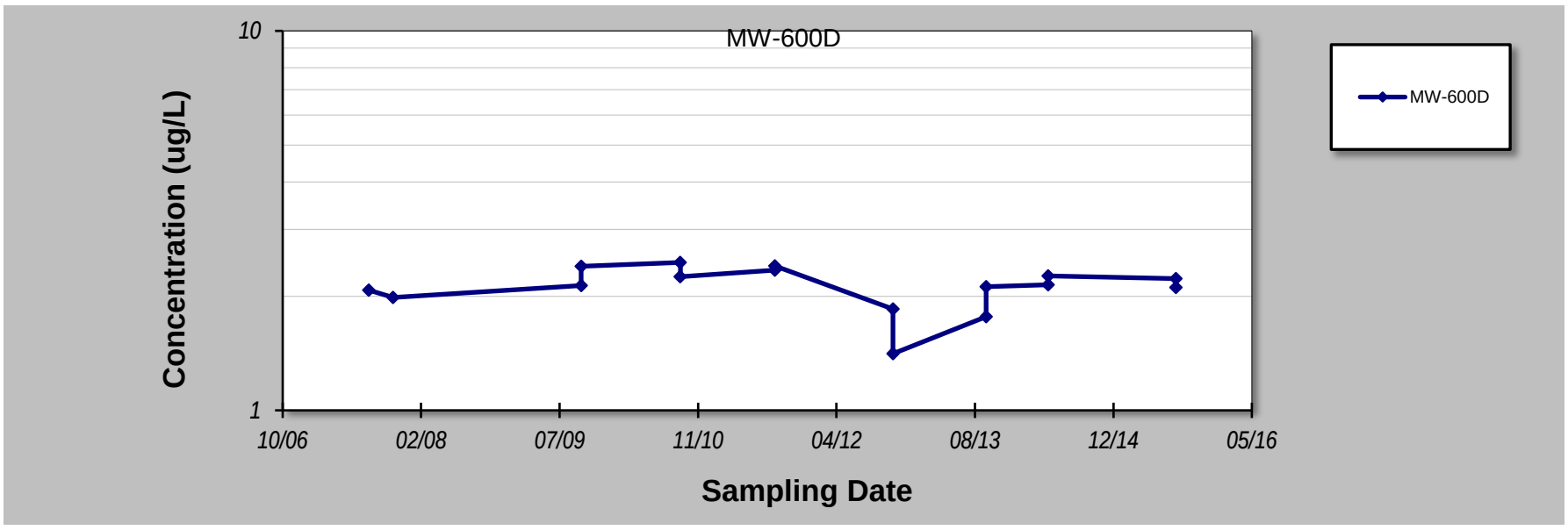
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-600D**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	17-Aug-07	2.072
2	13-Nov-07	1.982
3	22-Sep-09	2.135
4	22-Sep-09	2.398
5	15-Sep-10	2.453
6	15-Sep-10	2.250
7	22-Aug-11	2.342
8	22-Aug-11	2.400
9	22-Oct-12	1.850
10	22-Oct-12	1.410
11	24-Sep-13	1.766
12	24-Sep-13	2.120
13	06-May-14	2.144
14	06-May-14	2.260
15	10-Aug-15	2.222
16	10-Aug-15	2.110
17		
18		
19		
20		
Coefficient of Variation:		0.13
Mann-Kendall Statistic (S):		-6
Confidence Factor:		58.8%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

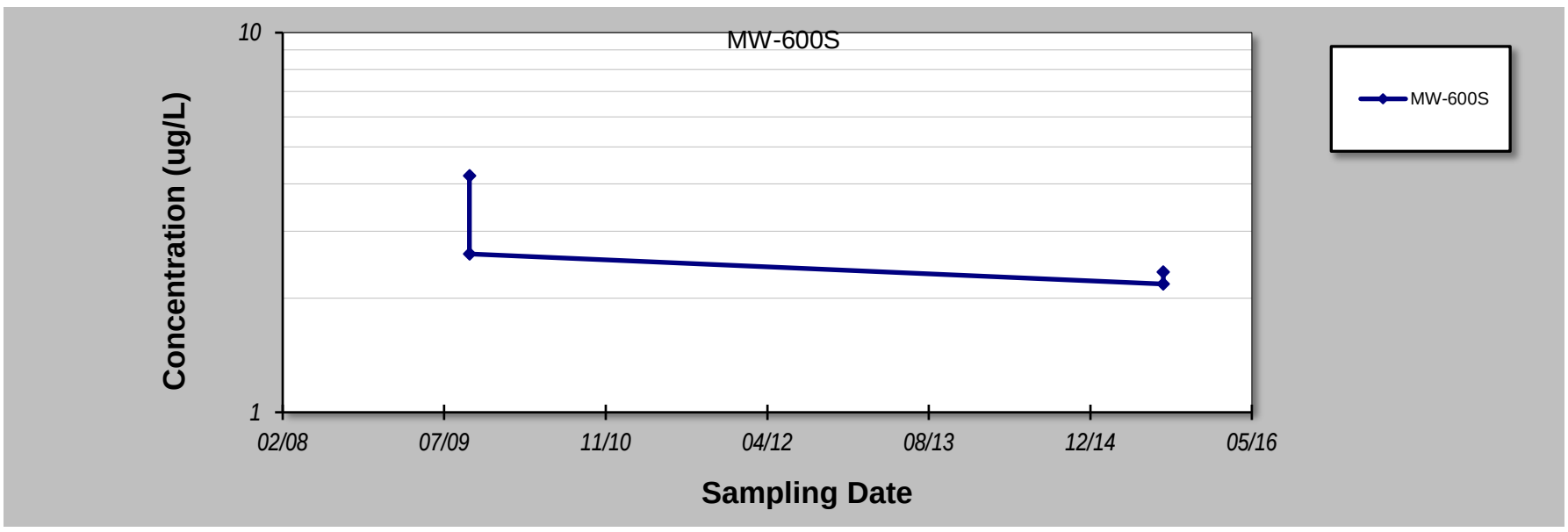
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-600S**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	22-Sep-09	4.198
2	22-Sep-09	2.613
3	10-Aug-15	2.177
4	10-Aug-15	2.340
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		**0.33**
Mann-Kendall Statistic (S):		**-4**
Confidence Factor:		**83.3%**
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

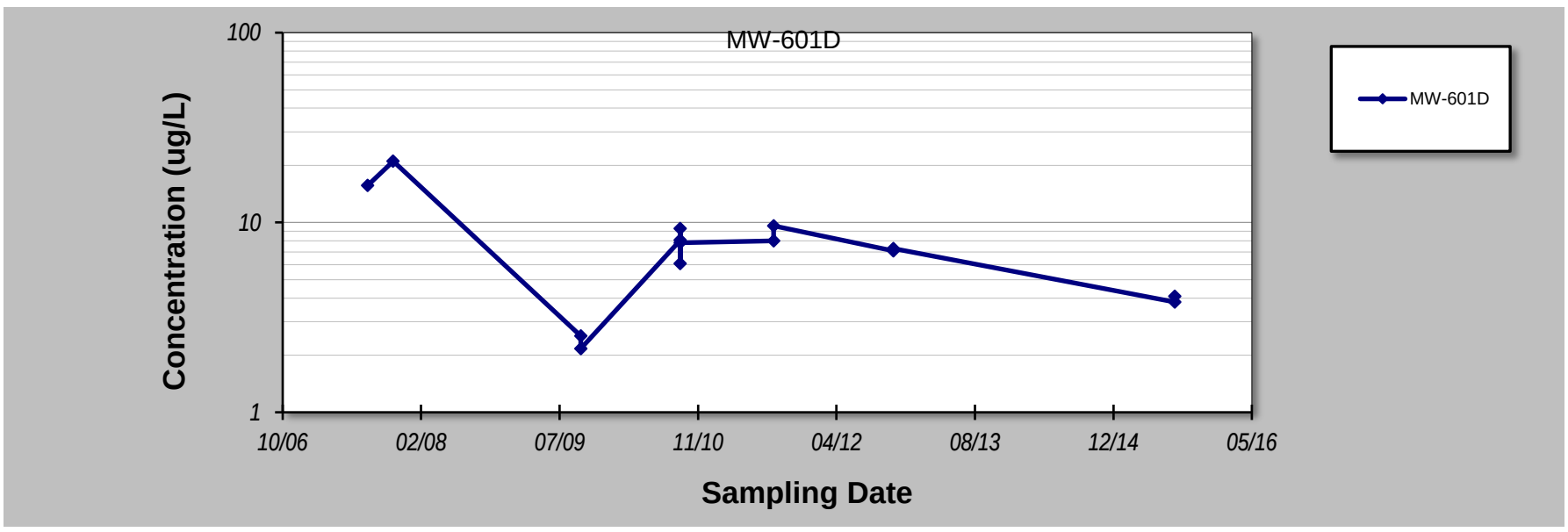
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-601D**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	13-Aug-07	15.706
2	13-Nov-07	21.021
3	21-Sep-09	2.524
4	21-Sep-09	2.165
5	15-Sep-10	8.078
6	15-Sep-10	9.309
7	15-Sep-10	6.090
8	15-Sep-10	7.810
9	18-Aug-11	7.988
10	18-Aug-11	9.600
11	23-Oct-12	7.087
12	23-Oct-12	7.300
13	06-Aug-15	3.814
14	06-Aug-15	4.090
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.63
Mann-Kendall Statistic (S):		-23
Confidence Factor:		88.3%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

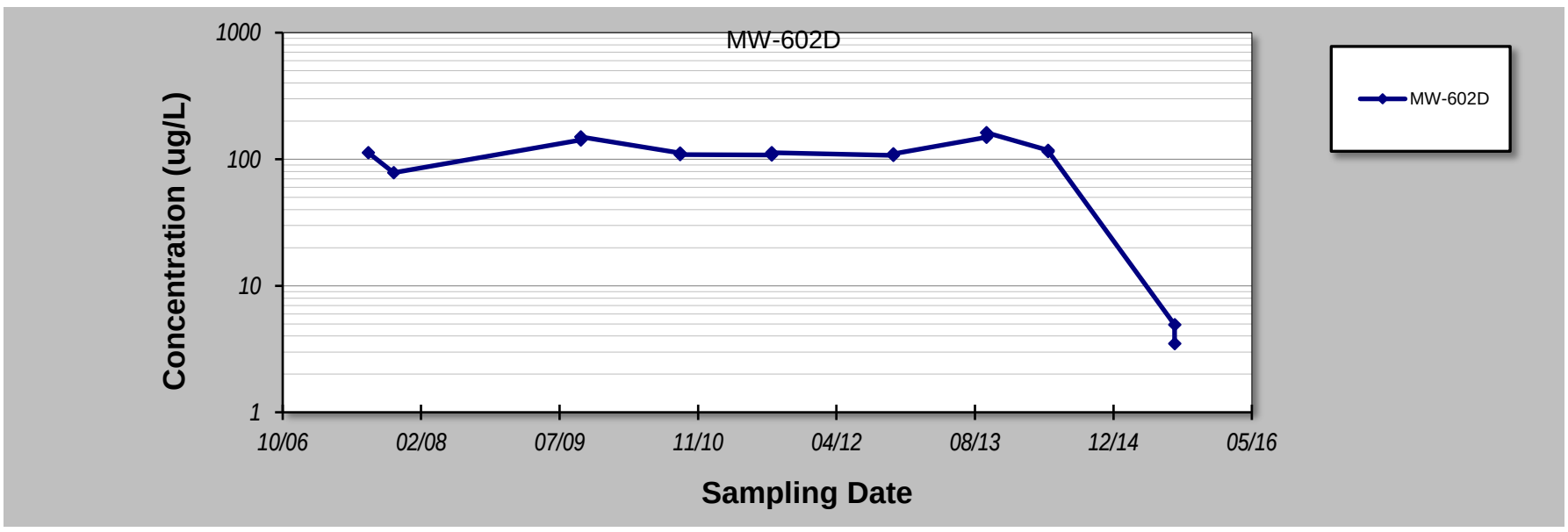
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-602D**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	15-Aug-07	112.613
2	15-Nov-07	78.078
3	21-Sep-09	142.222
4	21-Sep-09	150.232
5	15-Sep-10	112.012
6	15-Sep-10	109.000
7	11-Aug-11	108.108
8	11-Aug-11	113.000
9	23-Oct-12	107.207
10	23-Oct-12	110.000
11	25-Sep-13	148.649
12	25-Sep-13	162.000
13	06-May-14	117.417
14	06-May-14	115.000
15	05-Aug-15	4.925
16	05-Aug-15	3.480
17		
18		
19		
20		
Coefficient of Variation:		0.42
Mann-Kendall Statistic (S):		-12
Confidence Factor:		68.7%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

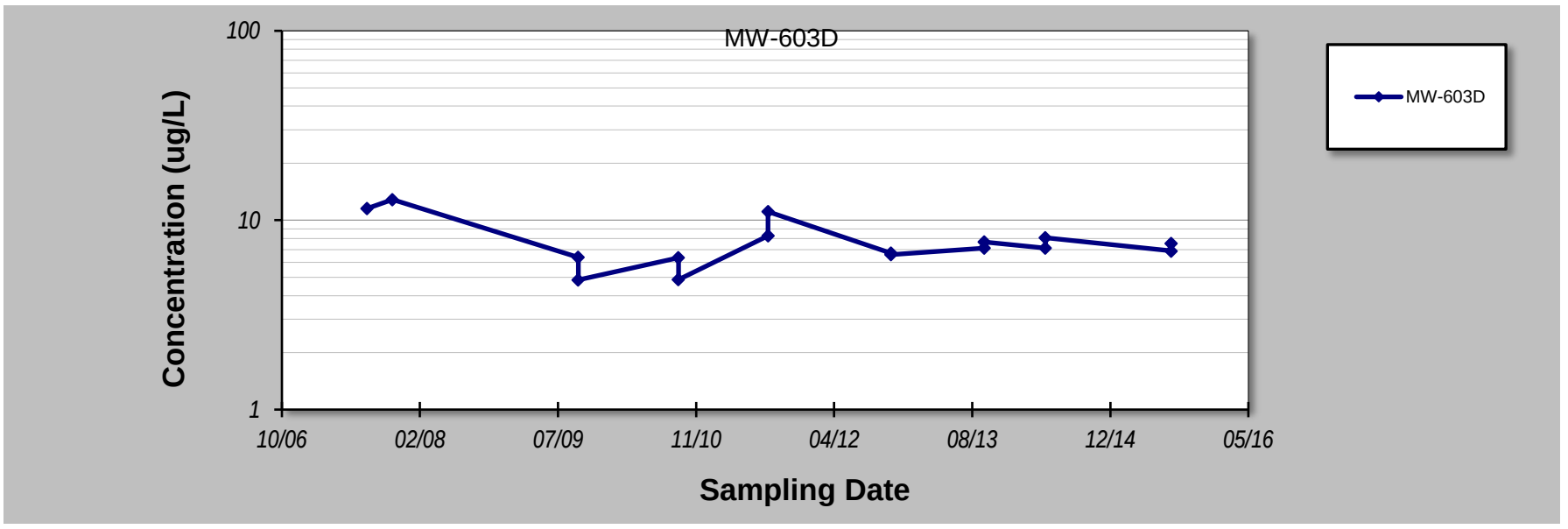
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-603D**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	14-Aug-07	11.532
2	14-Nov-07	12.853
3	17-Sep-09	6.357
4	17-Sep-09	4.840
5	15-Sep-10	6.336
6	15-Sep-10	4.860
7	05-Aug-11	8.288
8	05-Aug-11	11.100
9	23-Oct-12	6.697
10	23-Oct-12	6.580
11	26-Sep-13	7.117
12	26-Sep-13	7.680
13	06-May-14	7.117
14	06-May-14	8.080
15	04-Aug-15	6.877
16	04-Aug-15	7.550
17		
18		
19		
20		
Coefficient of Variation:		0.29
Mann-Kendall Statistic (S):		7
Confidence Factor:		60.5%
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

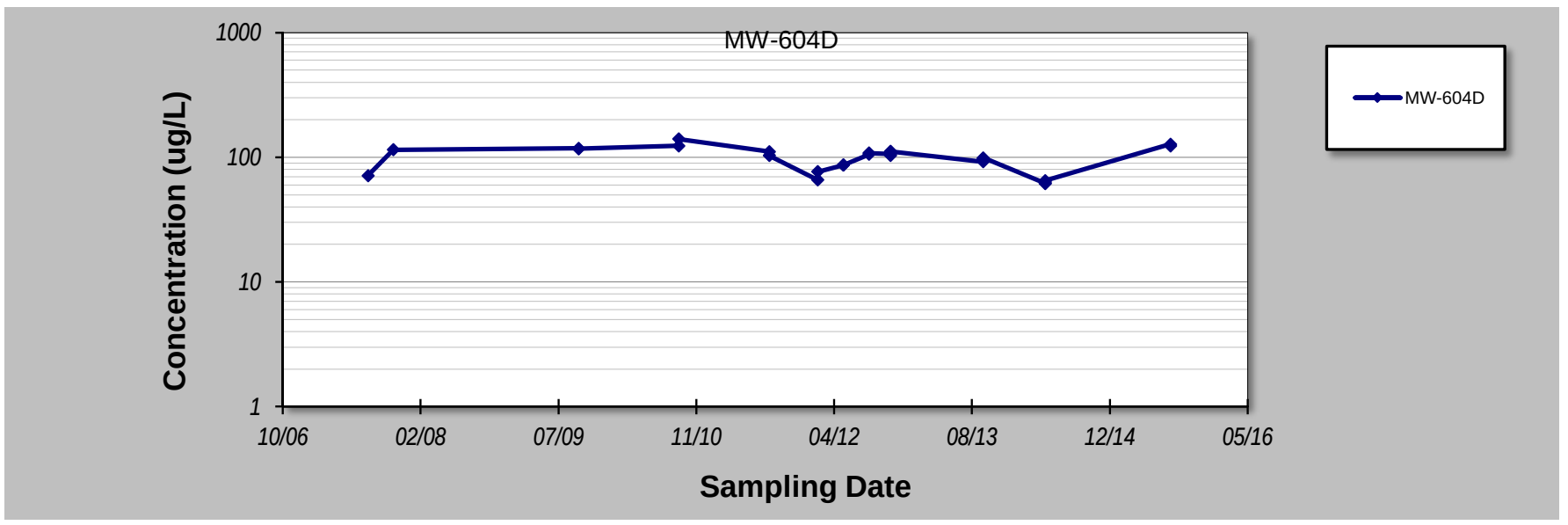
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-604D**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	15-Aug-07	71.171
2	15-Nov-07	114.715
3	18-Sep-09	117.868
4	18-Sep-09	117.076
5	15-Sep-10	123.724
6	15-Sep-10	140.000
7	10-Aug-11	111.111
8	10-Aug-11	103.000
9	02-Feb-12	65.766
10	02-Feb-12	76.700
11	04-May-12	86.486
12	04-May-12	86.500
13	06-Aug-12	105.706
14	06-Aug-12	108.000
15	23-Oct-12	106.306
16	23-Oct-12	103.604
17	23-Oct-12	112.000
18	23-Oct-12	111.000
19	24-Sep-13	91.892
20	24-Sep-13	96.396
21	24-Sep-13	97.200
22	24-Sep-13	98.800
23	07-May-14	61.562
24	07-May-14	62.162
25	07-May-14	63.600
26	07-May-14	64.900
27	04-Aug-15	127.327
28	04-Aug-15	123.000
29		
30		
Coefficient of Variation:		0.23
Mann-Kendall Statistic (S):		-72
Confidence Factor:		91.9%
Concentration Trend:		Prob. Decreasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

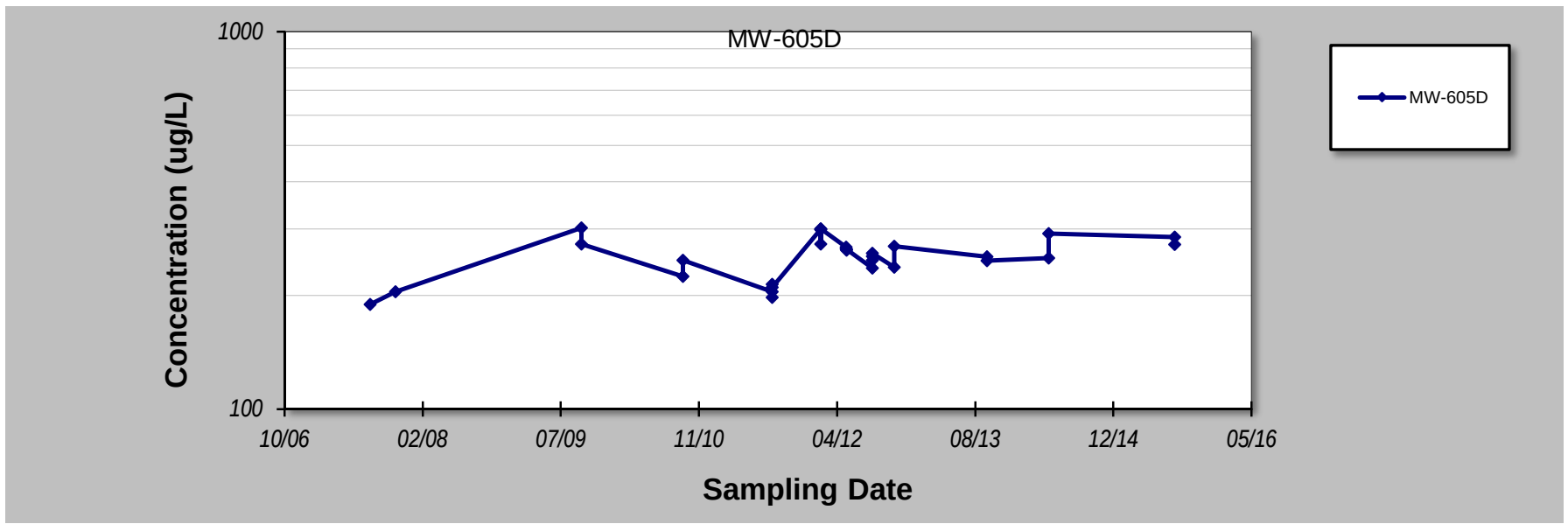
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-605D**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	16-Aug-07	189.189
2	16-Nov-07	204.805
3	18-Sep-09	302.402
4	18-Sep-09	273.901
5	21-Sep-10	224.624
6	21-Sep-10	248.000
7	10-Aug-11	204.504
8	10-Aug-11	197.597
9	10-Aug-11	214.000
10	10-Aug-11	210.000
11	01-Feb-12	299.699
12	01-Feb-12	273.273
13	01-Feb-12	299.000
14	01-Feb-12	300.000
15	04-May-12	268.769
16	04-May-12	266.000
17	05-May-12	263.663
18	05-May-12	265.000
19	06-Aug-12	236.336
20	06-Aug-12	248.048
21	06-Aug-12	254.000
22	06-Aug-12	259.000
23	24-Oct-12	237.537
24	24-Oct-12	270.000
25	25-Sep-13	253.153
26	25-Sep-13	247.000
27	06-May-14	251.351
28	06-May-14	292.000
29	05-Aug-15	285.886
30	05-Aug-15	273.000
31		
32		
33		
34		
35		
Coefficient of Variation:		0.13
Mann-Kendall Statistic (S):		71
Confidence Factor:		89.3%
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

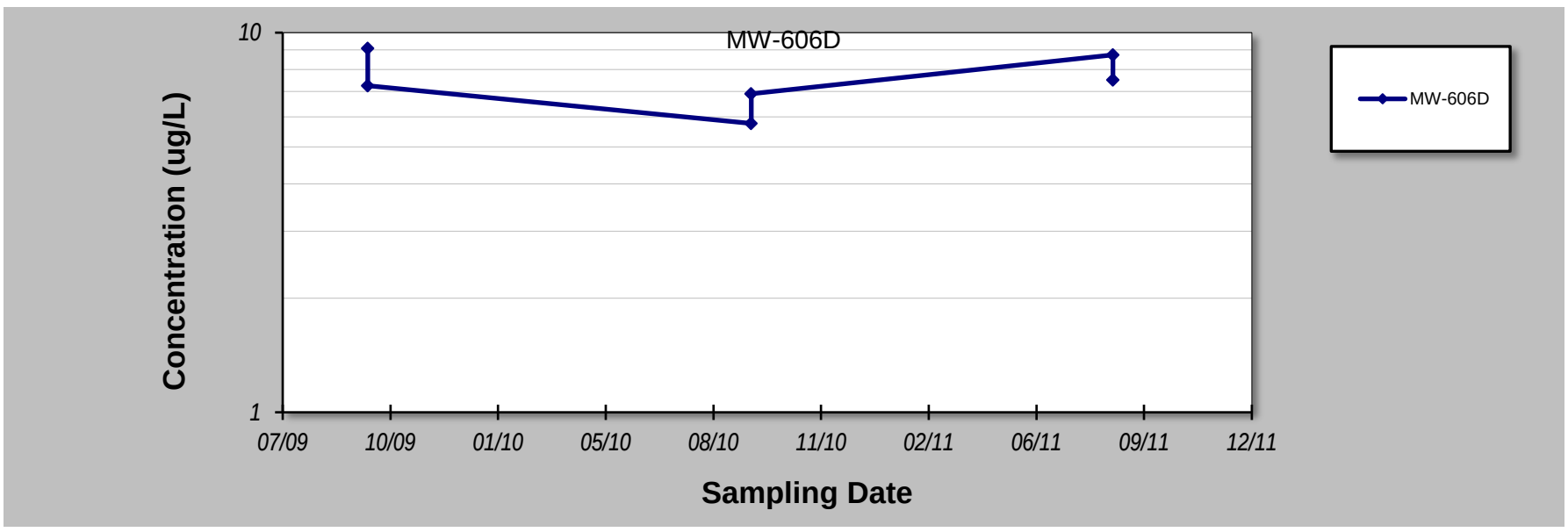
DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	3-Jan-17	Job ID:	N/A
Facility Name:	Guterl Site	Constituent:	Total U
Conducted By:	WTF - NL	Concentration Units:	ug/L

Sampling Point ID: MW-606D

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	23-Sep-09	9.096
2	23-Sep-09	7.244
3	14-Sep-10	5.766
4	14-Sep-10	6.910
5	16-Aug-11	8.739
6	16-Aug-11	7.500
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.16
Mann-Kendall Statistic (S):		-1
Confidence Factor:		50.0%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

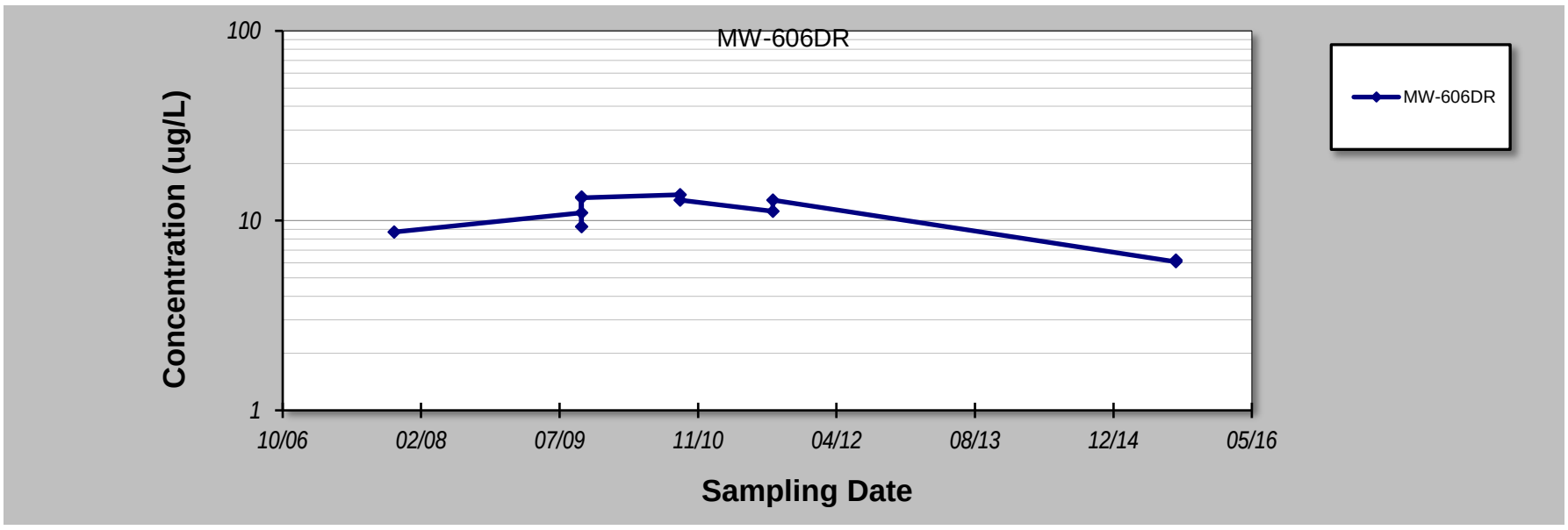
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-606DR**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	16-Nov-07	8.709
2	23-Sep-09	10.979
3	23-Sep-09	13.312
4	23-Sep-09	9.287
5	23-Sep-09	13.202
6	14-Sep-10	13.694
7	14-Sep-10	12.800
8	15-Aug-11	11.201
9	15-Aug-11	12.800
10	10-Aug-15	6.066
11	10-Aug-15	6.200
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.26
Mann-Kendall Statistic (S):		-8
Confidence Factor:		70.3%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

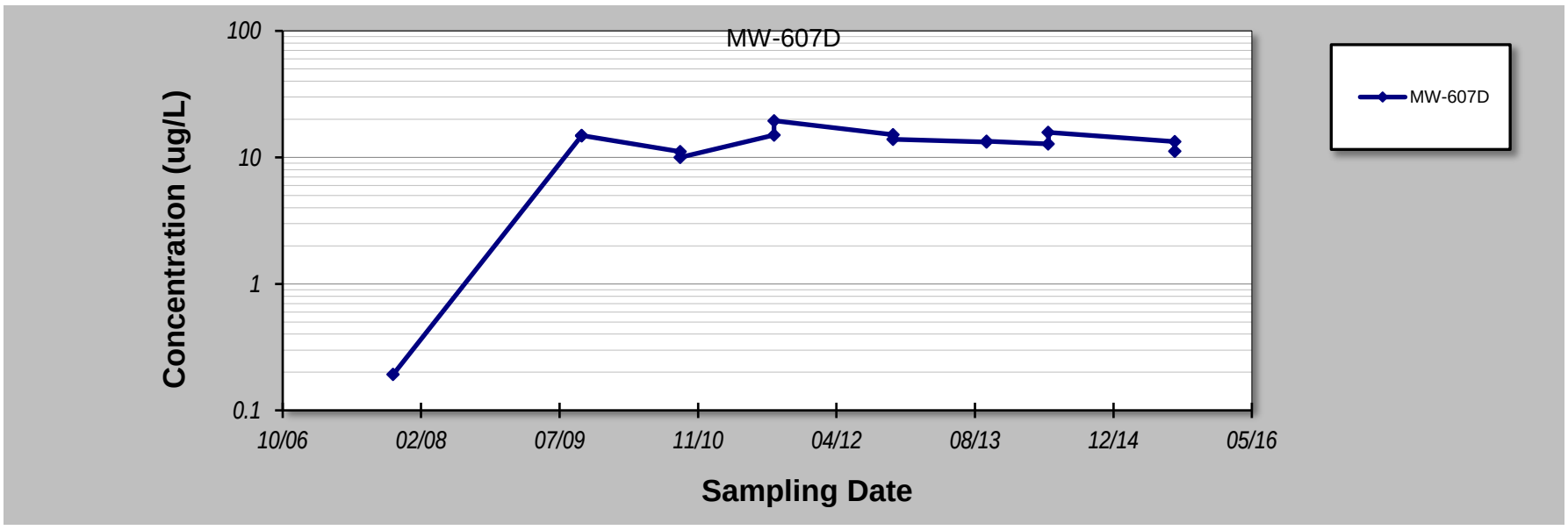
GSI Environmental Inc., www.gsi-net.com

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	3-Jan-17	Job ID:	N/A
Facility Name:	Guterl Site	Constituent:	Total U
Conducted By:	WTF - NL	Concentration Units:	ug/L

Sampling Point ID: MW-607D

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	15-Aug-07	-0.030
2	13-Nov-07	0.192
3	23-Sep-09	14.769
4	23-Sep-09	14.909
5	14-Sep-10	11.141
6	14-Sep-10	10.000
7	19-Aug-11	14.985
8	19-Aug-11	19.500
9	22-Oct-12	15.165
10	22-Oct-12	13.900
11	25-Sep-13	13.213
12	25-Sep-13	13.400
13	06-May-14	12.763
14	06-May-14	15.800
15	06-Aug-15	13.363
16	06-Aug-15	11.200
17		
18		
19		
20		
Coefficient of Variation:		0.43
Mann-Kendall Statistic (S):		18
Confidence Factor:		77.5%
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

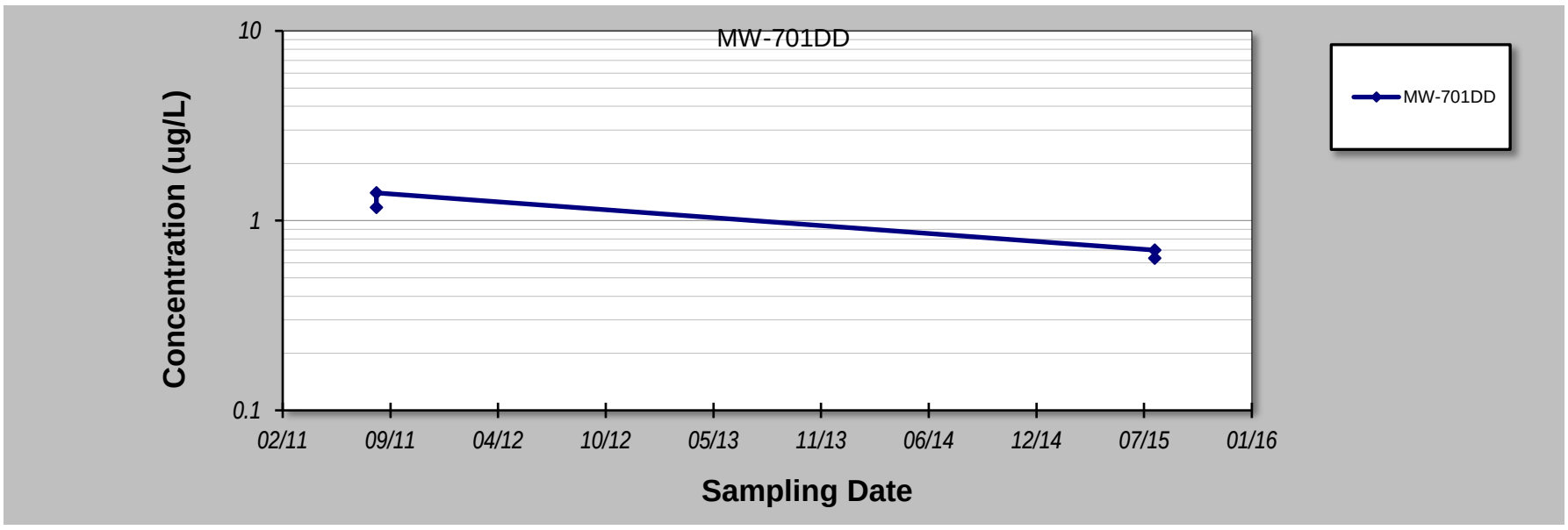
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-701DD**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	19-Aug-11	1.171
2	19-Aug-11	1.400
3	04-Aug-15	0.700
4	04-Aug-15	0.633
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		**0.38**
Mann-Kendall Statistic (S):		**-4**
Confidence Factor:		**83.3%**
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

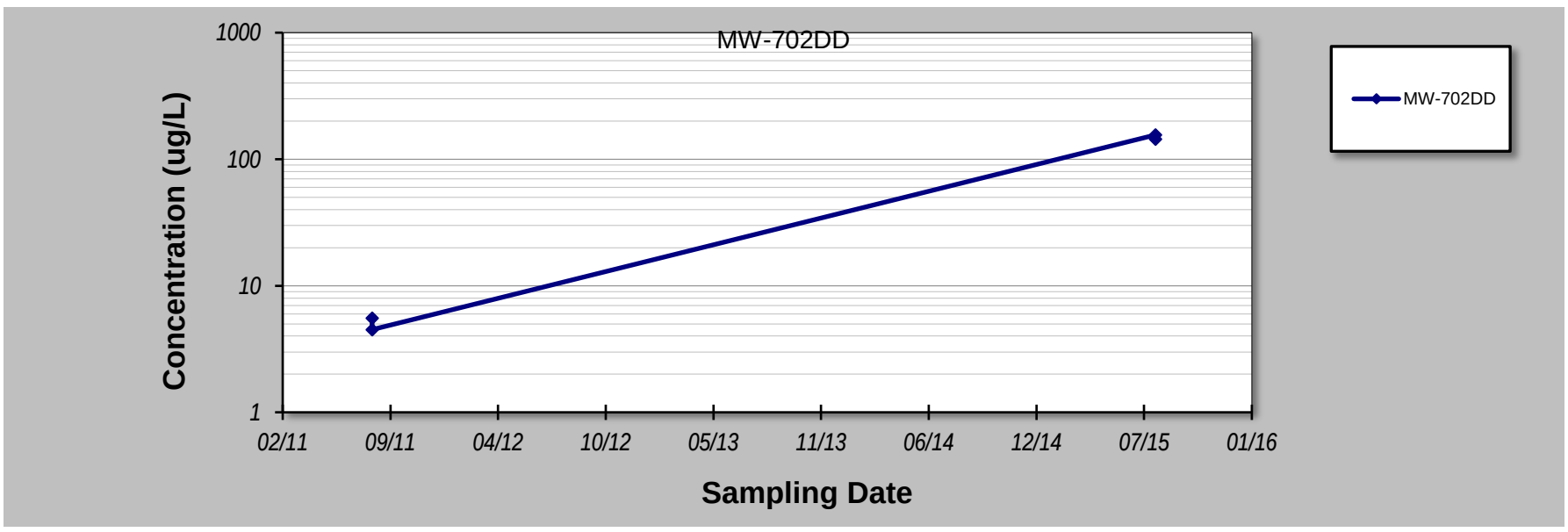
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-702DD**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	11-Aug-11	5.526
2	11-Aug-11	4.500
3	05-Aug-15	155.555
4	05-Aug-15	144.000
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		1.08
Mann-Kendall Statistic (S):		2
Confidence Factor:		62.5%
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

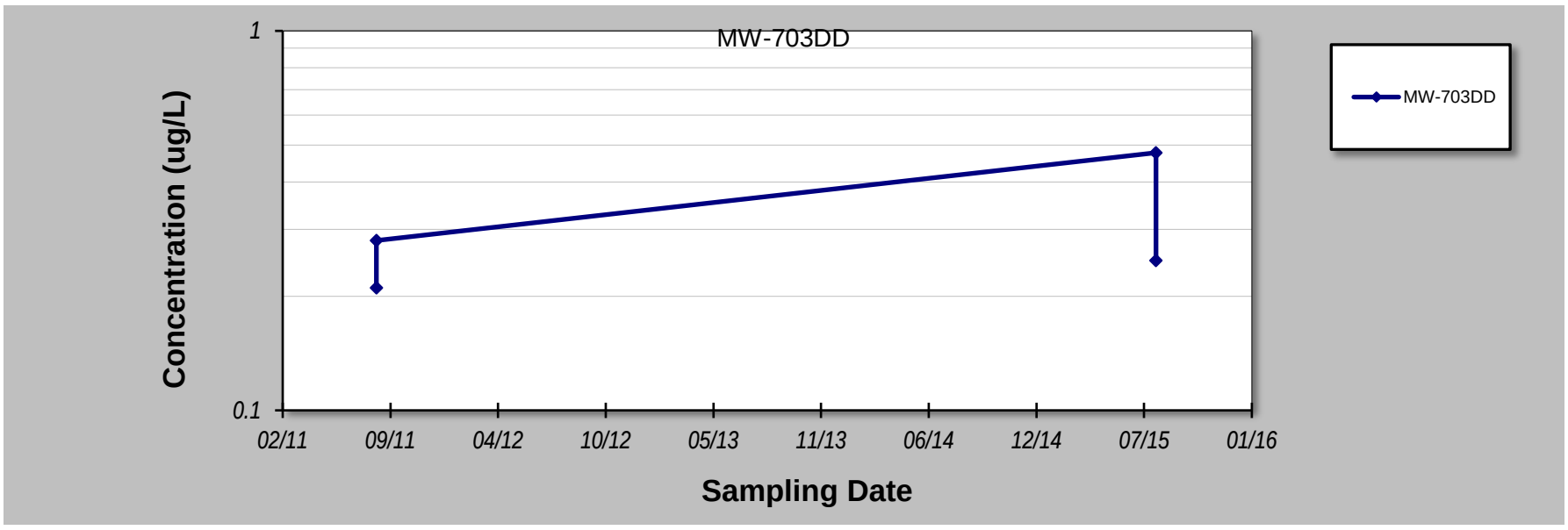
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-15**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-703DD**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	19-Aug-11	0.210
2	19-Aug-11	0.280
3	06-Aug-15	0.477
4	06-Aug-15	0.248
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.39
Mann-Kendall Statistic (S):		2
Confidence Factor:		62.5%
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

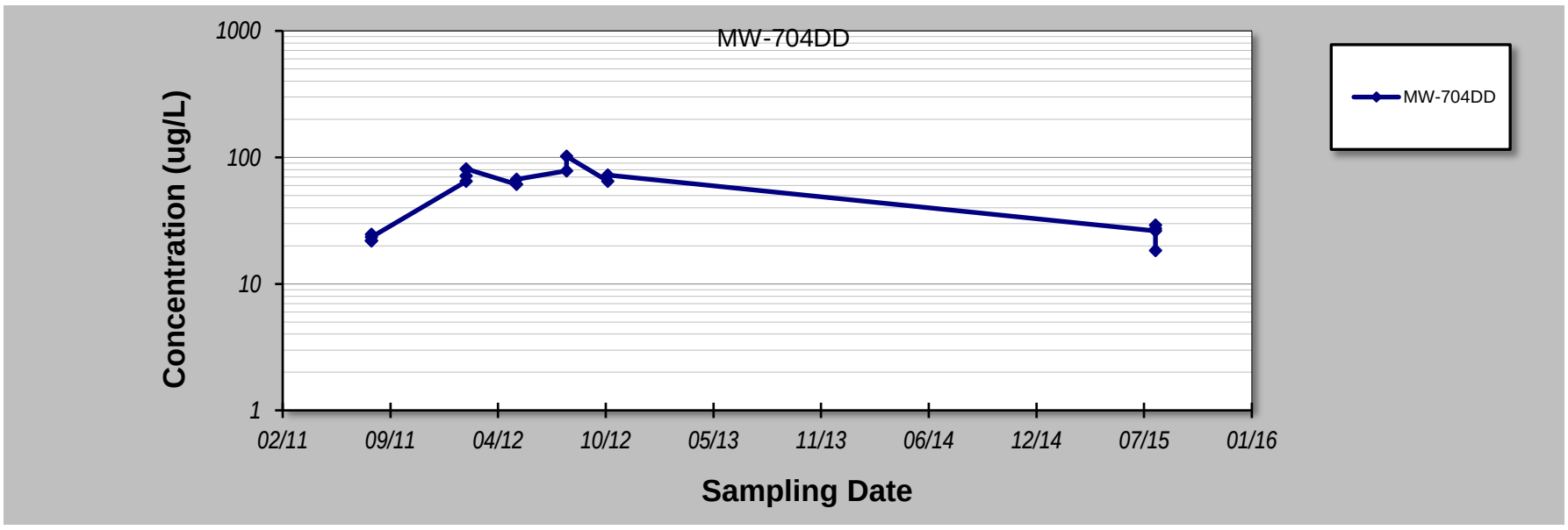
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-704DD**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	10-Aug-11	21.952
2	10-Aug-11	21.802
3	10-Aug-11	24.700
4	10-Aug-11	23.500
5	02-Feb-12	64.565
6	02-Feb-12	71.471
7	02-Feb-12	81.300
8	05-May-12	61.261
9	05-May-12	67.000
10	06-Aug-12	78.378
11	06-Aug-12	102.000
12	22-Oct-12	64.565
13	22-Oct-12	72.400
14	05-Aug-15	26.216
15	05-Aug-15	29.129
16	05-Aug-15	27.400
17	05-Aug-15	18.300
18		
19		
20		
Coefficient of Variation:		**0.54**
Mann-Kendall Statistic (S):		**15**
Confidence Factor:		**71.5%**
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

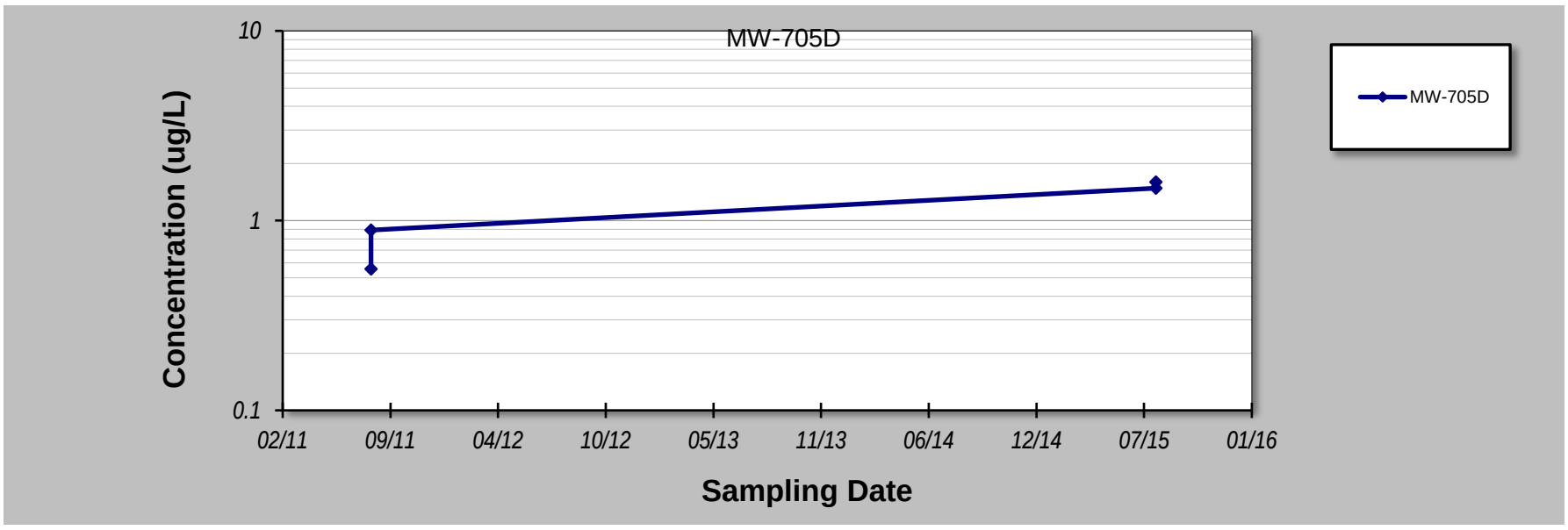
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-705D**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	09-Aug-11	0.556
2	09-Aug-11	0.890
3	06-Aug-15	1.483
4	06-Aug-15	1.600
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.44
Mann-Kendall Statistic (S):		6
Confidence Factor:		95.8%
Concentration Trend:		Increasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

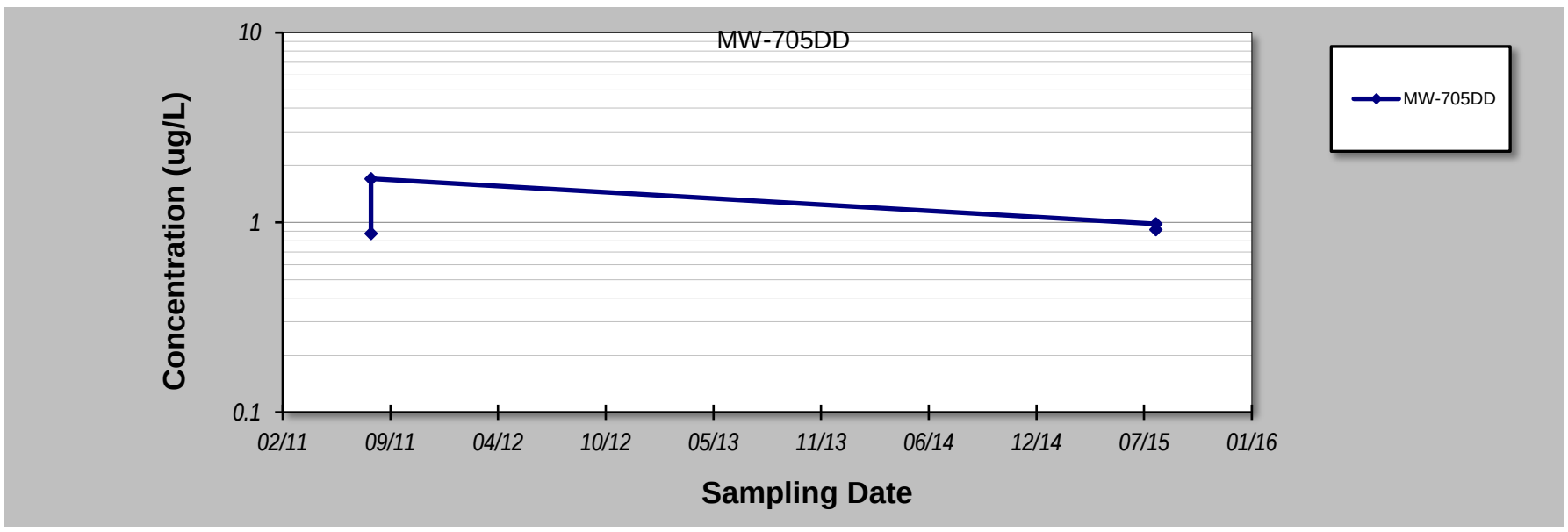
DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	3-Jan-17	Job ID:	N/A
Facility Name:	Guterl Site	Constituent:	Total U
Conducted By:	WTF - NL	Concentration Units:	ug/L

Sampling Point ID: MW-705DD

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	09-Aug-11	0.874
2	09-Aug-11	1.700
3	06-Aug-15	0.982
4	06-Aug-15	0.918
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.35
Mann-Kendall Statistic (S):		0
Confidence Factor:		37.5%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

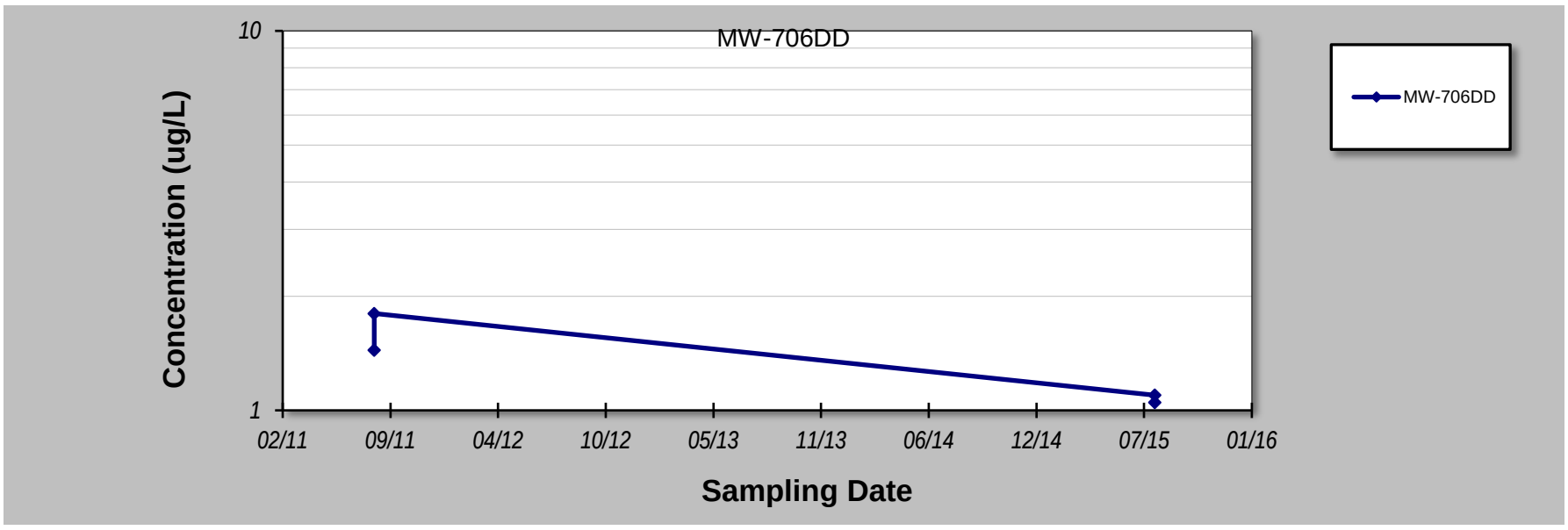
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-706DD**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	15-Aug-11	1.441
2	15-Aug-11	1.800
3	04-Aug-15	1.096
4	04-Aug-15	1.050
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.26
Mann-Kendall Statistic (S):		-4
Confidence Factor:		83.3%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

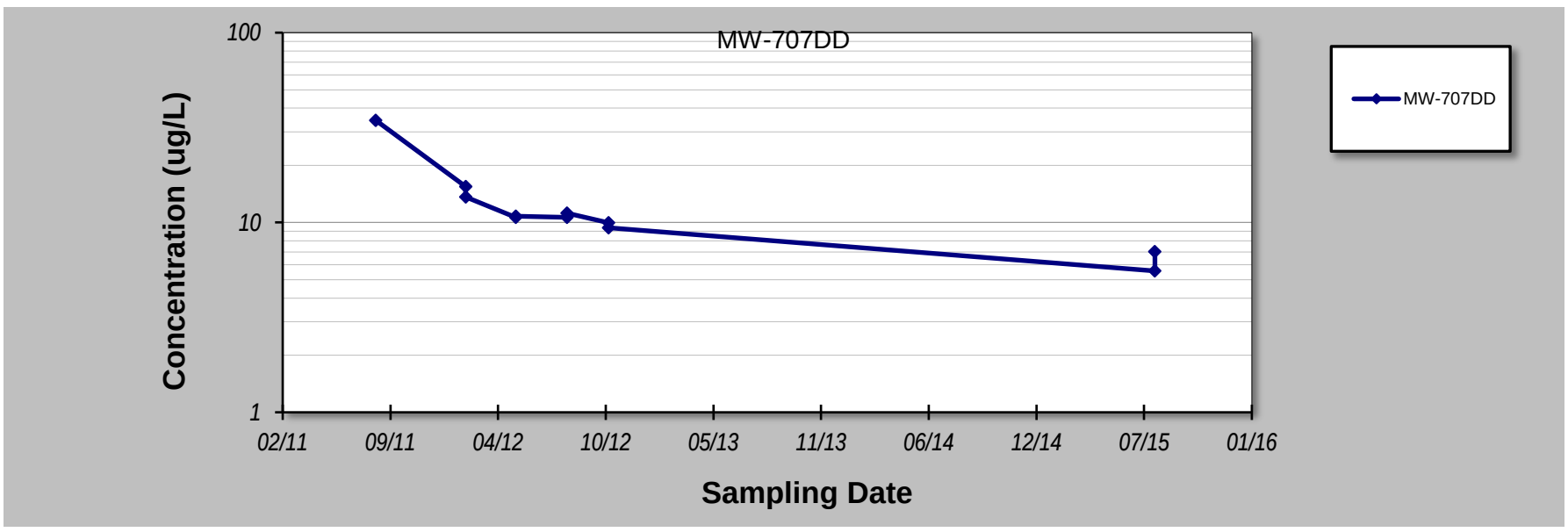
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-707DD**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	18-Aug-11	34.500
2	01-Feb-12	15.435
3	01-Feb-12	13.600
4	04-May-12	10.631
5	04-May-12	10.800
6	07-Aug-12	10.661
7	07-Aug-12	11.200
8	23-Oct-12	9.970
9	23-Oct-12	9.400
10	04-Aug-15	5.556
11	04-Aug-15	7.010
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		**0.61**
Mann-Kendall Statistic (S):		**-43**
Confidence Factor:		**>99.9%**
Concentration Trend:		Decreasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

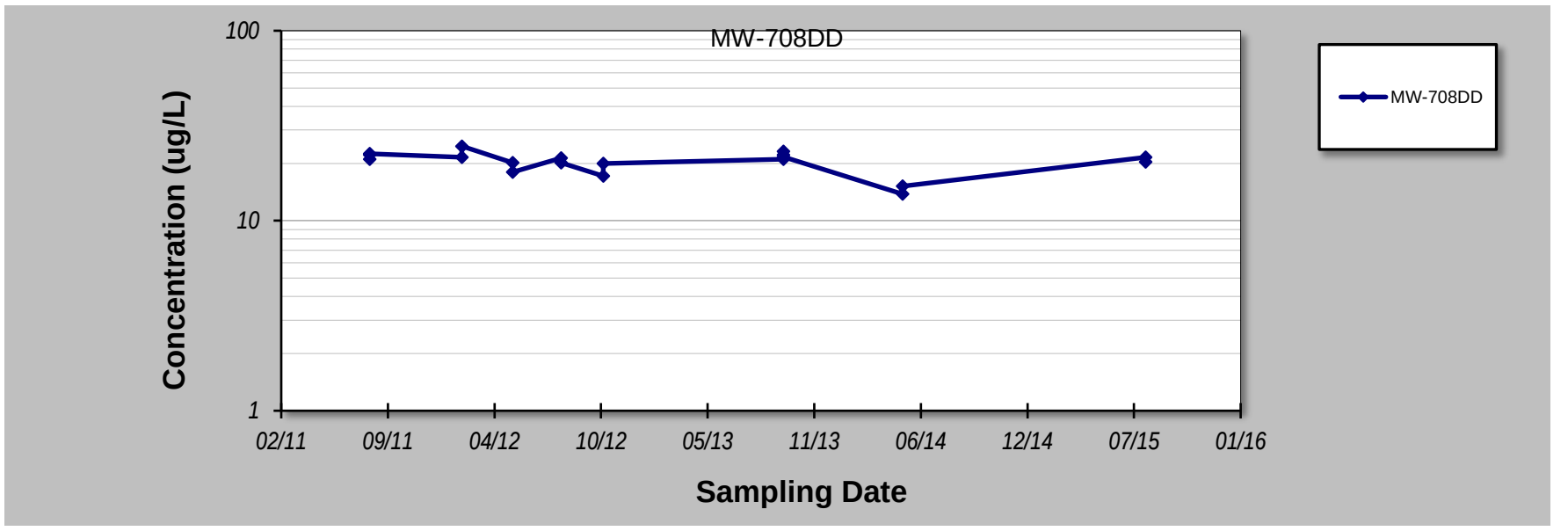
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-708DD**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	11-Aug-11	21.111
2	11-Aug-11	22.192
3	11-Aug-11	22.400
4	11-Aug-11	22.500
5	31-Jan-12	21.622
6	31-Jan-12	24.700
7	05-May-12	20.180
8	05-May-12	18.000
9	04-Aug-12	21.381
10	04-Aug-12	20.200
11	22-Oct-12	17.177
12	22-Oct-12	20.000
13	25-Sep-13	21.081
14	25-Sep-13	22.192
15	25-Sep-13	23.200
16	25-Sep-13	21.700
17	07-May-14	13.814
18	07-May-14	15.200
19	06-Aug-15	21.592
20	06-Aug-15	20.400
21		
22		
23		
24		
25		
Coefficient of Variation:		0.13
Mann-Kendall Statistic (S):		-43
Confidence Factor:		91.3%
Concentration Trend:		Prob. Decreasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

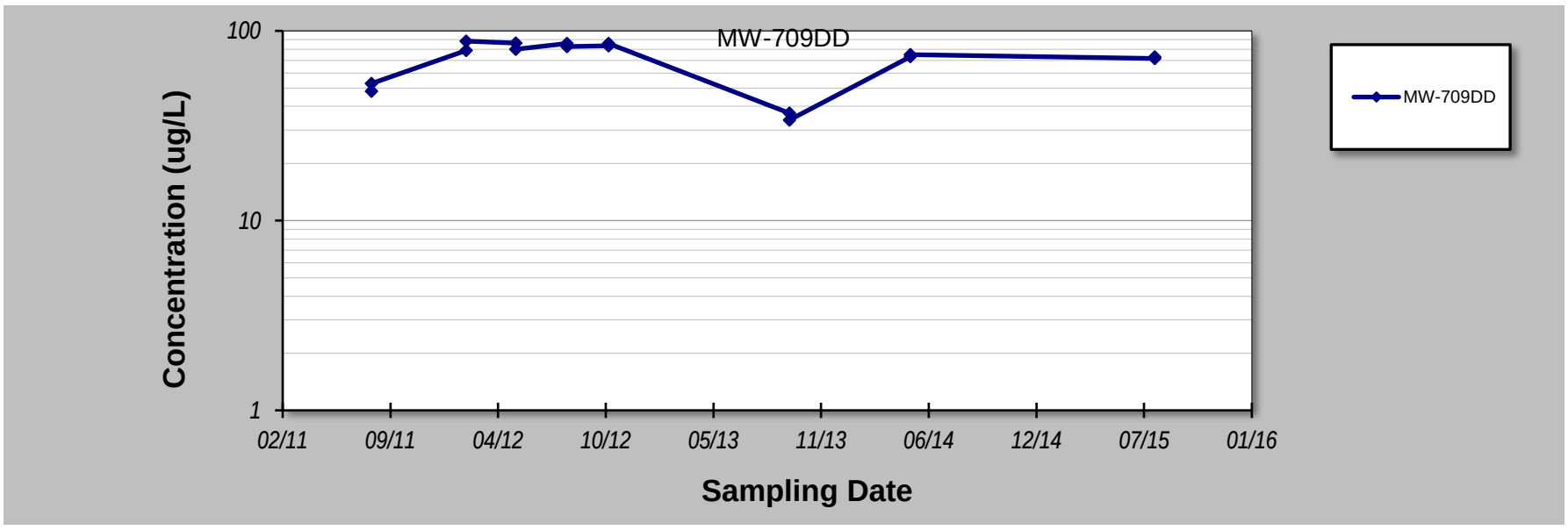
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-709DD**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	10-Aug-11	48.048
2	10-Aug-11	52.800
3	02-Feb-12	78.979
4	02-Feb-12	88.300
5	04-May-12	86.186
6	04-May-12	80.000
7	07-Aug-12	85.886
8	07-Aug-12	82.700
9	23-Oct-12	83.483
10	23-Oct-12	85.900
11	24-Sep-13	36.937
12	24-Sep-13	33.900
13	07-May-14	73.273
14	07-May-14	74.800
15	04-Aug-15	71.471
16	04-Aug-15	72.700
17		
18		
19		
20		
Coefficient of Variation:		0.25
Mann-Kendall Statistic (S):		-20
Confidence Factor:		80.1%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

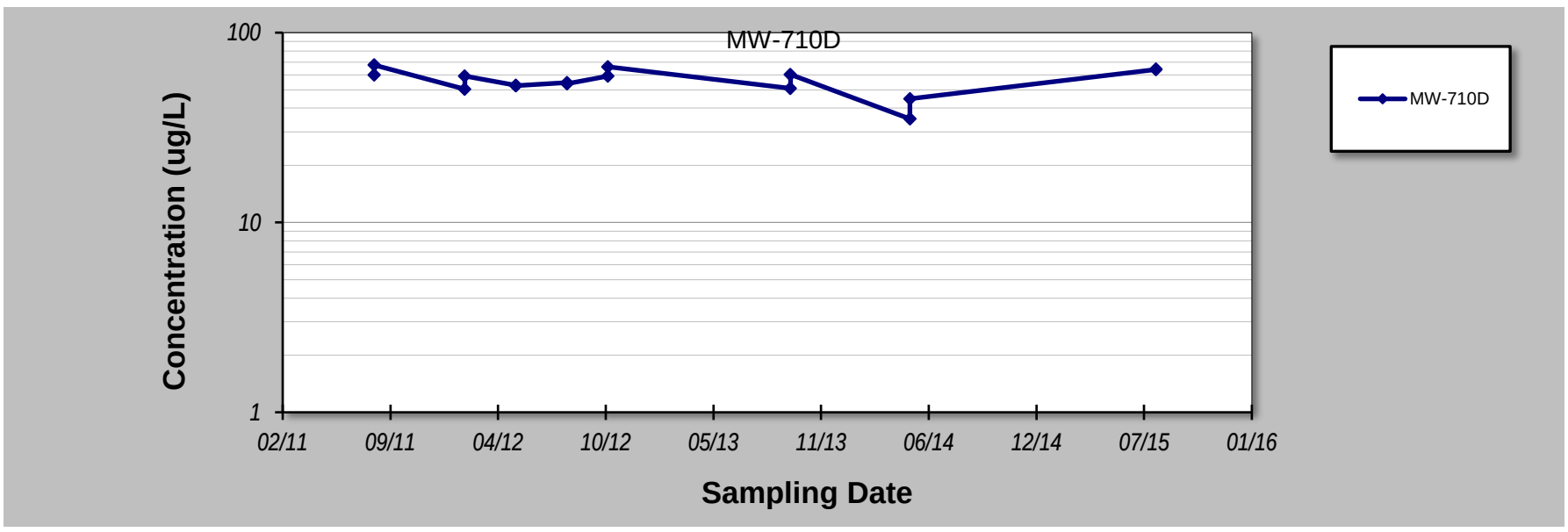
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-710D**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	15-Aug-11	59.76
2	15-Aug-11	67.50
3	30-Jan-12	50.45
4	30-Jan-12	59.10
5	04-May-12	52.85
6	04-May-12	52.50
7	07-Aug-12	54.65
8	07-Aug-12	53.80
9	22-Oct-12	59.16
10	22-Oct-12	66.00
11	26-Sep-13	50.75
12	26-Sep-13	60.30
13	06-May-14	35.14
14	06-May-14	44.80
15	06-Aug-15	63.96
16	06-Aug-15	64.20
17		
18		
19		
20		
Coefficient of Variation:		0.15
Mann-Kendall Statistic (S):		0
Confidence Factor:		48.2%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

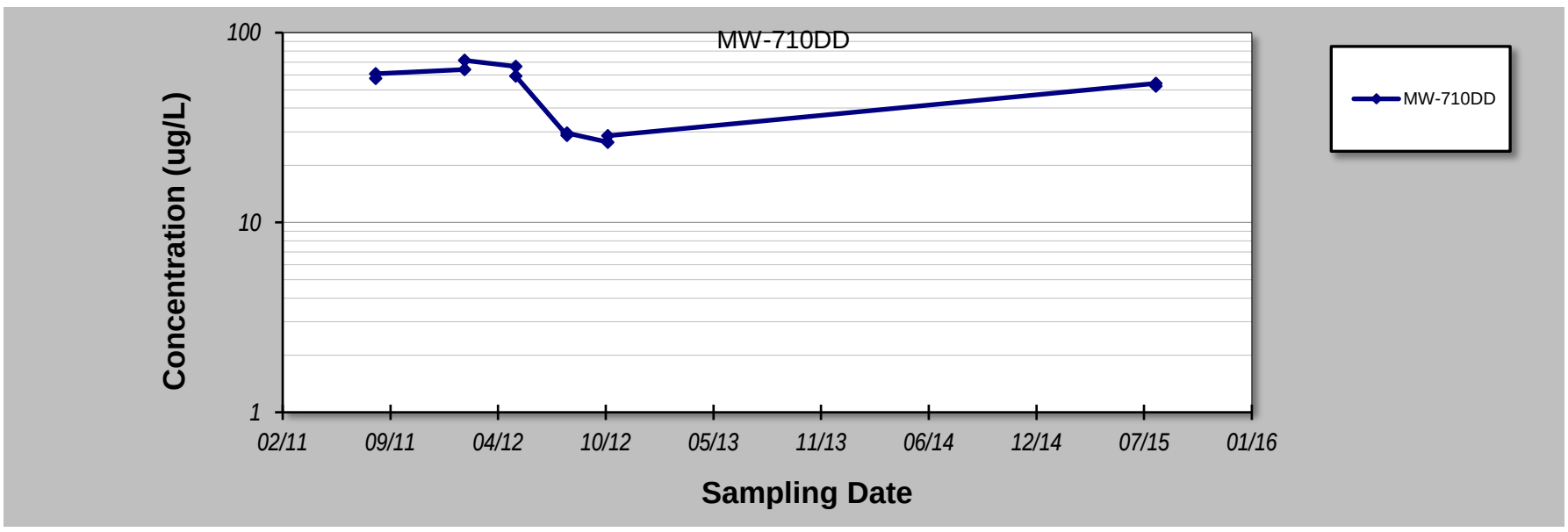
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-710DD**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	18-Aug-11	57.357
2	18-Aug-11	60.800
3	30-Jan-12	63.964
4	30-Jan-12	71.400
5	04-May-12	66.366
6	04-May-12	59.100
7	07-Aug-12	28.829
8	07-Aug-12	29.600
9	22-Oct-12	26.486
10	22-Oct-12	28.600
11	06-Aug-15	54.054
12	06-Aug-15	52.300
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		**0.33**
Mann-Kendall Statistic (S):		**-26**
Confidence Factor:		**95.7%**
Concentration Trend:		Decreasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

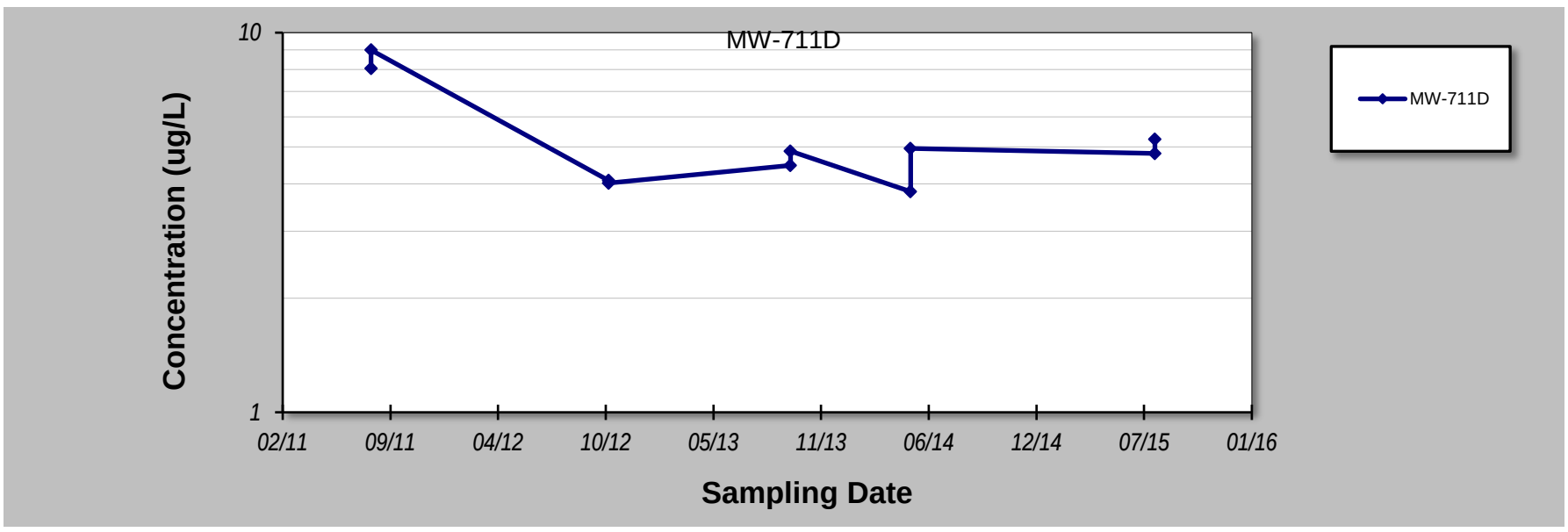
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-711D**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	09-Aug-11	8.048
2	09-Aug-11	9.000
3	23-Oct-12	4.084
4	23-Oct-12	4.020
5	26-Sep-13	4.474
6	26-Sep-13	4.880
7	07-May-14	3.814
8	07-May-14	4.950
9	04-Aug-15	4.805
10	04-Aug-15	5.240
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.33
Mann-Kendall Statistic (S):		-1
Confidence Factor:		50.0%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

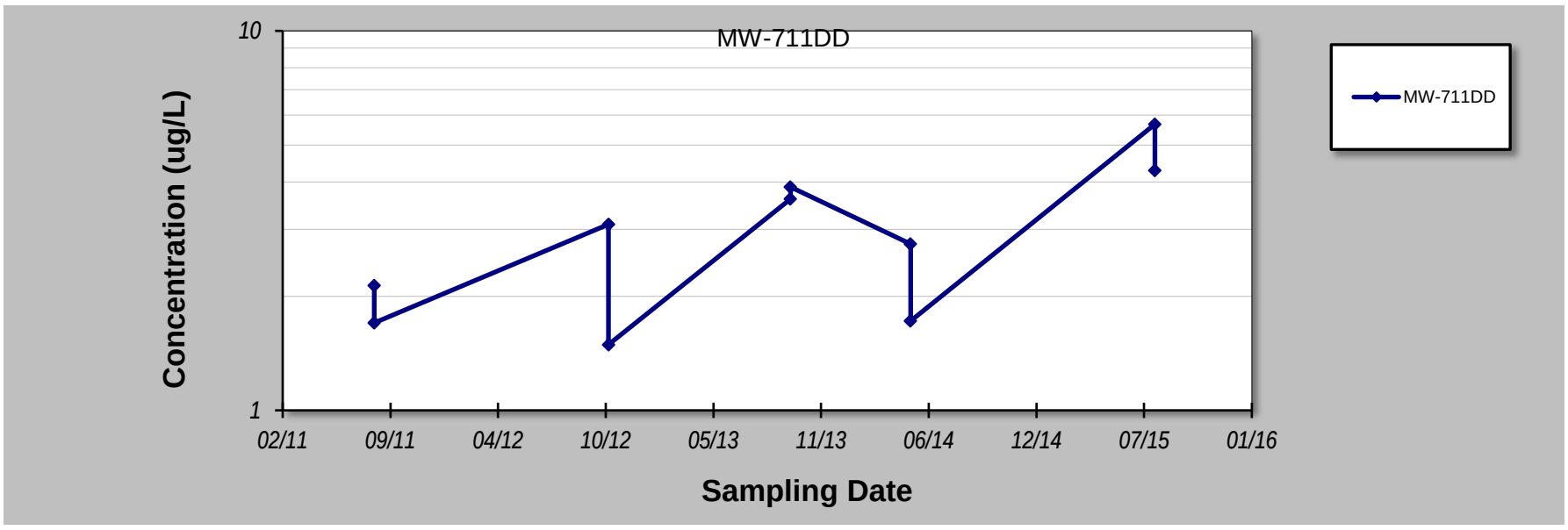
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-711DD**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	15-Aug-11	2.132
2	15-Aug-11	1.700
3	23-Oct-12	3.093
4	23-Oct-12	1.490
5	26-Sep-13	3.604
6	26-Sep-13	3.880
7	07-May-14	2.742
8	07-May-14	1.720
9	04-Aug-15	5.676
10	04-Aug-15	4.290
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.44
Mann-Kendall Statistic (S):		19
Confidence Factor:		94.6%
Concentration Trend:		Prob. Increasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

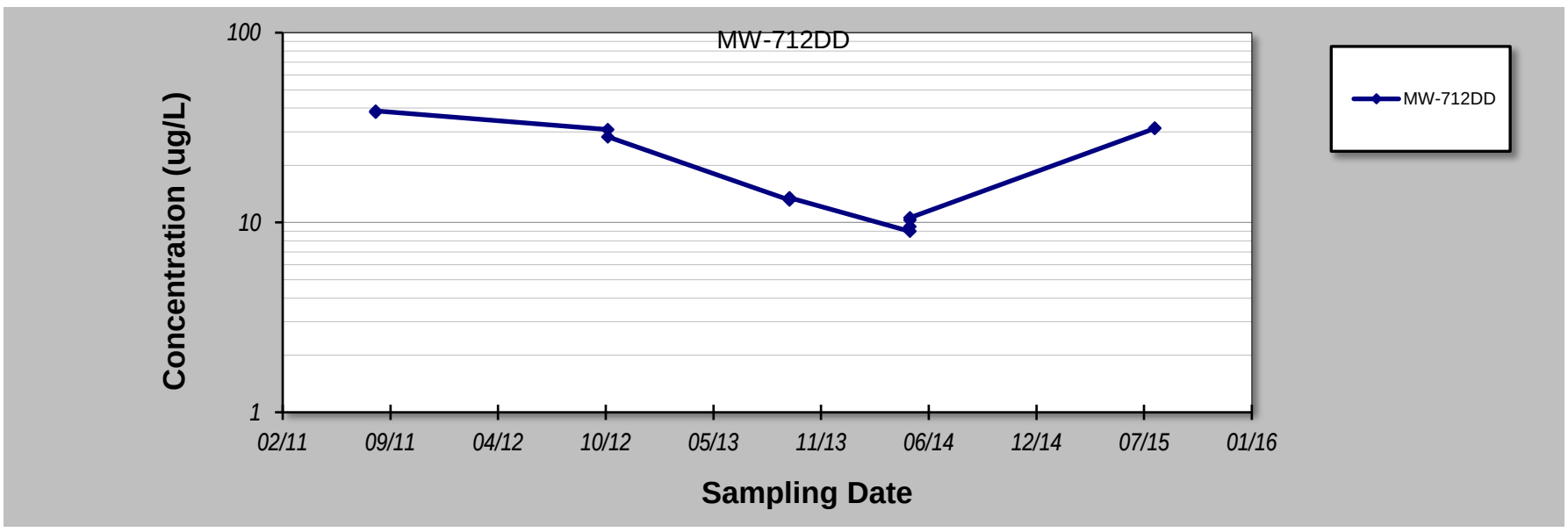
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-712DD**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	18-Aug-11	38.138
2	18-Aug-11	38.700
3	22-Oct-12	30.931
4	22-Oct-12	28.300
5	24-Sep-13	13.123
6	24-Sep-13	13.500
7	06-May-14	8.979
8	06-May-14	9.520
9	06-May-14	10.300
10	06-May-14	10.600
11	04-Aug-15	31.231
12	04-Aug-15	31.400
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.54
Mann-Kendall Statistic (S):		-16
Confidence Factor:		84.5%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

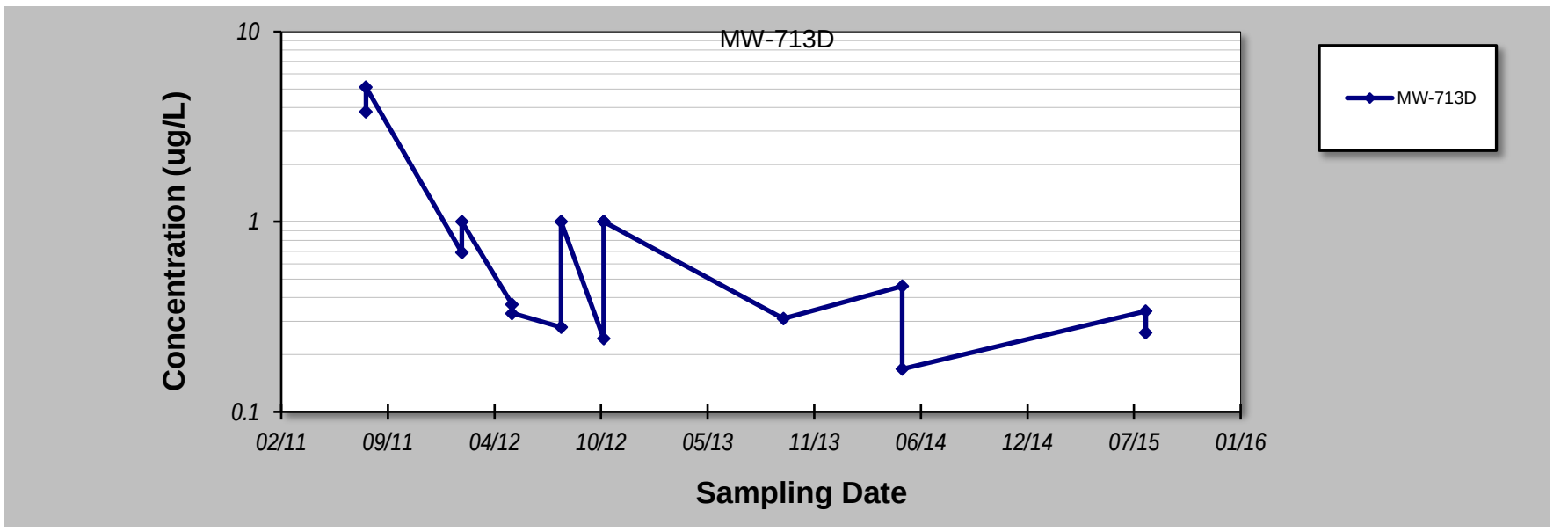
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **3-Jan-17**
Facility Name: **Guterl Site**
Conducted By: **WTF - NL**

Job ID: **N/A**
Constituent: **Total U**
Concentration Units: **ug/L**

Sampling Point ID: **MW-713D**

Sampling Event	Sampling Date	TOTAL U CONCENTRATION (ug/L)
1	04-Aug-11	3.784
2	04-Aug-11	5.100
3	31-Jan-12	0.691
4	31-Jan-12	1.000
5	04-May-12	0.366
6	04-May-12	0.330
7	04-Aug-12	0.279
8	04-Aug-12	1.000
9	23-Oct-12	0.243
10	23-Oct-12	1.000
11	23-Oct-12	1.000
12	25-Sep-13	-0.219
13	25-Sep-13	0.309
14	06-May-14	0.459
15	06-May-14	0.168
16	06-Aug-15	0.339
17	06-Aug-15	0.261
18		
19		
20		
Coefficient of Variation:		1.46
Mann-Kendall Statistic (S):		-60
Confidence Factor:		99.3%
Concentration Trend:		Decreasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

DISCLAIMER: The GSI Mann-Kendall Toolkit is available "as is". Considerable care has been exercised in preparing this software product; however, no party, including without limitation GSI Environmental Inc., makes any representation or warranty regarding the accuracy, correctness, or completeness of the information contained herein, and no such party shall be liable for any direct, indirect, consequential, incidental or other damages resulting from the use of this product or the information contained herein. Information in this publication is subject to change without notice. GSI Environmental Inc., disclaims any responsibility or obligation to update the information contained herein.

GSI Environmental Inc., www.gsi-net.com

Attachment B

In Situ Transducer Data Analysis

ATTACHMENT B

In Situ Groundwater-Quality Sonde and Level-Logger Data Comparison

Water-quality sonde and water-level logger data were graphed against time to assess data trends and relationships. The following techniques was employed and illustrated on the subsequent trend graphs:

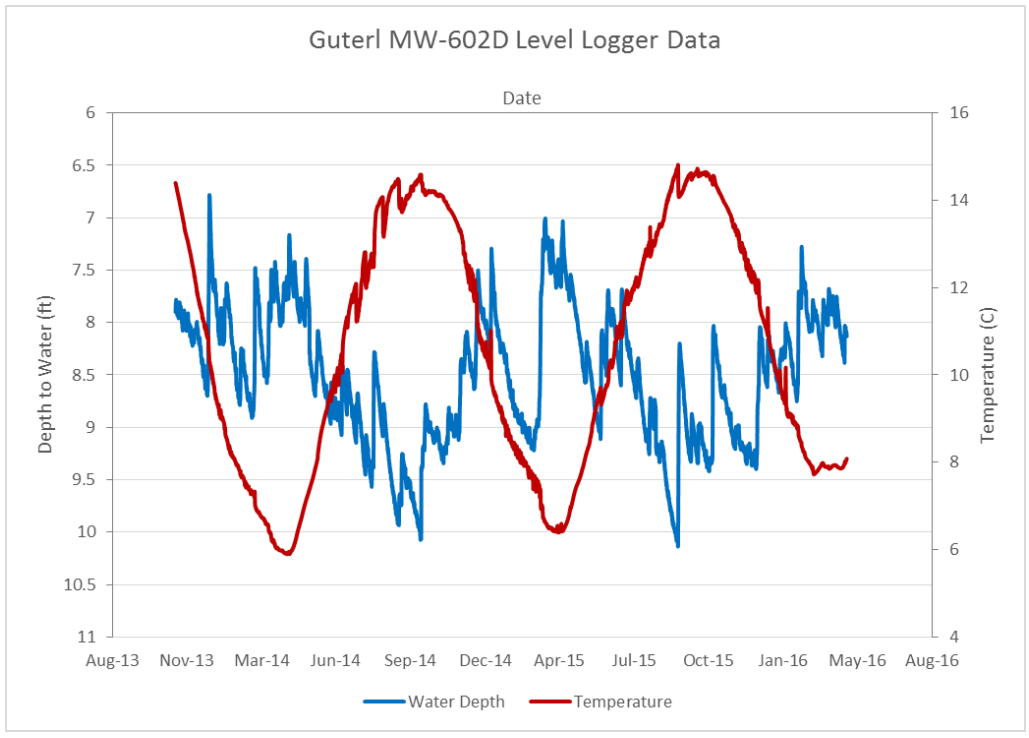
- Groundwater Levels were plotted with Temperature Data
- Specific Conductance was plotted with Temperature and Groundwater Levels
- Groundwater Levels were plotted with Precipitation
- Temperature was plotted for multiple well couplets (shallow and deep groundwater zones) and for wells along a groundwater flow path through the central portion of the site

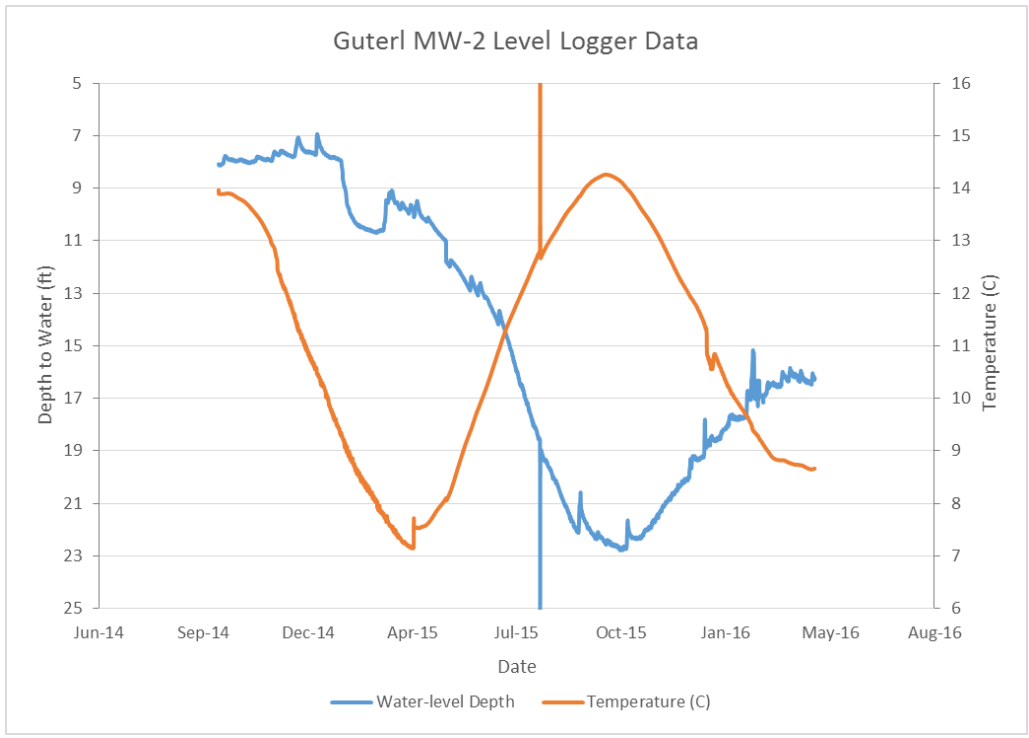
Data relationships and hydrogeologic characteristics indicate the following:

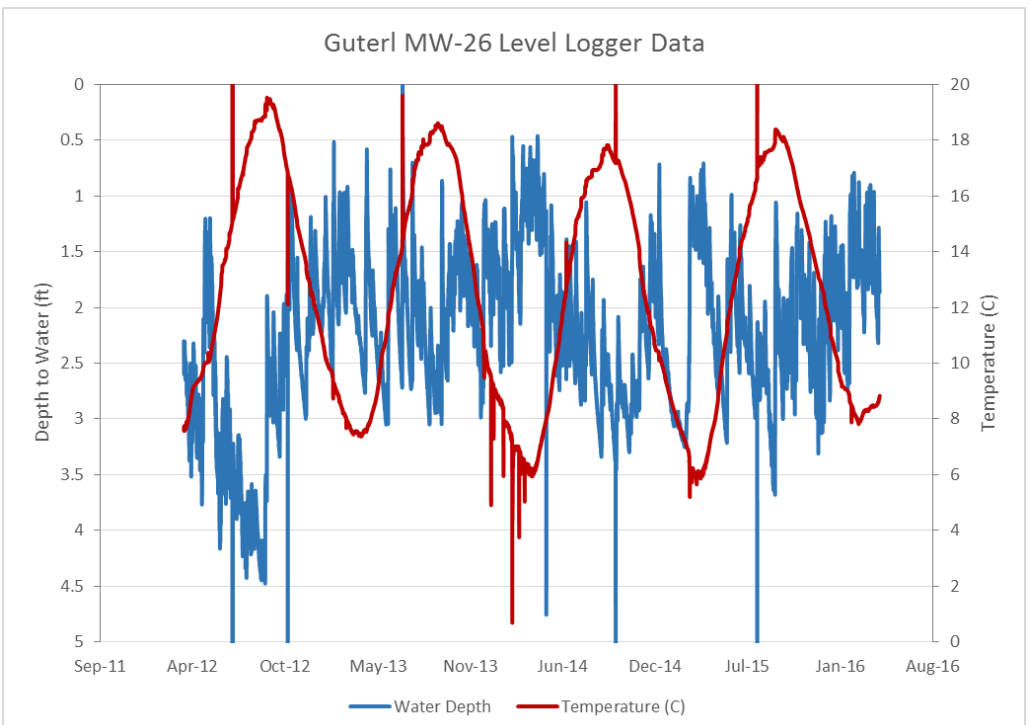
- Groundwater Levels and Temperature:
  - An inverse relationship occurs between water levels and temperature due to seasonal recharge periods when winter temperatures and spring recharge cools the groundwater that later warms during the summer months when the ground absorbs heat and warms available recharge (excess soil moisture).
  - A more subdued inverse to nearly proportional relationship occurs between water levels and temperature due to the lag time that is evident in the temperature variations between the shallow and deep zone.
- Specific Conductance and Groundwater Levels:
  - Specific conductance shows a weak inverse relationship with water levels due to dilution from groundwater recharge (lowers conductance) that also includes dissolved constituents from the leaching of soil minerals (raises conductance and uranium influx) from the thin vadose zone.
  - Specific conductance data were not plotted for the deep zone since the sonde data do not appear characteristic of natural trends, indicating the conductance sensors may have malfunctioned.
- Groundwater Levels and Precipitation:
  - Water-level versus precipitation trends for six wells (four are shallow/deep couplets) indicate a rapid recharge response occurs with precipitation in both zones (shallow and deep), which indicates a very good hydraulic connection between the zones.
- Inter-well Temperature:
  - Temperature data from the shallow zone exhibit a greater range (fluctuation) than the deep zone.
  - Temperature in each zone shows a near uniform variation in range and frequency (i.e., the high land low periods are coincident in the shallow zone).
  - The temperature high and low periods are offset (or lag each other) by approximately three (3) months in each zone, which indicates the vertical travel time between the two zones for seasonal temperature pulses and logically uranium migration. Well couplets closer to the canal show a shorter lag (1-2 months) likely due to the greater vertical connections derived from gradient changes near the canal and rock disturbance during Erie Canal construction (e.g., blasting may have enhanced natural fracturing).
  - The dampened response (data range) in the deep zone indicates both the attenuation of the temperatures by the host dolostone (i.e., the heat capacity of the bedrock lessens the temperature range) and a limited vertical migration of the shallow-zone plume.

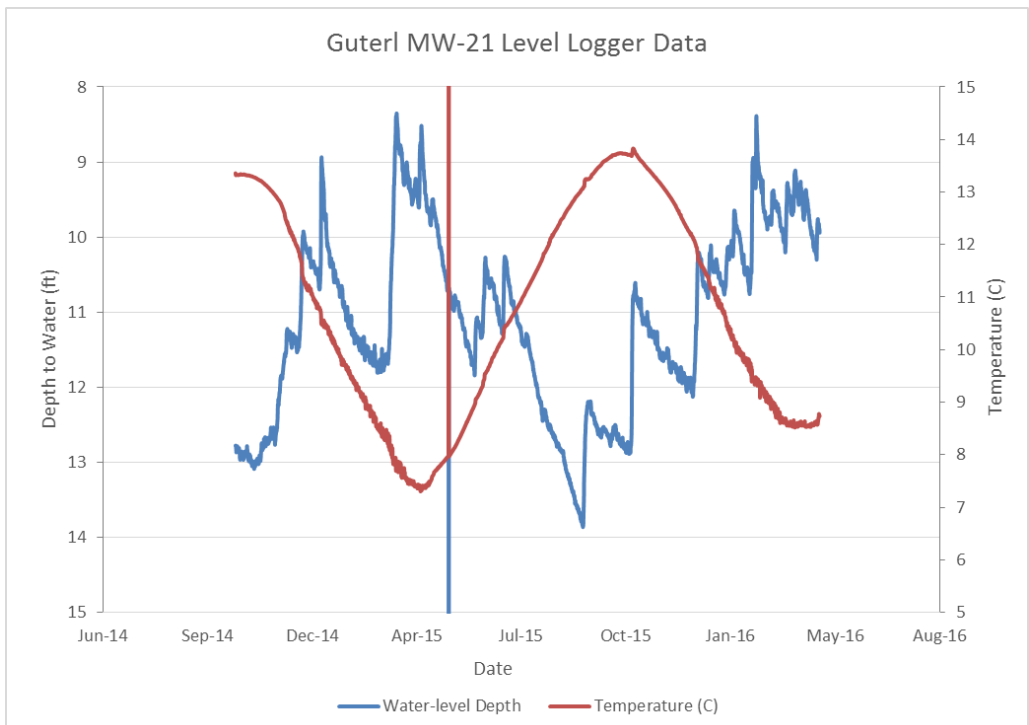
Conclusion

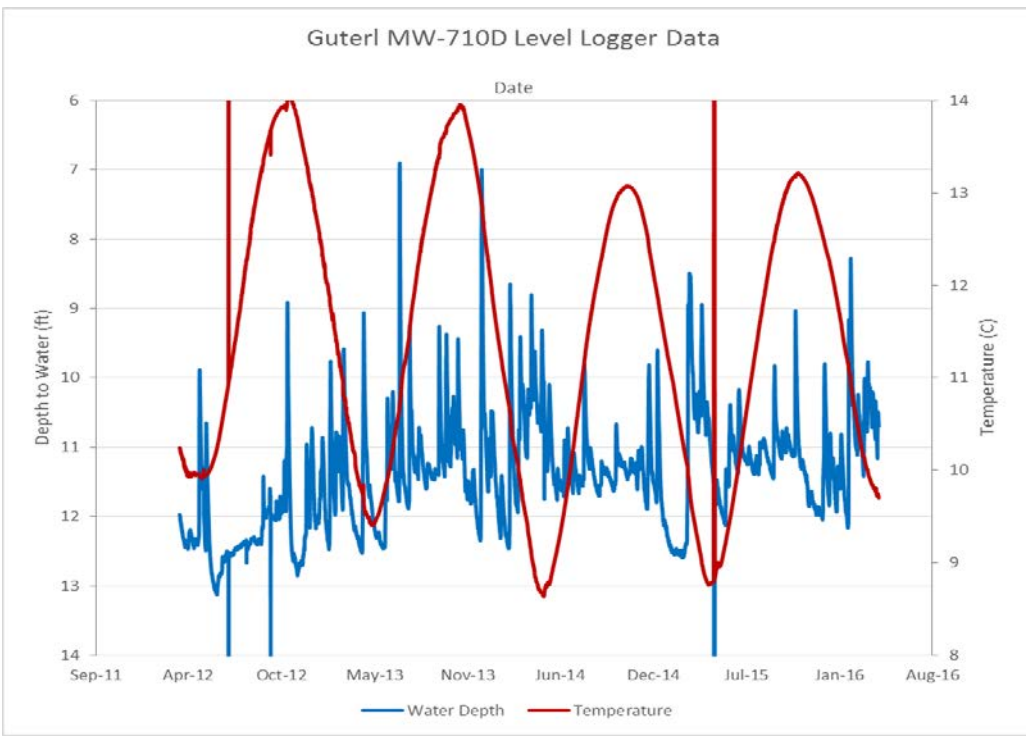
The water-quality sonde and level-logger data re-inforce the conceptual model of uranium transport from soils by illustrating that soil-based minerals (and collocated contaminants) transfer to the groundwater via seasonal recharge, as evident in specific conductance, temperature, water-level, and precipitation data. The vertical interconnection of the shallow and deeps zones appears to have a three-month lag time as evidenced by temperature data.

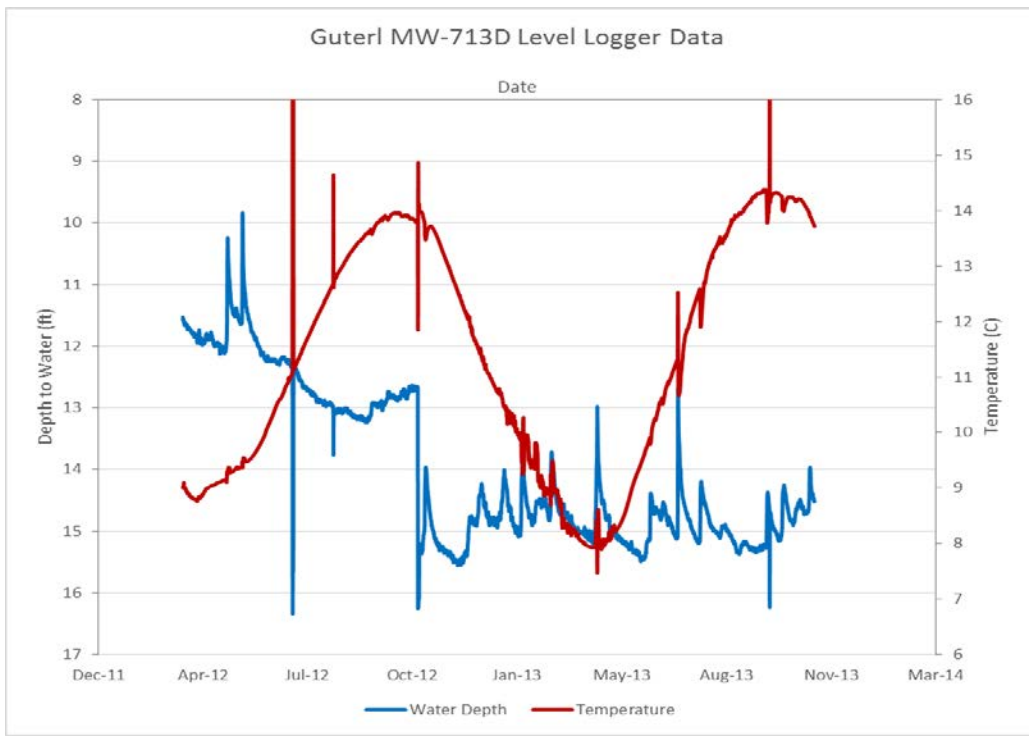


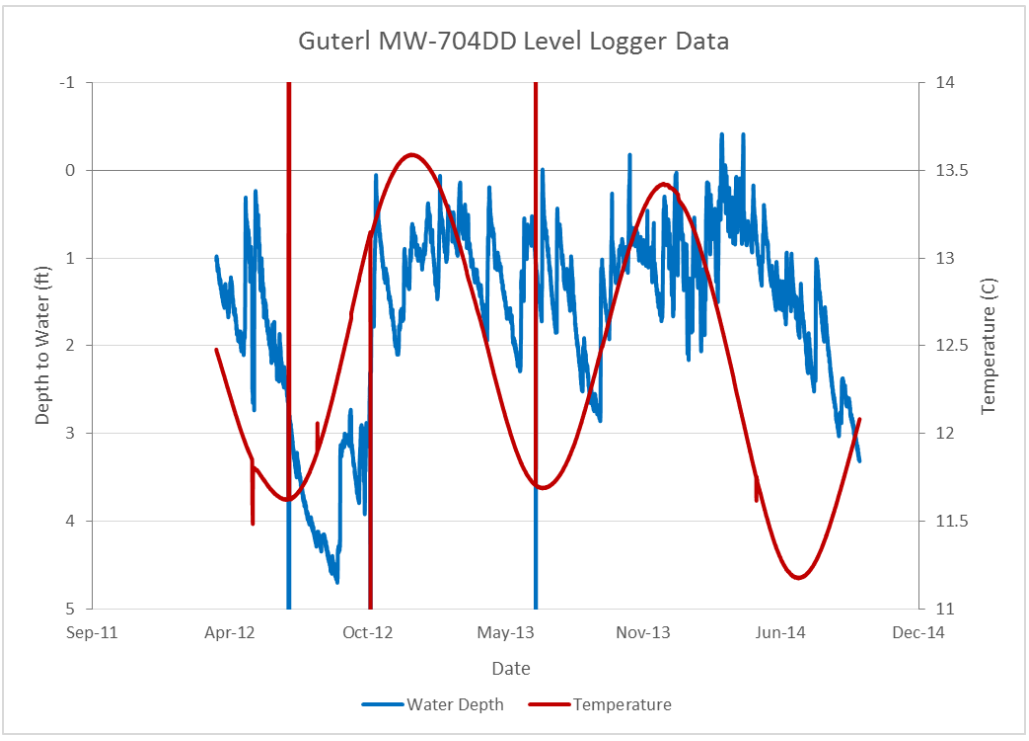


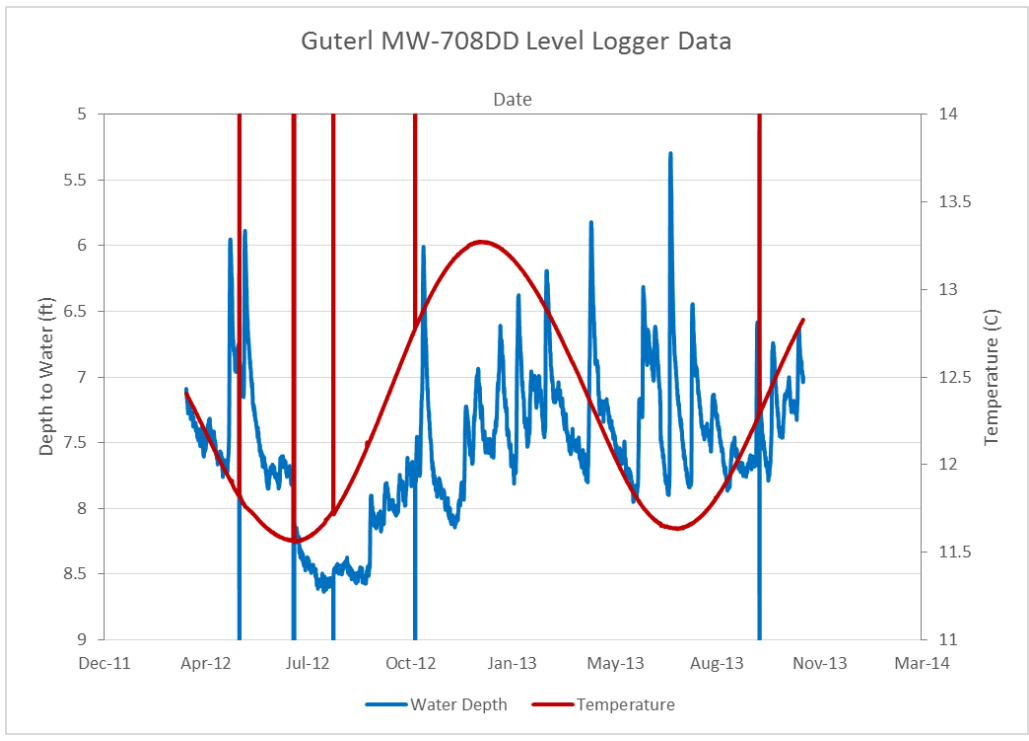




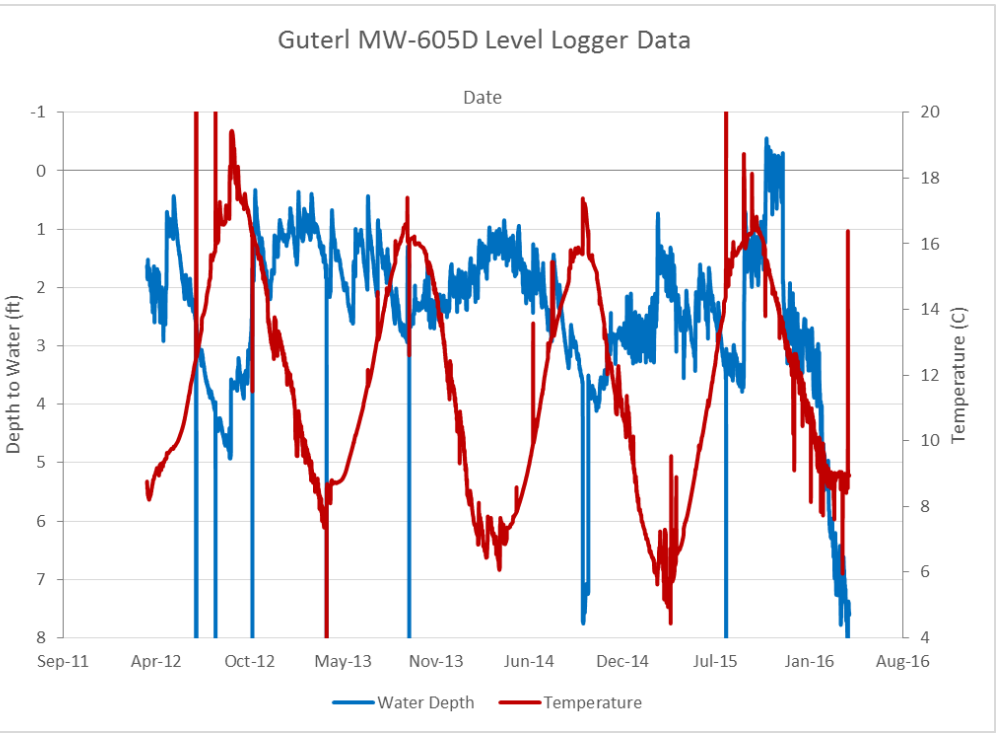


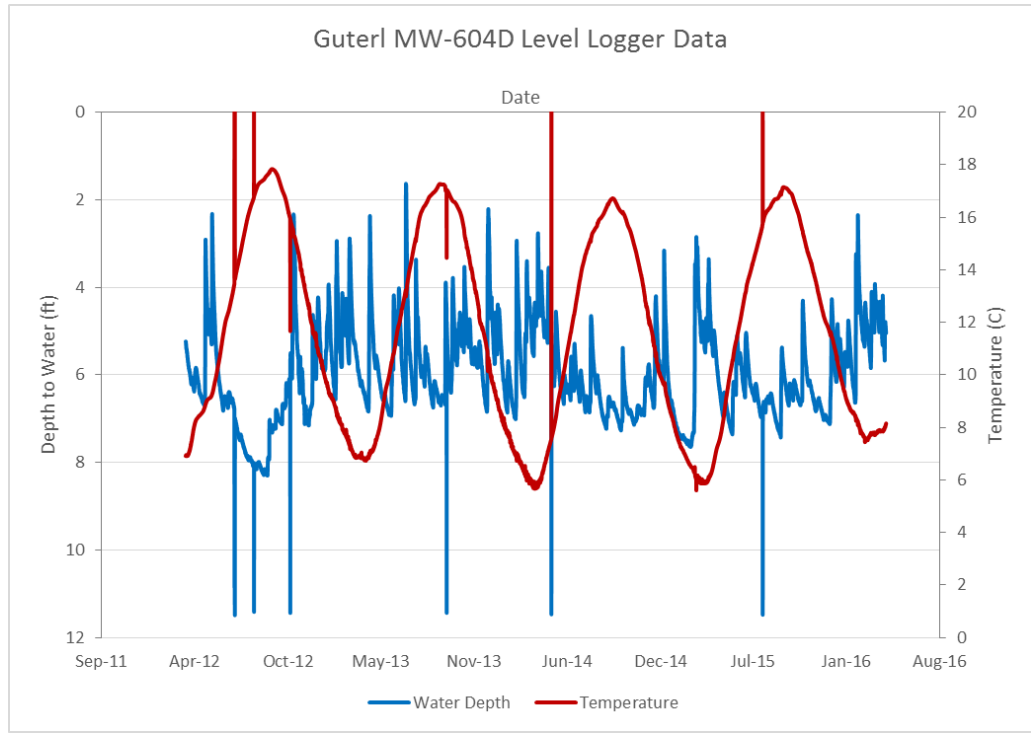


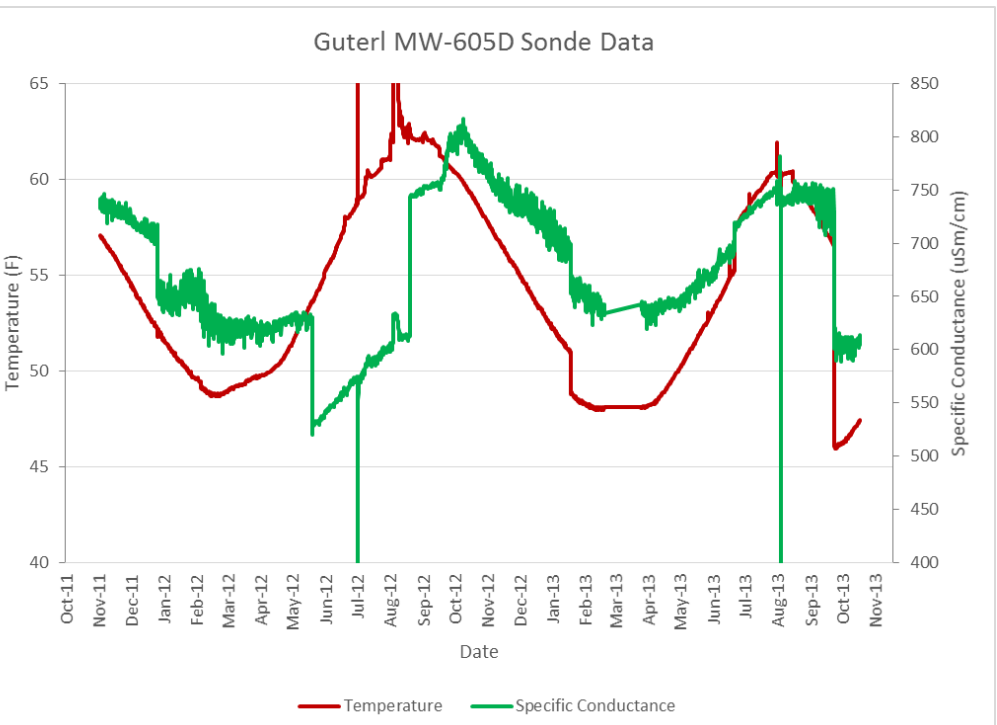


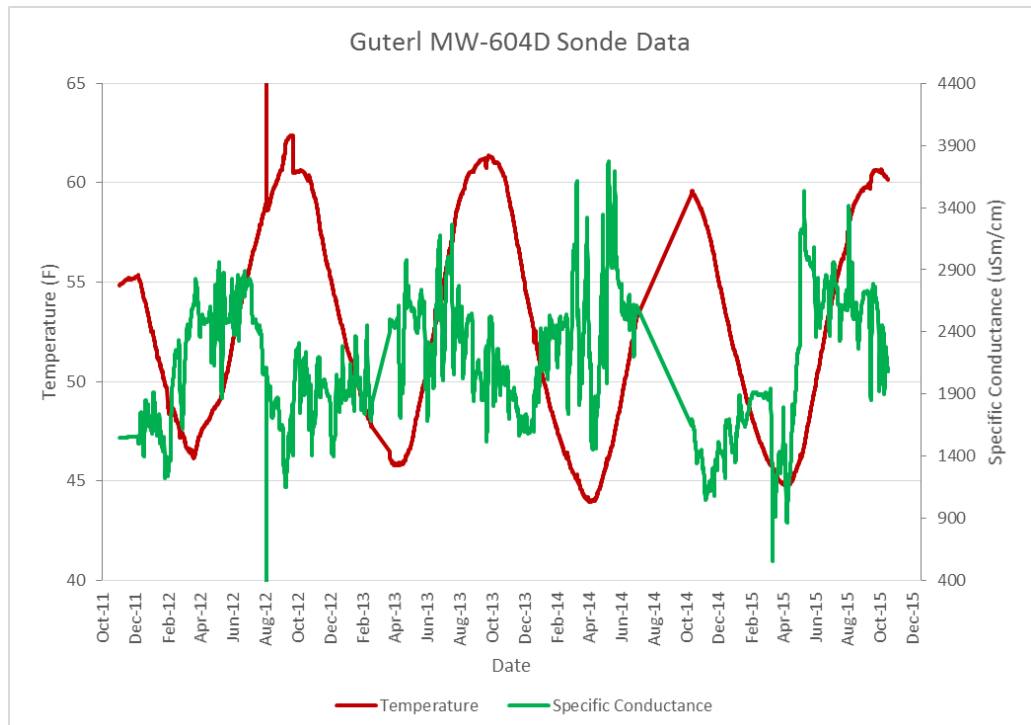


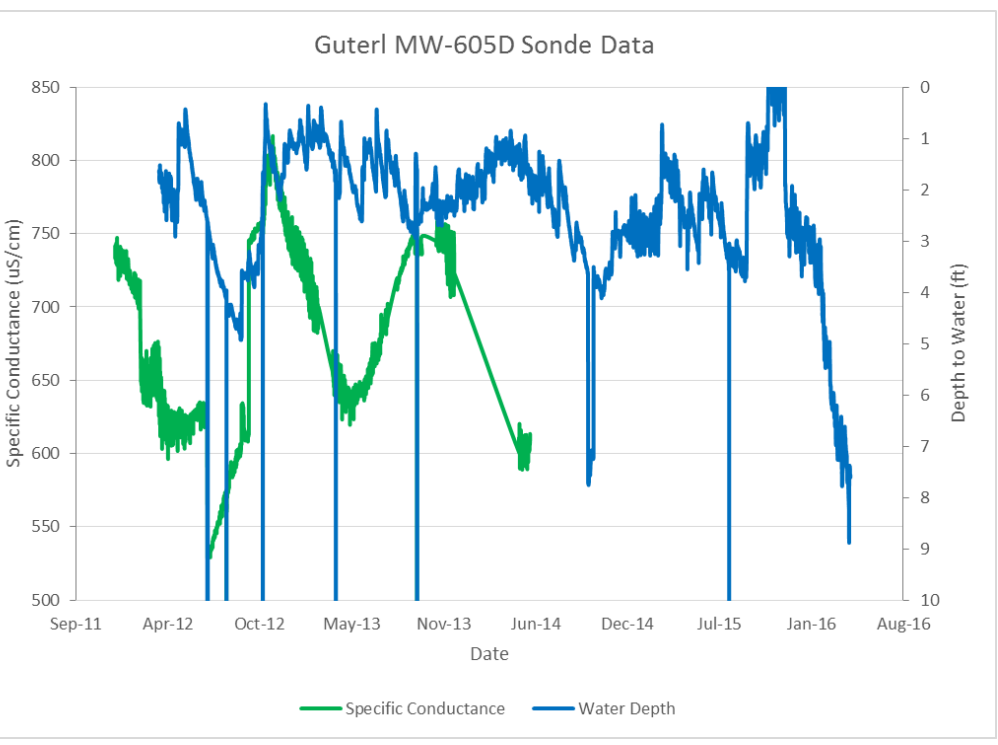
Groundwater Levels and Temperature

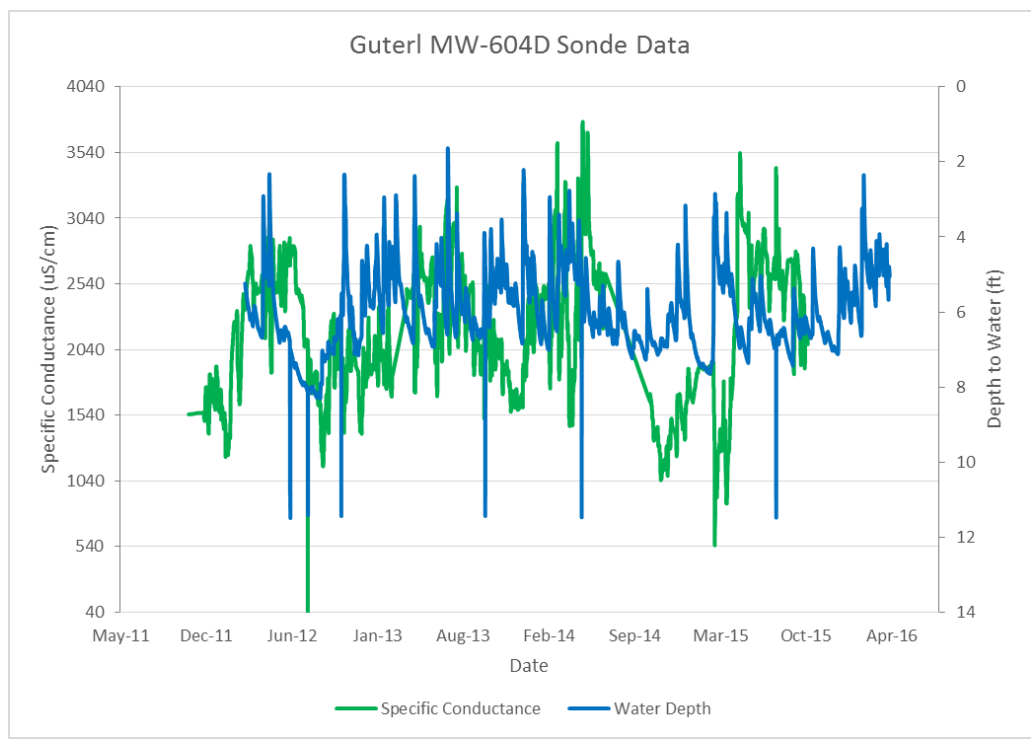


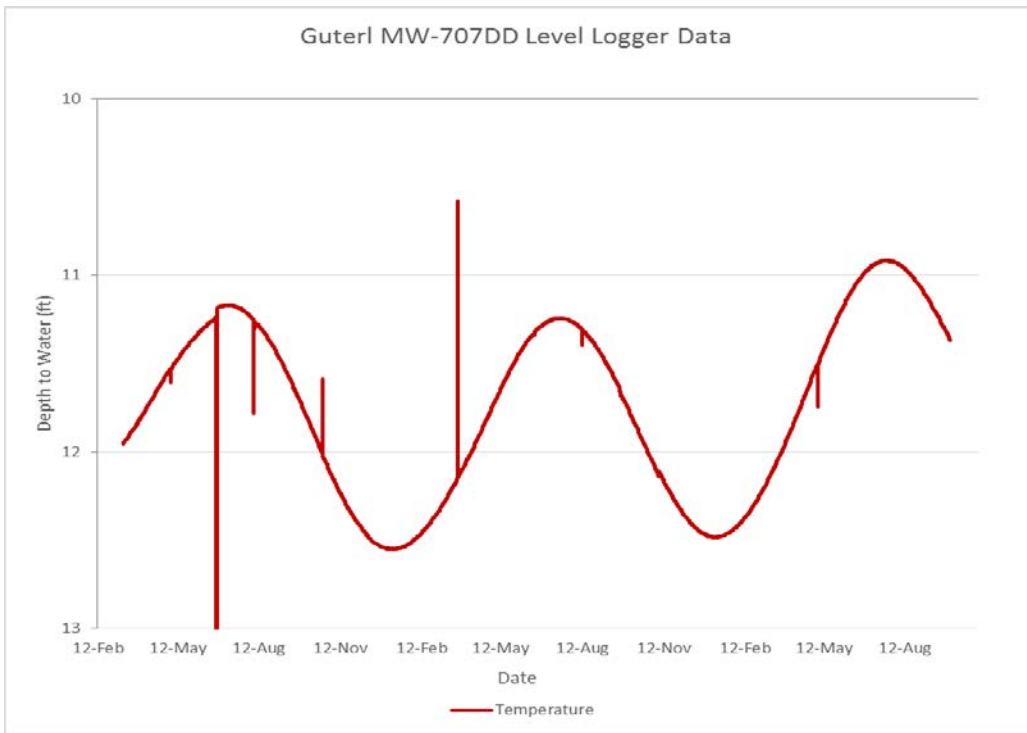


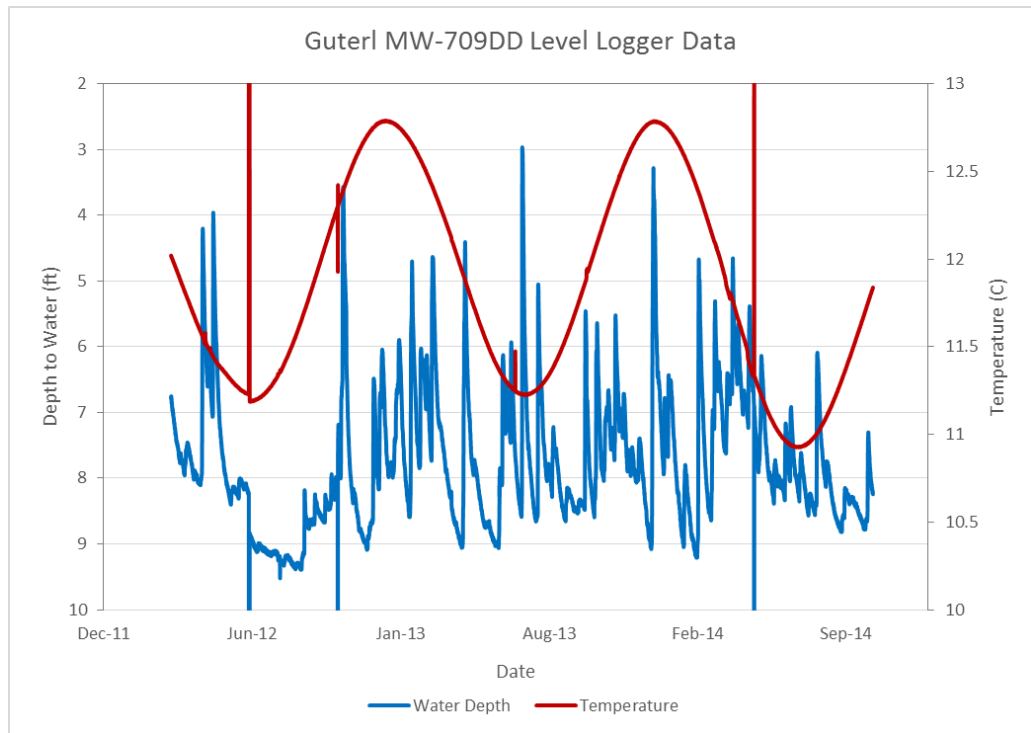




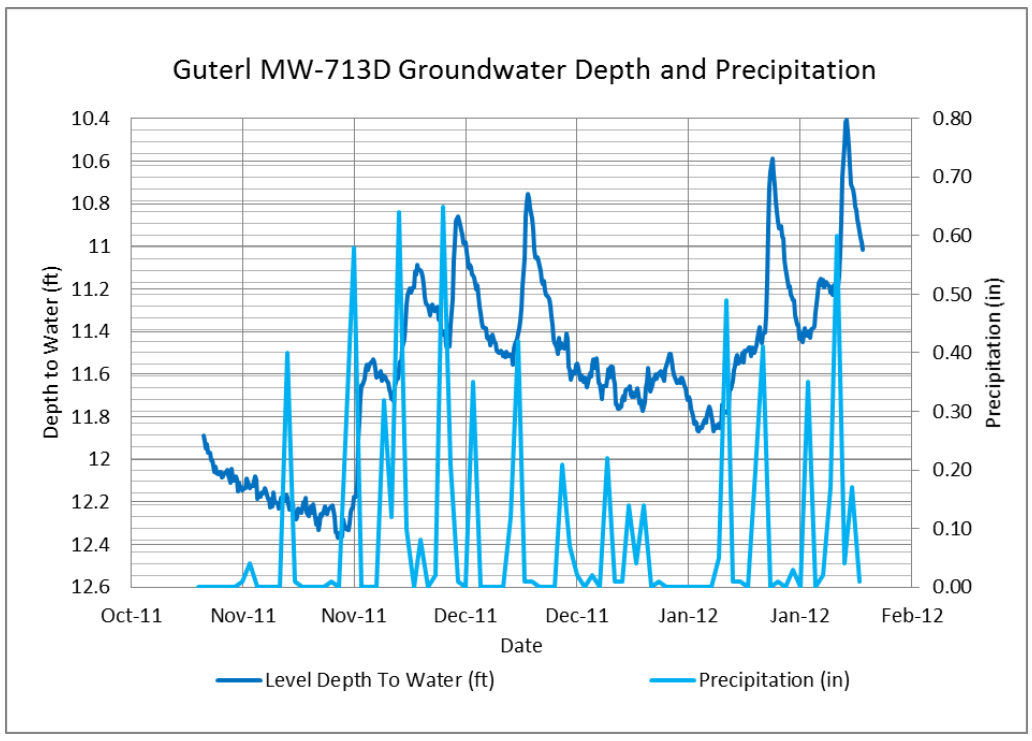


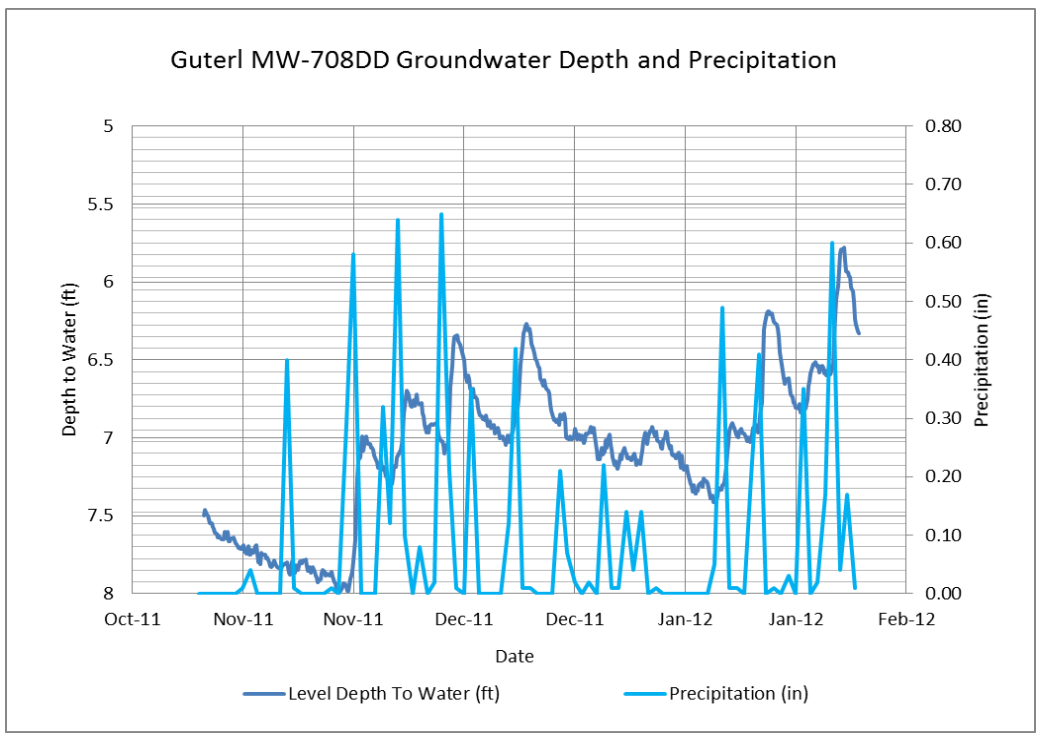


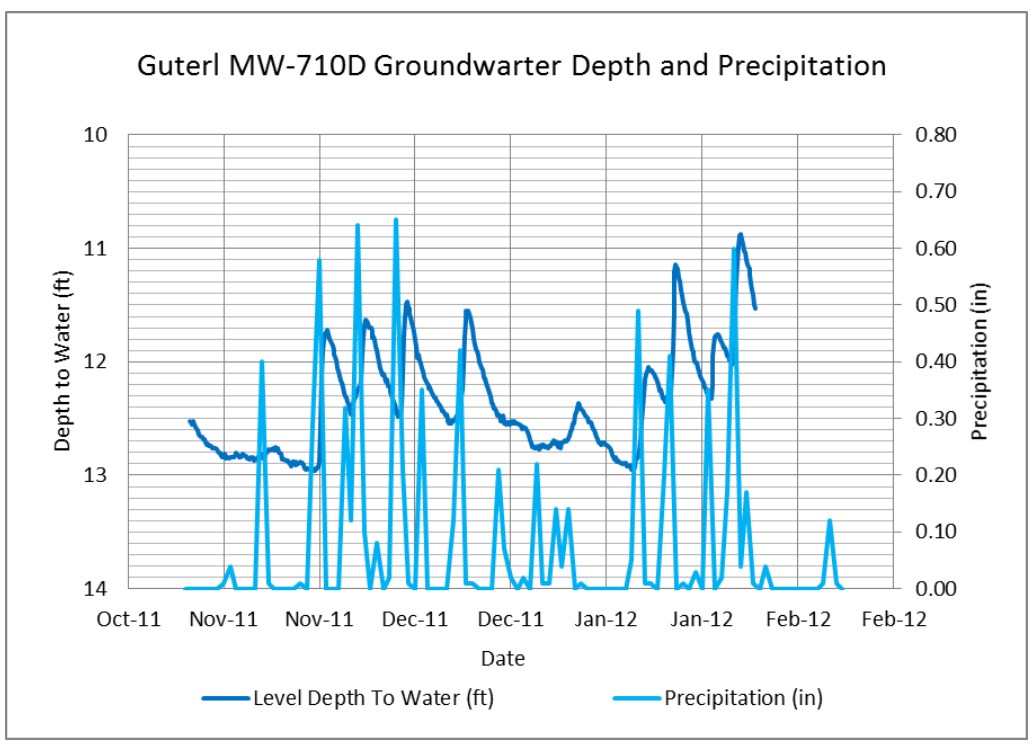


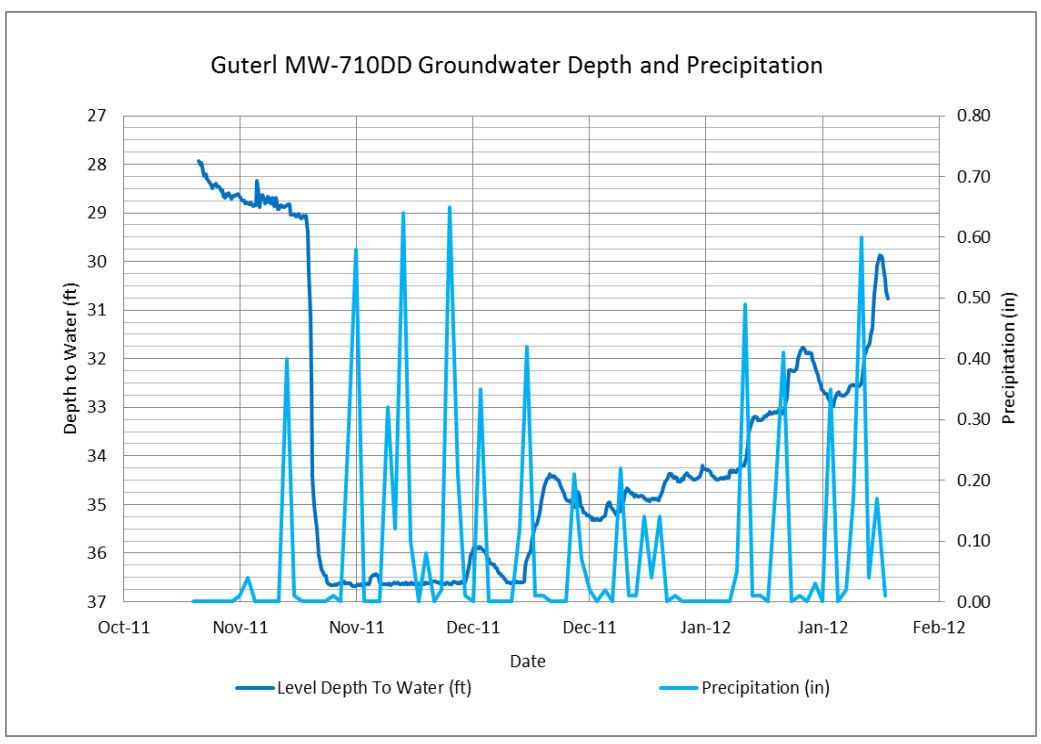


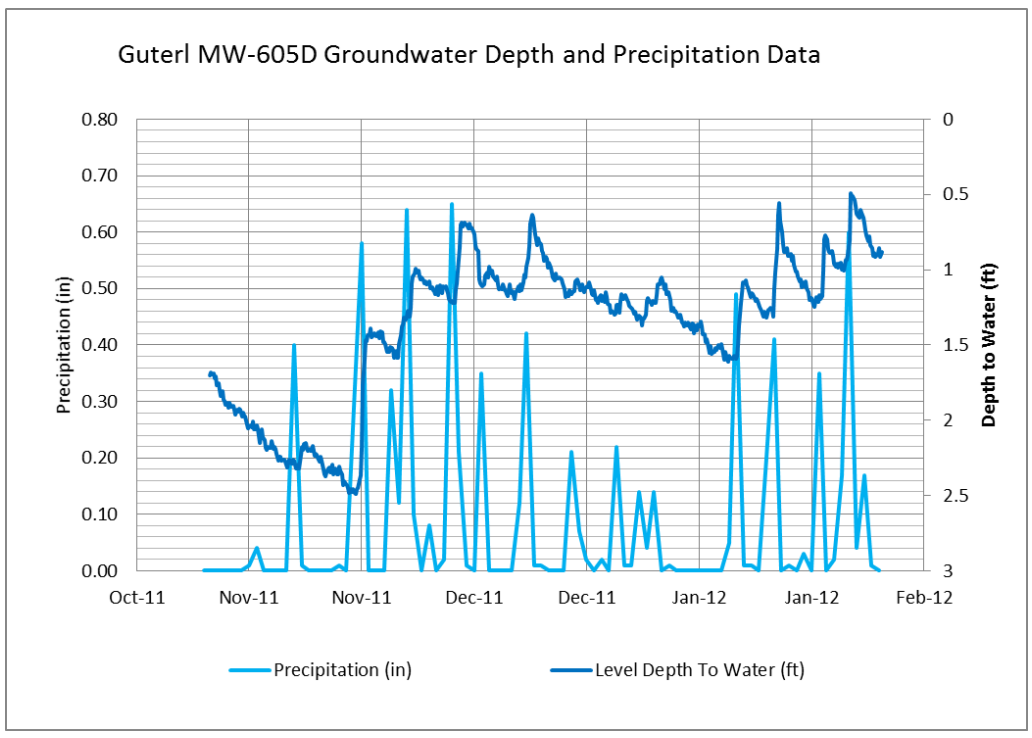
Groundwater Levels, Temperature, Specific Conductance

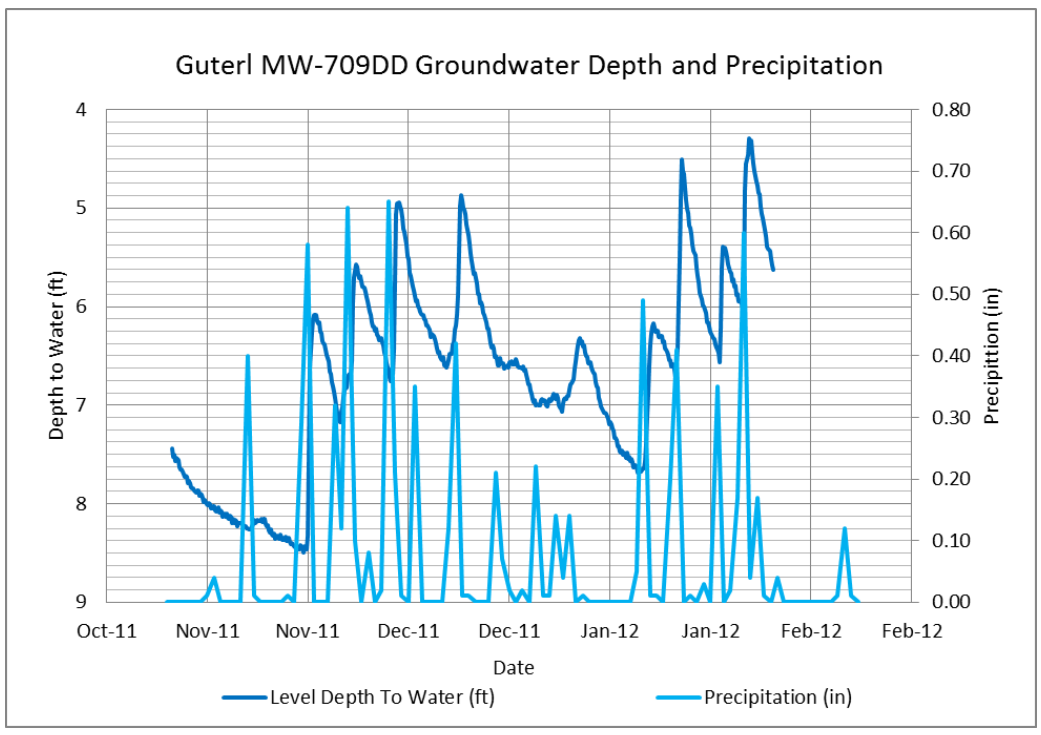




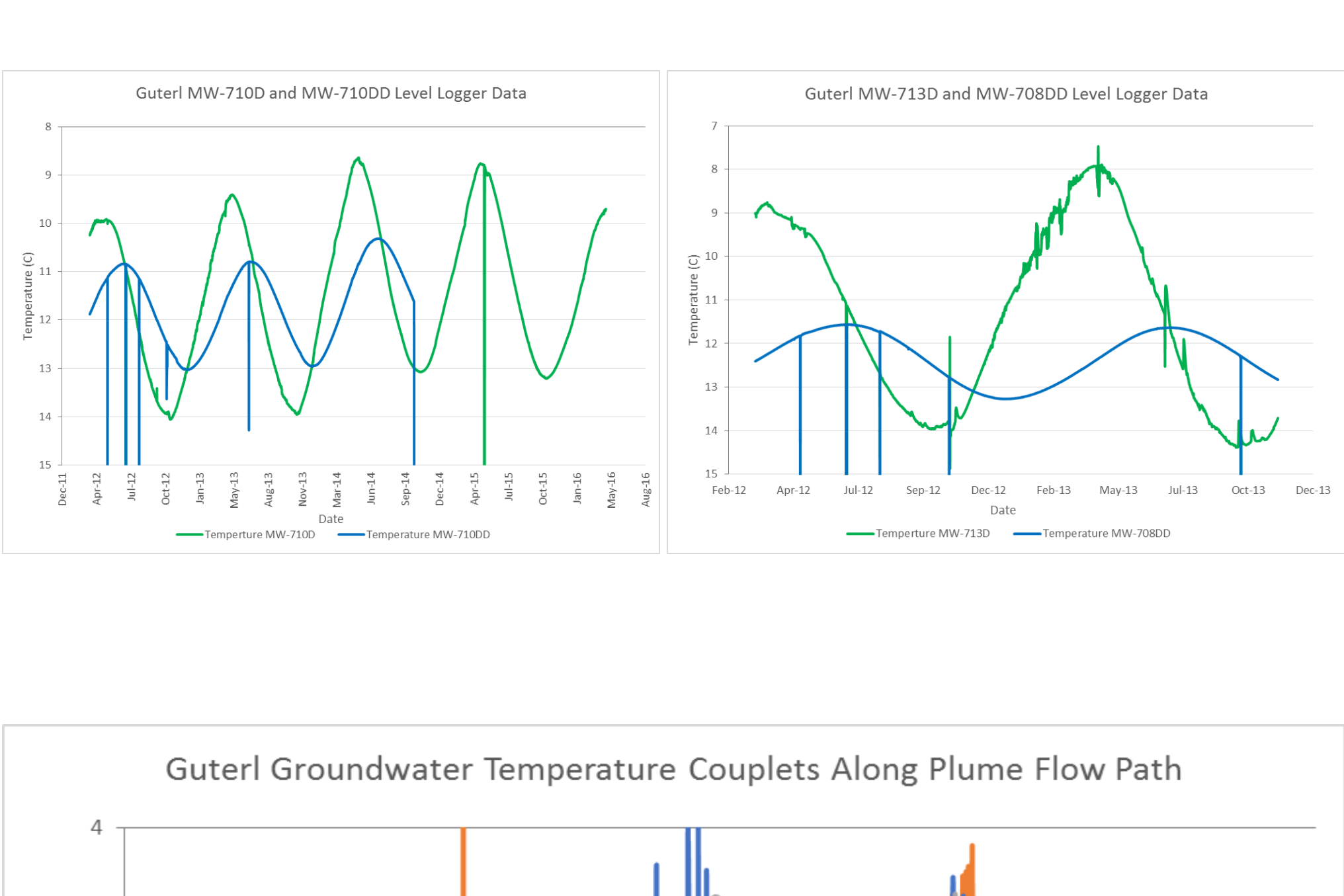








Groundwater Levels and Precipitation Data



Shallow and Deep Zone Temperature Comparison and Gradients

Attachment C

Uranium Flux

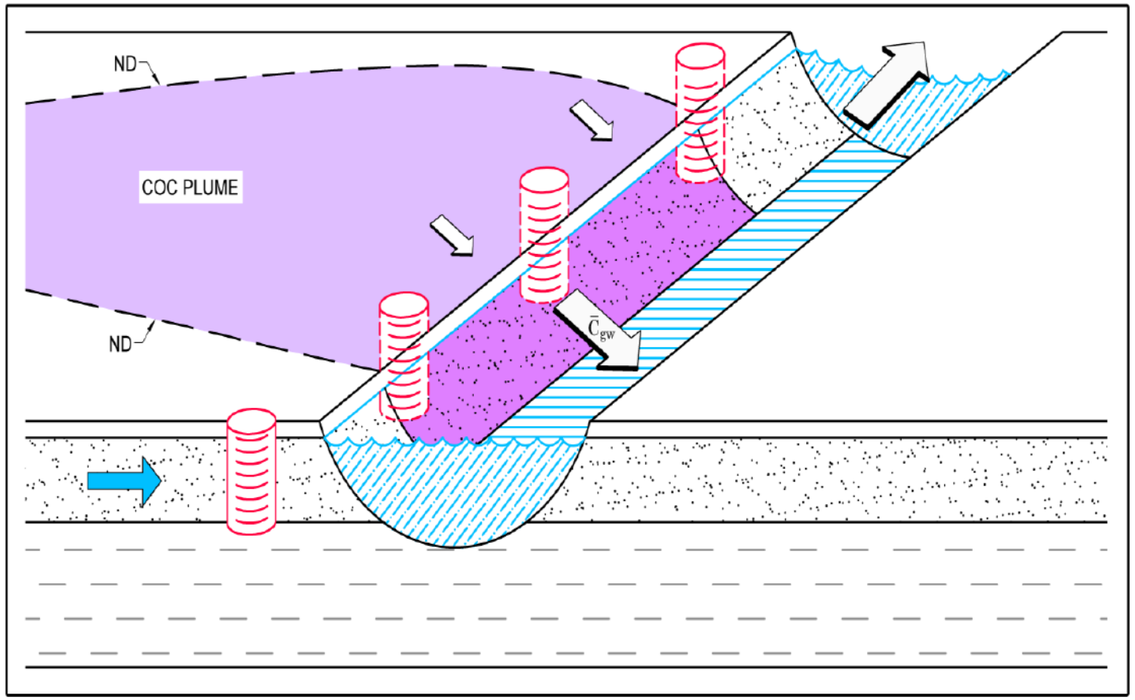
Analysis

ATTACHMENT C

Groundwater Flow and Uranium Flux Calculation for Discharges to the Erie Canal

Method Reference: Texas Commission on Environmental Quality (TCEQ), 2013. Determining Representative Concentrations of Chemicals of Concern for Ecological Receptors. RG-366/TRRP-15eco, November 2013.

For the calculation of ecological protective of surface water when groundwater is the source medium, it is necessary to determine a representative groundwater concentration that is discharging from a plume to a surface-water body or conveyance. The method and calculation referenced above uses a bulk value for groundwater discharge and concentration entering into and mixing with a surface water body. However, groundwater COC concentrations are not uniform along the groundwater–surface water interface and groundwater monitoring well networks along the interface usually are not spatially suitable to determine a representative groundwater concentration by arithmetic averaging. Therefore, a discharge-weighted averaging procedure is recommended for determining a site-specific representative groundwater concentration. The adjacent figure provides a general pathway schematic (TCEQ 2013).



The input data are generally known at Guterl and include the following; the input locations and data are presented on Figures C-1, C-2, and C-3:

Input Parameter	Shallow Zone	Deep Zone
Inter-well Distance (ft)	Location Specific	Location Specific
Well Concentration (mg/L)	Well-specific Uranium	Well-specific Uranium
Hydraulic Conductivity (cm/s)	Well-specific Value or Average	Layer Average
Hydraulic Gradient (ft/ft)	0.007	0.007
Effective Porosity	0.10 (10%)	0.05 (5%)
Saturated Thickness (ft)	17.0 (Layer Average)	38 (Layer Average)

The groundwater gradient and concentrations are derived from 2015 sampling data, which was used since all wells were sampled in 2015.

Groundwater Discharge Concentration

The groundwater discharge rate for the shallow zone is estimated at 0.00532 cubic feet per second (cfs) (2.4 gallons per minute [gpm]), while the deep zone is 0.000362 cfs (0.156 gpm).

The representative groundwater concentrations discharging through the subsurface “picket line of wells” towards the Erie Canal are 50 ug/L in the shallow zone and 29 ug/L in the deep zone. This does not account for additional dispersion and groundwater dilution that may occur as these concentrations approach the Erie Canal seepage area.

These estimates are similar to uranium concentrations observed seeping from the rock face of the canal, where uranium concentrations vary between 0.9 ug/L and 44.9 ug/L, have a mean of 20.3 ug/L, and geometrically average 12.3 ug/L. Consequently, the calculated estimates and observed conditions fall within a similar range, with the observed seepage data reflecting some uranium dilution (or dispersion) as it migrates towards the canal. Considering the stability of the plume (noted in Appendix A), this condition should persist into the near future (possibly 10 years) and thus not grossly change during the project life cycle (i.e., lead up to remedial action).

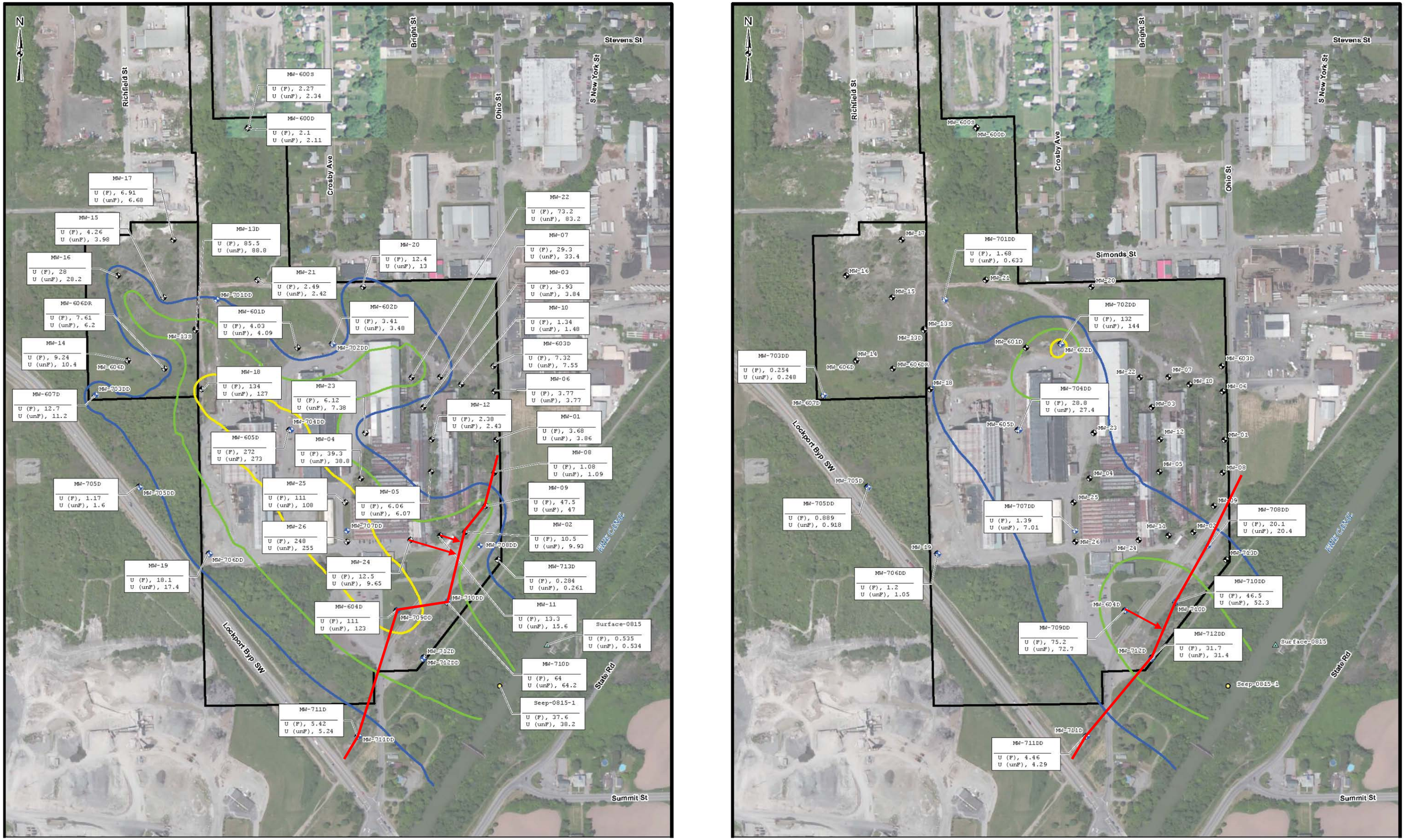
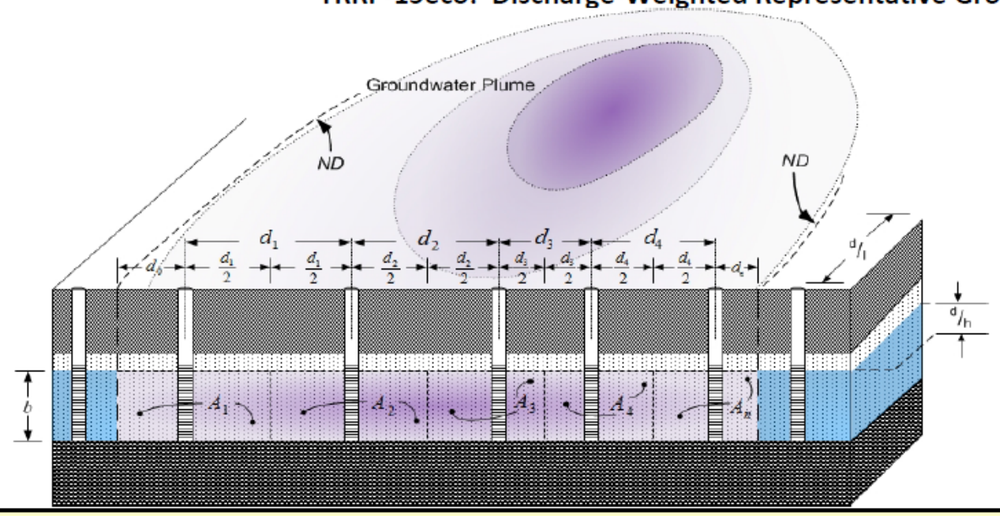


Figure C-1: Groundwater Discharge and Uranium Flux Cross-section Locations in Shallow and Deep Aquifers

TRRP-15eco: Discharge-Weighted Representative Groundwater COC Concentration at Surface Water Interface (v. 1.2 Oct 2012)



INSTRUCTIONS:

1. Calculator solves general condition described in [EQ 12], below
2. Enter data only in uncolored cells
3. BEGIN by entering monitoring well designations starting with "Well 1," and consistent with the order presented in Figure D.2 (Appendix D, TRRP-15eco) and reproduced here - Up to 10 groundwater/surface water interface monitoring wells may be entered
4. Enter distances as shown in Figure D.2 (Appendix D, TRRP-15eco)
5. Enter remaining COC and aquifer parameter data from each respective monitoring well
6. Enter values IN UNITS DENOTED
7. Representative groundwater concentration displayed in blue box at bottom
8. DELETE DATA IN COLUMNS WITH NO WELL DESIGNATION

(table below contains example D.1 information - replace with site well information)

$$\overline{C}_{gw} = \frac{C_{gw_1} K_1 \frac{dh}{dl_1} \eta_{e_1} \left(d_0 + \frac{d_1}{2} \right) b_1 + \sum_{i=2}^{n-1} \left(C_{gw_i} K_i \frac{dh}{dl_i} \eta_{e_i} \left(\frac{d_{i-1} + d_i}{2} \right) b_i \right) + C_{gw_n} K_n \frac{dh}{dl_n} \eta_{e_n} \left(\frac{d_{n-1}}{2} + d_n \right) b_n}{K_1 \frac{dh}{dl_1} \eta_{e_1} \left(d_0 + \frac{d_1}{2} \right) b_1 + \sum_{i=2}^{n-1} \left(K_i \frac{dh}{dl_i} \eta_{e_i} \left(\frac{d_{i-1} + d_i}{2} \right) b_i \right) + K_n \frac{dh}{dl_n} \eta_{e_n} \left(\frac{d_{n-1}}{2} + d_n \right) b_n} \quad \text{[EQ 12]}$$

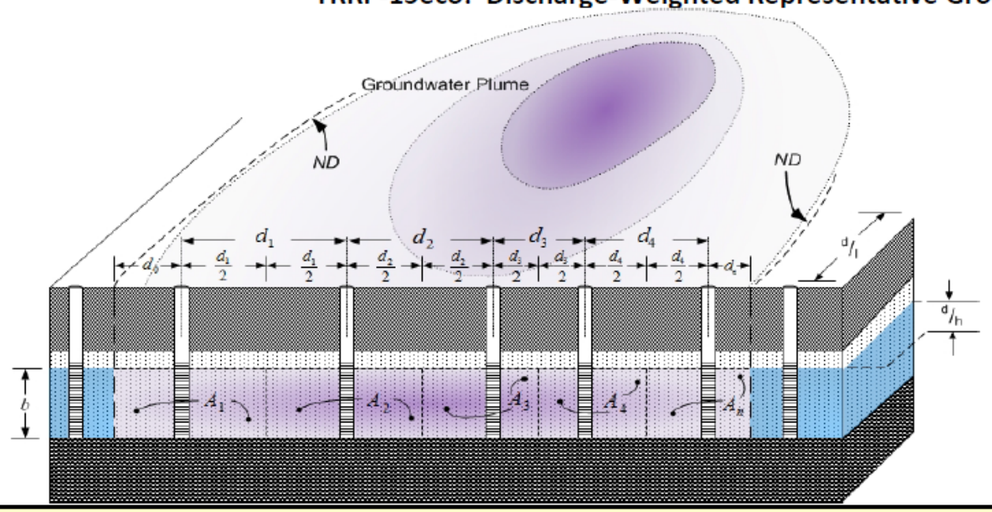
Number of monitoring wells inside GW plume: **n = 8**

Monitoring Wells		Well 1	Well 2	Well 3	Well 4	Well 5	Well 6	Well 7	Well 8	
Enter designation of monitoring wells in plume (from d_0; see Figure D2):		MW-711D	MW-604D	MW-710D	MW-24	MW-11	MW-02	MW-09	MW-08	
Interwell Distances	d0	d1	d2	d3	d4	d5	d6	d7	d8	
Enter interwell and plume-edge distances per Figure D-2 (ft):	100.0 ft	600.0 ft	230.0 ft	195.0 ft	40.0 ft	75.0 ft	150.0 ft	160.0 ft	150.0 ft	
Groundwater Concentrations		C1	C2	C3	C4	C5	C6	C7	C8	
Enter groundwater COC concentration from each well in plume (mg/L):		0.01 mg/L	0.12 mg/L	0.06 mg/L	0.01 mg/L	0.02 mg/L	0.01 mg/L	0.05 mg/L	0.00 mg/L	
Aquifer Parameters		K1	K2	K3	K4	K5	K6	K7	K8	
Hydraulic conductivity (cm/s):		4.91E-03 cm/s	5.47E-03 cm/s	4.91E-03 cm/s	4.75E-03 cm/s	5.00E-03 cm/s	3.65E-03 cm/s	4.18E-02 cm/s	2.63E-03 cm/s	
		dh/dl1	dh/dl2	dh/dl3	dh/dl4	dh/dl5	dh/dl6	dh/dl7	dh/dl8	
Hydraulic gradient (-):		0.0070	0.0070	0.0070	0.0070	0.0070	0.0070	0.0070	0.0070	
		ηe1	ηe2	ηe3	ηe4	ηe5	ηe6	ηe7	ηe8	
Effective porosity (-):		0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
		b1	b2	b3	b4	b5	b6	b7	b8	
Aquifer saturated thickness discharging to surface water (ft):		17.00 ft	17.00 ft	17.00 ft	17.00 ft	17.00 ft	17.00 ft	17.00 ft	17.00 ft	
$\dot{m}_{COC} =$		1.17E-04 mg/s	3.09E-03 mg/s	7.38E-04 mg/s	7.71E-05 mg/s	4.96E-05 mg/s	4.77E-05 mg/s	3.40E-03 mg/s	6.69E-06 mg/s	
$Q_{gw} =$		7.67E-04 cfs	8.86E-04 cfs	4.07E-04 cfs	2.18E-04 cfs	1.12E-04 cfs	1.60E-04 cfs	2.53E-03 cfs	2.36E-04 cfs	

$$\frac{\sum \dot{m}_{COC}}{\sum Q_{gw}} = \frac{7.53\text{E-}03 \text{ mg/s}}{5.32\text{E-}03 \text{ cfs}} \qquad \overline{C}_{gw} = 5.00\text{E-}02 \text{ mg/L}$$

Figure C-2: Guterl Shallow Aquifer – Calculation of Uranium Flux Concentration to the Erie Canal

TRRP-15eco: Discharge-Weighted Representative Groundwater COC Concentration at Surface Water Interface (v. 1.2 Oct 2012)



INSTRUCTIONS:

1. Calculator solves general condition described in [EQ 12], below
2. Enter data only in uncolored cells
3. BEGIN by entering monitoring well designations starting with "Well 1," and consistent with the order presented in Figure D.2 (Appendix D, TRRP-15eco) and reproduced here - Up to 10 groundwater/surface water interface monitoring wells may be entered
4. Enter distances as shown in Figure D.2 (Appendix D, TRRP-15eco)
5. Enter remaining COC and aquifer parameter data from each respective monitoring well
6. Enter values IN UNITS DENOTED
7. Representative groundwater concentration displayed in blue box at bottom
8. DELETE DATA IN COLUMNS WITH NO WELL DESIGNATION

(table below contains example D.1 information - replace with site well information)

$$\overline{C}_{gw} = \frac{C_{gw_1} K_1 \frac{dh}{dl_1} \eta_{e_1} \left(d_0 + \frac{d_1}{2} \right) b_1 + \sum_{i=2}^{n-1} \left(C_{gw_i} K_i \frac{dh}{dl_i} \eta_{e_i} \left(\frac{d_{i-1} + d_i}{2} \right) b_i \right) + C_{gw_n} K_n \frac{dh}{dl_n} \eta_{e_n} \left(\frac{d_{n-1}}{2} + d_n \right) b_n}{K_1 \frac{dh}{dl_1} \eta_{e_1} \left(d_0 + \frac{d_1}{2} \right) b_1 + \sum_{i=2}^{n-1} \left(K_i \frac{dh}{dl_i} \eta_{e_i} \left(\frac{d_{i-1} + d_i}{2} \right) b_i \right) + K_n \frac{dh}{dl_n} \eta_{e_n} \left(\frac{d_{n-1}}{2} + d_n \right) b_n} \quad \text{[EQ 12]}$$

Number of monitoring wells inside GW plume: **n = 6**

Monitoring Wells		Well 1	Well 2	Well 3	Well 4	Well 5	Well 6			
Enter designation of monitoring wells in plume (from d_0; see Figure D2):		MW-711DD	MW-712DD	MW-709DD	MW-710DD	MW-708DD	Plume Edge			
Interwell Distances	d0	d1	d2	d3	d4	d5	d6			
Enter interwell and plume-edge distances per Figure D-2 (ft):	100.0 ft	468.0 ft	140.0 ft	140.0 ft	300.0 ft	75.0 ft	85.0 ft			
Groundwater Concentrations		C1	C2	C3	C4	C5	C6			
Enter groundwater COC concentration from each well in plume (mg/L):		0.00 mg/L	0.03 mg/L	0.08 mg/L	0.05 mg/L	0.02 mg/L	0.01 mg/L			
Aquifer Parameters		K1	K2	K3	K4	K5	K6			
Hydraulic conductivity (cm/s):		6.35E-04 cm/s	6.35E-04 cm/s	6.35E-04 cm/s	6.35E-04 cm/s	6.35E-04 cm/s	6.35E-04 cm/s			
		dh/dl1	dh/dl2	dh/dl3	dh/dl4	dh/dl5	dh/dl6			
Hydraulic gradient (-):		0.0070	0.0070	0.0070	0.0070	0.0070	0.0070			
		ηe1	ηe2	ηe3	ηe4	ηe5	ηe6			
Effective porosity (-):		0.05	0.05	0.05	0.05	0.05	0.05			
		b1	b2	b3	b4	b5	b6			
Aquifer saturated thickness discharging to surface water (ft):		38.00 ft	38.00 ft	38.00 ft	38.00 ft	38.00 ft	38.00 ft			
$\dot{m}_{COC} =$		1.17E-05 mg/s	7.56E-05 mg/s	8.26E-05 mg/s	9.03E-05 mg/s	3.00E-05 mg/s	9.61E-06 mg/s			
$Q_{gw} =$		9.25E-05 cfs	8.42E-05 cfs	3.88E-05 cfs	6.09E-05 cfs	5.19E-05 cfs	3.39E-05 cfs			

$$\frac{\sum \dot{m}_{COC}}{\sum Q_{gw}} = \frac{3.00\text{E-}04 \text{ mg/s}}{3.62\text{E-}04 \text{ cfs}} \qquad \overline{C}_{gw} = \text{2.92E-02 mg/L}$$

Figure C-3: Guterl Deep Aquifer – Calculation of Uranium Flux Concentration to the Erie Canal

Attachment D – 1

SESOIL

SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability	Organic Carbon Content	Adsorption Coefficient	Cation Exchange Capacity	Freundlich Exponent	Solid Phase Degradation Rate	Liquid Phase Degradation Rate	Soil pH
		cm	feet	cm^2	percent	µg/g / µg/mL	mEq / 100 g soil	unitless	1/day	1/day	pH
1	4	61.0	2.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	4	61.0	2.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	2	30.5	1.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4	1	11.2	0.37	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00

Soil Parameters

Bulk Density (g/cm^3)	1.30
Effective Porosity (fraction)	0.25
Soil Pore Disconnectedness	4.00

Application Parameters

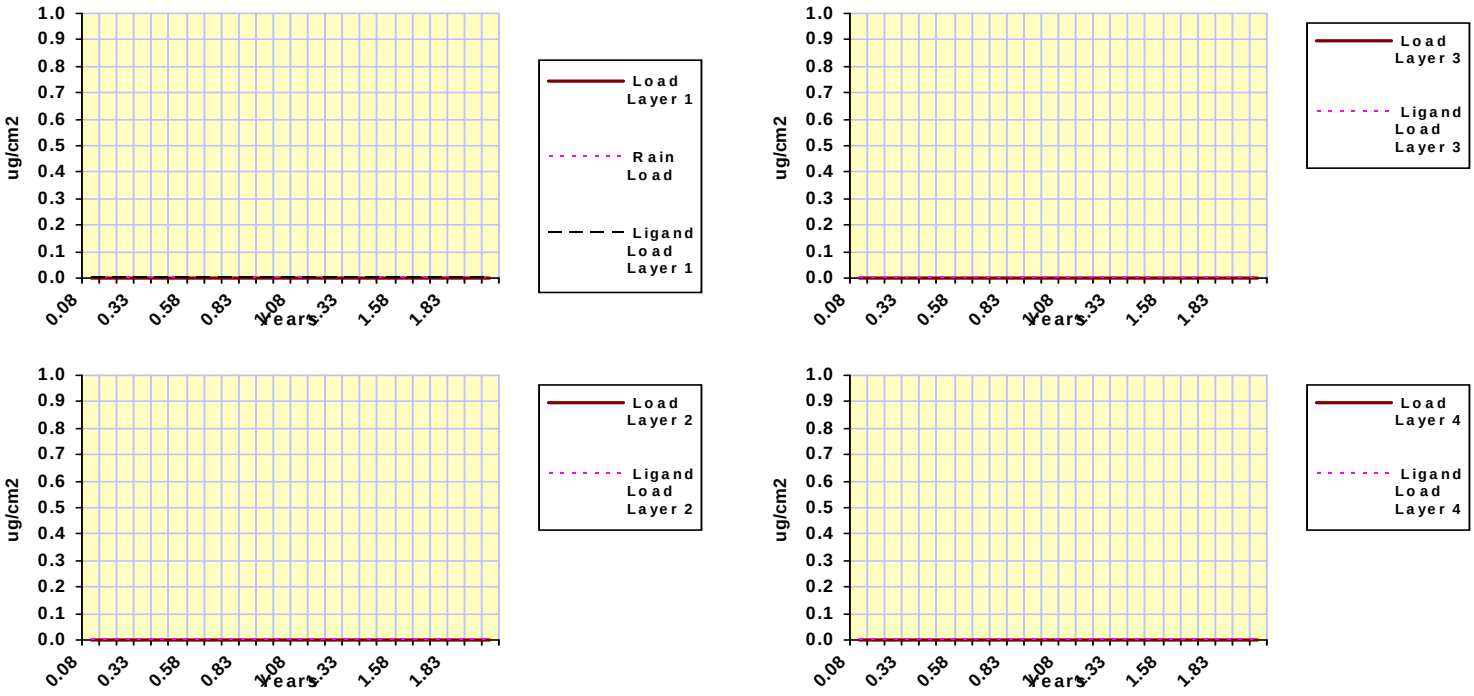
Area	cm^2	4.75E+7
	ft^2	5.11E+4
Latitude	degrees	43.2
Spill Index		1

Chemical Parameters

Water Solubility	(µg/mL)	100.0	**Moles Ligand / Moles Chemical**	0.00
Henry's Law	(M^3-atm/mol)	0.00	**Ligand Molecular Weight** (g/mol)	0.00
K_{oc}	(µg/g)/(µg/mL)	0.00	**Base Hydrolysis Rate** (L/mol/day)	0.00
Valance	(g/mole)	0.00	**Ligand Dissociation Constant**	0.00
Air Diffusion Coefficient	(cm^2/sec)	0.00	**Neutral Hydrolysis Rate** (L/mol/day)	0.00
Water Diffusion Coefficient	(cm^2/sec)	1.10E-6	**Acid Hydrolysis Rate** (L/mol/day)	0.00
Molecular Weight	(g/mol)	238.00		

Output File:
C:\SEVIEW63\GUTERL\SESOIL2\A1036.OUT
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI
Application File: Soil Area 1
C:\SEVIEW63\GUTERL\SESOIL2\A1036.APL

Sublayer Loads	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Layer 1 (ug/g)	5.83E+03	4.26E+03	1.36E+03	1.17E+03						
Layer 2 (ug/g)	7.54E+02	3.38E+02	1.70E+02	2.03E+00						
Layer 3 (ug/g)	3.36E+00	4.69E+00								
Layer 4 (ug/g)	4.69E+00									



SESOIL Pollutant Cycle Report

Scenario Description:

SESOIL Output File: C:\SEVIEW63\GUTERL\SESOIL2\A1036.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	0.000E+00	0.00
In Soil Air	0.000E+00	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	2.194E+07	0.00
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	8.587E+03	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	1.280E+13	97.92
Total Output	1.280E+13	97.92
Total Input	1.308E+13	
Input - Output	2.719E+11	

Maximum leachate concentration: 2.837E+01 **mg/l**

Climate File: LOCKPORT 2 NE
C:\SEVIEW63\GUTERL\SESOIL2\LOCKPOR2.CLM

Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM

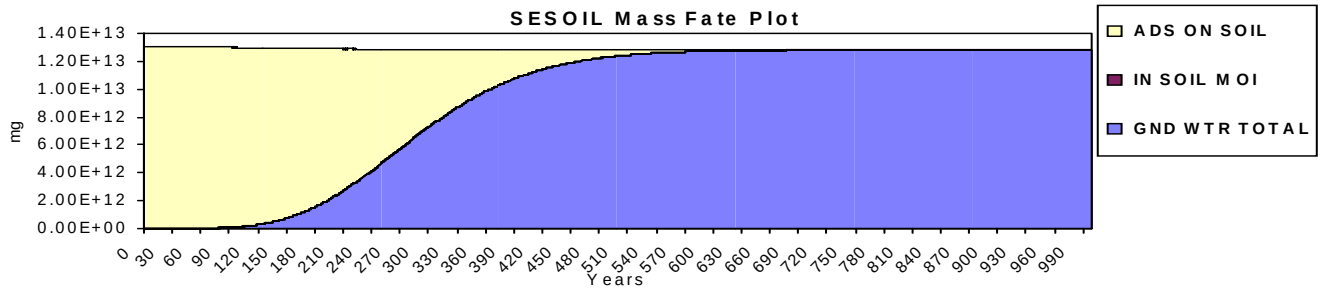
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI

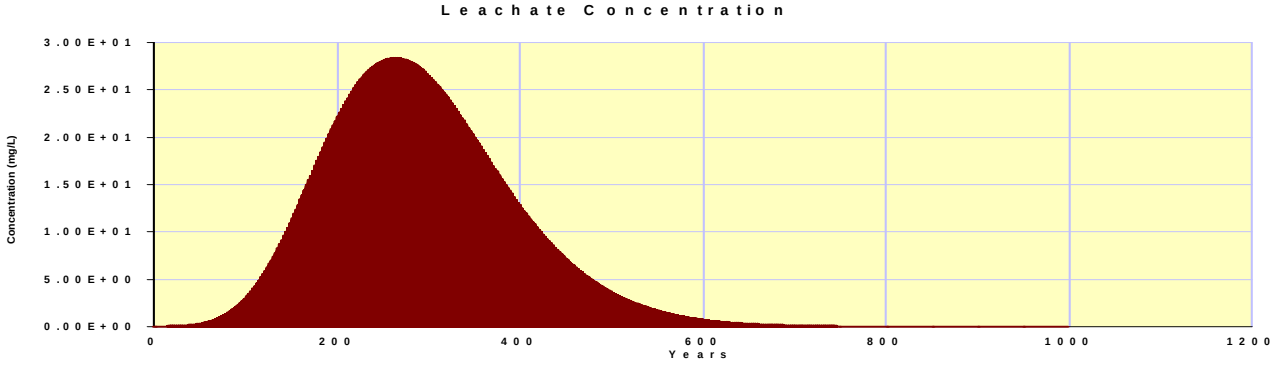
Application File: Soil Area 1
C:\SEVIEW63\GUTERL\SESOIL2\A1036.APL

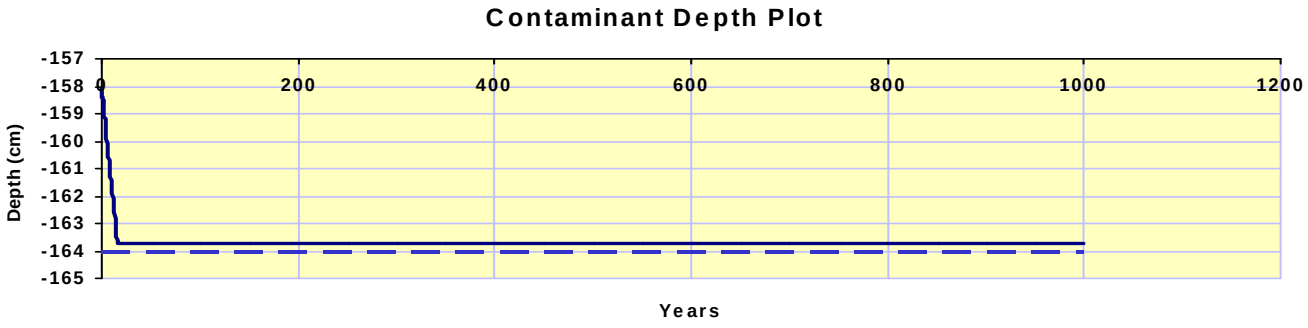
Starting Depth: 158.10 **cm**

Ending Depth: 163.70 **cm**

Total Depth: 163.70 **cm**







Attachment D – 2

SESOIL

SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability	Organic Carbon Content	Adsorption Coefficient	Cation Exchange Capacity	Freundlich Exponent	Solid Phase Degradation Rate	Liquid Phase Degradation Rate	Soil pH
		cm	feet	cm^2	percent	µg/g / µg/mL	mEq / 100 g soil	unitless	1/day	1/day	pH
1	4	61.0	2.00	2.80E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	4	61.0	2.00	2.80E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	3	45.7	1.50	2.80E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4	1	8.9	0.29	2.80E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00

Soil Parameters

Bulk Density (g/cm^3)	1.30
Effective Porosity (fraction)	0.25
Soil Pore Disconnectedness	4.00

Application Parameters

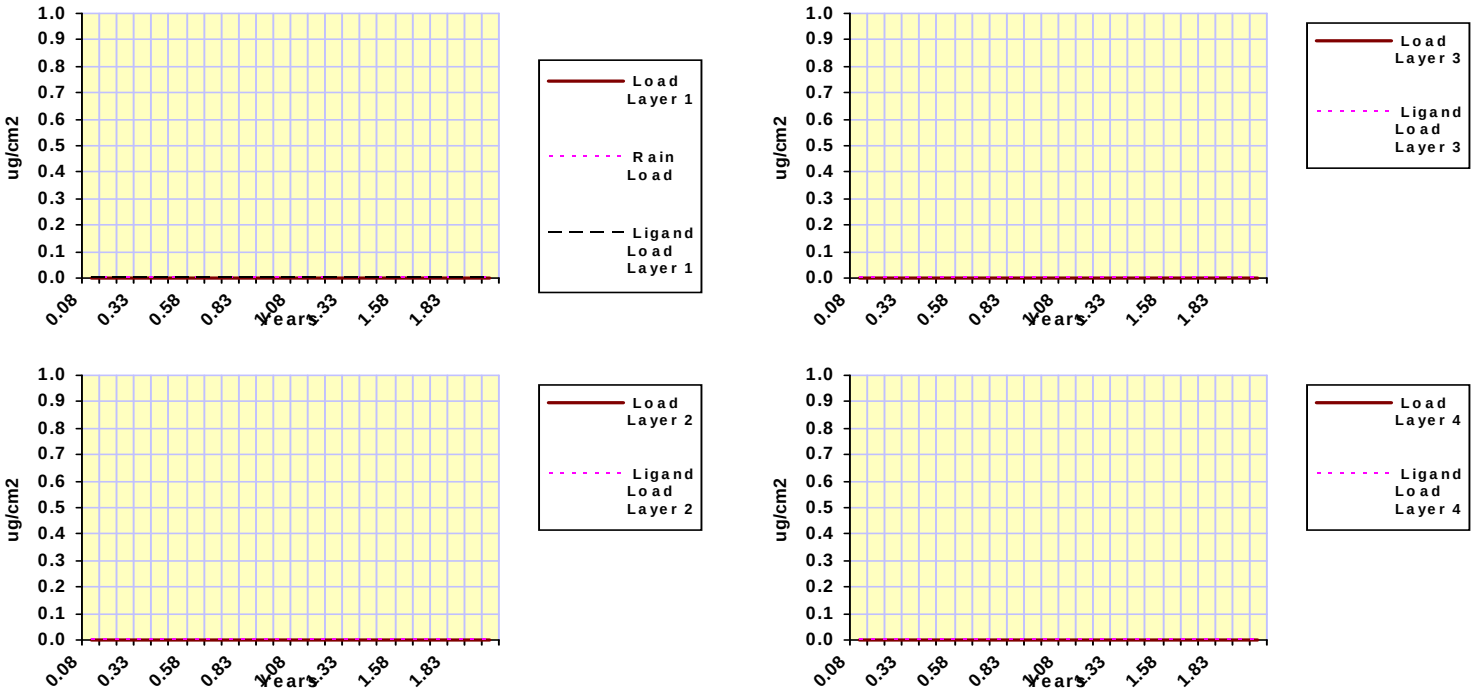
Area	cm^2	2.95E+8
	ft^2	3.17E+5
Latitude	degrees	43.2
Spill Index		1

Chemical Parameters

Water Solubility	(µg/mL)	100.0	**Moles Ligand / Moles Chemical**	0.00
Henry's Law	(M^3-atm/mol)	0.00	**Ligand Molecular Weight** (g/mol)	0.00
K_{oc}	(µg/g)/(µg/mL)	0.00	**Base Hydrolysis Rate** (L/mol/day)	0.00
Valance	(g/mole)	0.00	**Ligand Dissociation Constant**	0.00
Air Diffusion Coefficient	(cm^2/sec)	0.00	**Neutral Hydrolysis Rate** (L/mol/day)	0.00
Water Diffusion Coefficient	(cm^2/sec)	1.10E-6	**Acid Hydrolysis Rate** (L/mol/day)	0.00
Molecular Weight	(g/mol)	238.00		

Output File:
C:\SEVIEW63\GUTERL\SESOIL2\A2047.OUT
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI
Application File: Soil Area 2
C:\SEVIEW63\GUTERL\SESOIL2\A2047.APL

Sublayer Loads	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Layer 1 (ug/g)	2.78E+02	6.60E+02	1.89E+03	3.21E+01						
Layer 2 (ug/g)	1.83E+02	7.53E+02	1.93E+01	9.90E+00						
Layer 3 (ug/g)	1.16E+02	1.69E+02	4.30E+01							
Layer 4 (ug/g)	7.60E+00									



SESOIL Pollutant Cycle Report

Scenario Description:

SESOIL Output File: C:\SEVIEW63\GUTERL\SESOIL2\A2047.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	0.000E+00	0.00
In Soil Air	0.000E+00	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	2.942E+07	0.00
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	1.174E+04	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	2.403E+13	98.89
Total Output	2.403E+13	98.89
Total Input	2.430E+13	
Input - Output	2.694E+11	

Maximum leachate concentration: 7.682E+00 **mg/l**

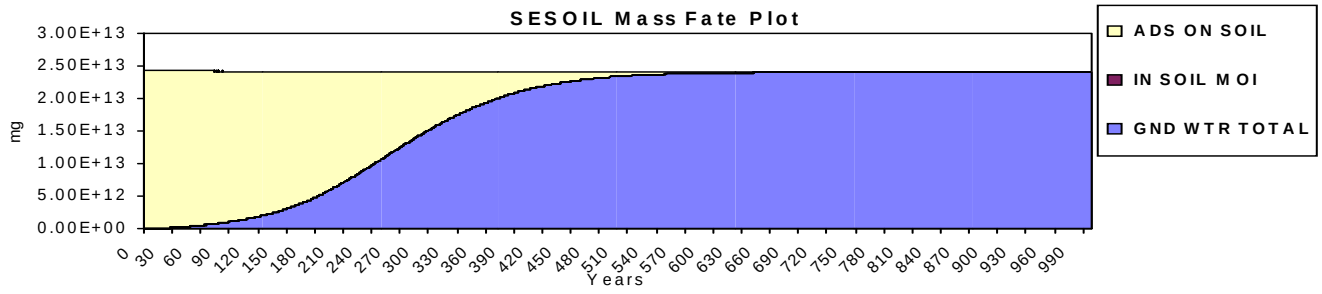
Climate File: LOCKPORT 2 NE
C:\SEVIEW63\GUTERL\SESOIL2\LOCKPOR2.CLM

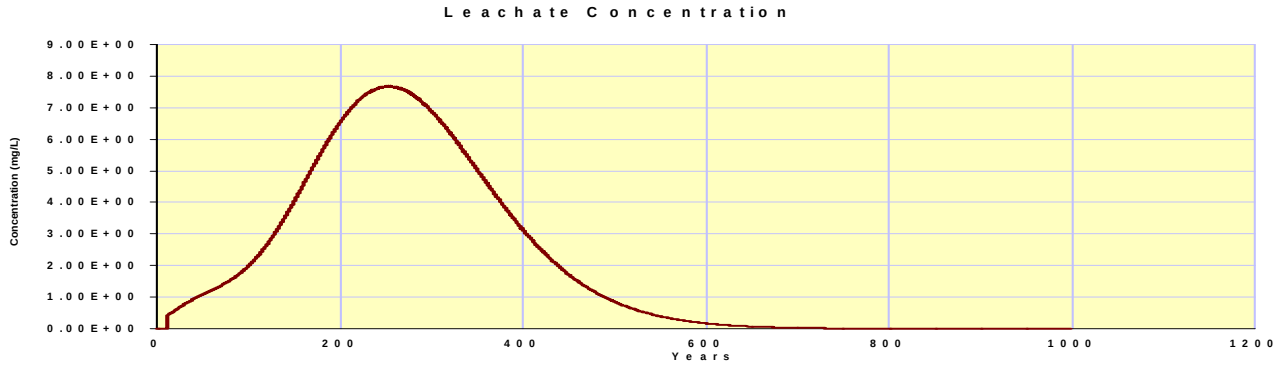
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM

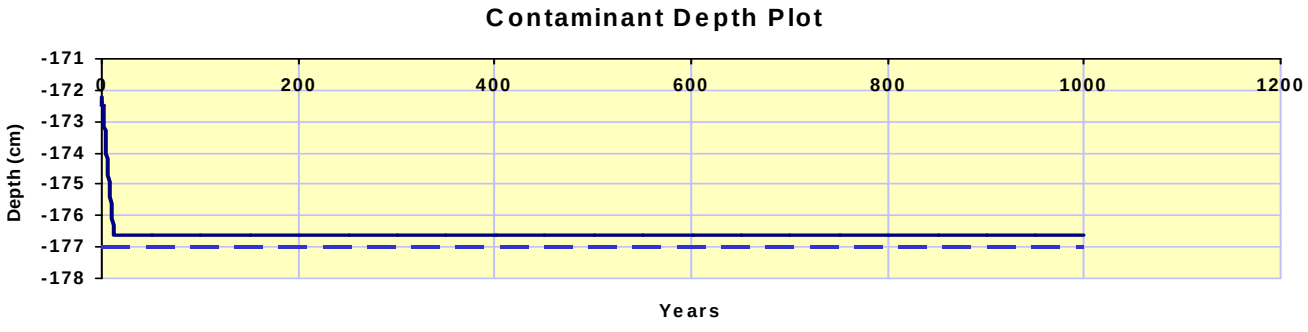
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI

Application File: Soil Area 2
C:\SEVIEW63\GUTERL\SESOIL2\A2047.APL

Starting Depth: 172.20 **cm**
Ending Depth: 176.60 **cm**
Total Depth: 176.60 **cm**







Attachment D – 3

SESOIL

SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability	Organic Carbon Content	Adsorption Coefficient	Cation Exchange Capacity	Freundlich Exponent	Solid Phase Degradation Rate	Liquid Phase Degradation Rate	Soil pH
		cm	feet	cm^2	percent	µg/g / µg/mL	mEq / 100 g soil	unitless	1/day	1/day	pH
1	4	61.0	2.00	5.20E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	4	61.0	2.00	5.20E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	1	15.1	0.50	5.20E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4		0.0	0.00	.0	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00

Soil Parameters

Bulk Density (g/cm^3)	1.30
Effective Porosity (fraction)	0.25
Soil Pore Disconnectedness	4.00

Application Parameters

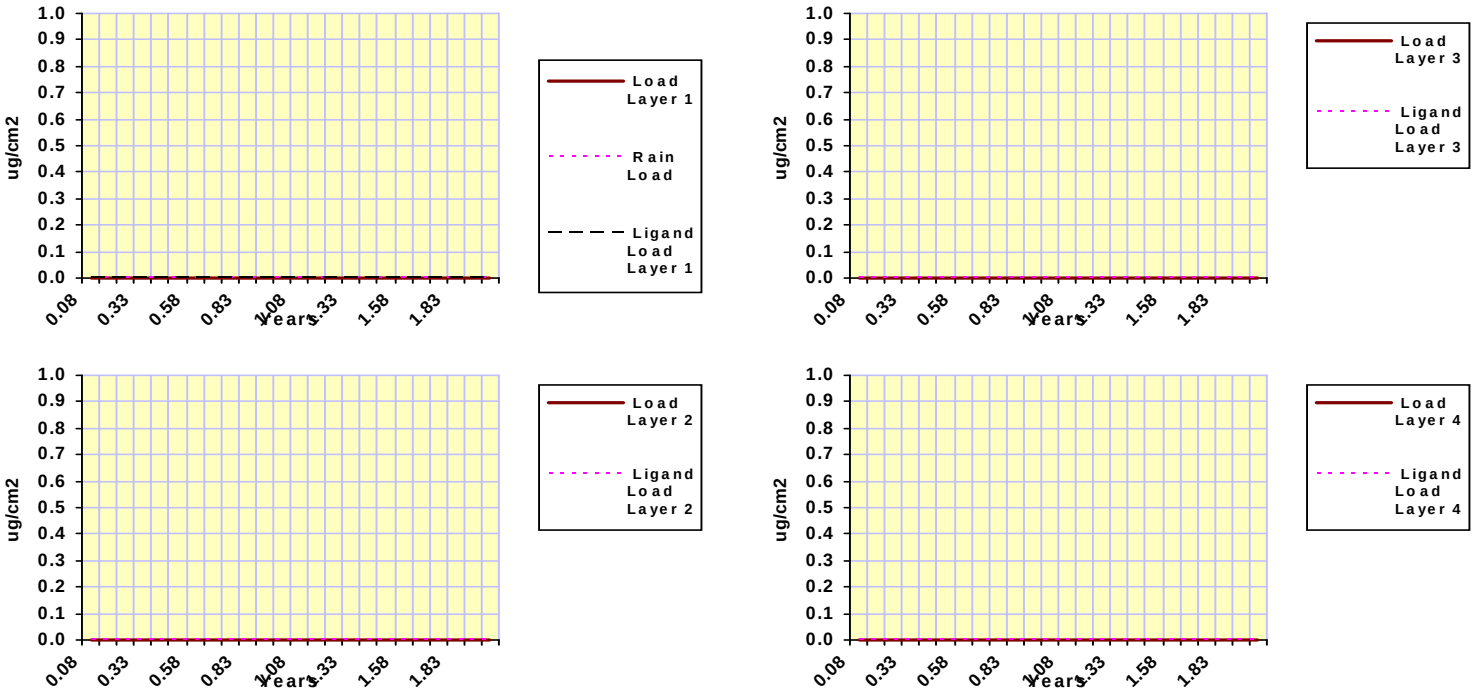
Area	cm^2	1.45E+8
	ft^2	1.56E+5
Latitude	degrees	43.2
Spill Index		1

Chemical Parameters

Water Solubility	(µg/mL)	100.0	**Moles Ligand / Moles Chemical**	0.00
Henry's Law	(M^3-atm/mol)	0.00	**Ligand Molecular Weight** (g/mol)	0.00
K_{oc}	(µg/g)/(µg/mL)	0.00	**Base Hydrolysis Rate** (L/mol/day)	0.00
Valance	(g/mole)	0.00	**Ligand Dissociation Constant**	0.00
Air Diffusion Coefficient	(cm^2/sec)	0.00	**Neutral Hydrolysis Rate** (L/mol/day)	0.00
Water Diffusion Coefficient	(cm^2/sec)	1.10E-6	**Acid Hydrolysis Rate** (L/mol/day)	0.00
Molecular Weight	(g/mol)	238.00		

Output File:
C:\SEVIEW63\GUTERL\SESOIL2\A3022.OUT
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI
Application File: Soil Area 3
C:\SEVIEW63\GUTERL\SESOIL2\A3022.APL

Sublayer Loads	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Layer 1 (ug/g)	1.81E+03	2.91E+02	1.35E+02	3.00E+01						
Layer 2 (ug/g)	4.04E+01	6.71E+01	4.51E+01	2.31E+01						
Layer 3 (ug/g)	1.20E+00									
Layer 4 (ug/g)										



SESOIL Pollutant Cycle Report

Scenario Description:

SESOIL Output File: C:\SEVIEW63\GUTERL\SESOIL2\A3022.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	0.000E+00	0.00
In Soil Air	0.000E+00	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	5.217E+06	0.00
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	1.830E+03	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	6.942E+12	98.76
Total Output	6.942E+12	98.76
Total Input	7.030E+12	
Input - Output	8.749E+10	

Maximum leachate concentration: 5.298E+00 **mg/l**

Climate File: LOCKPORT 2 NE
C:\SEVIEW63\GUTERL\SESOIL2\LOCKPOR2.CLM

Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM

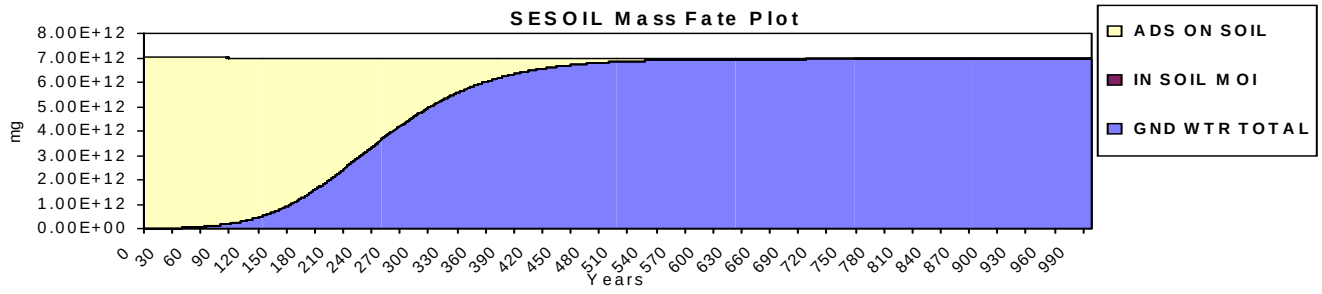
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI

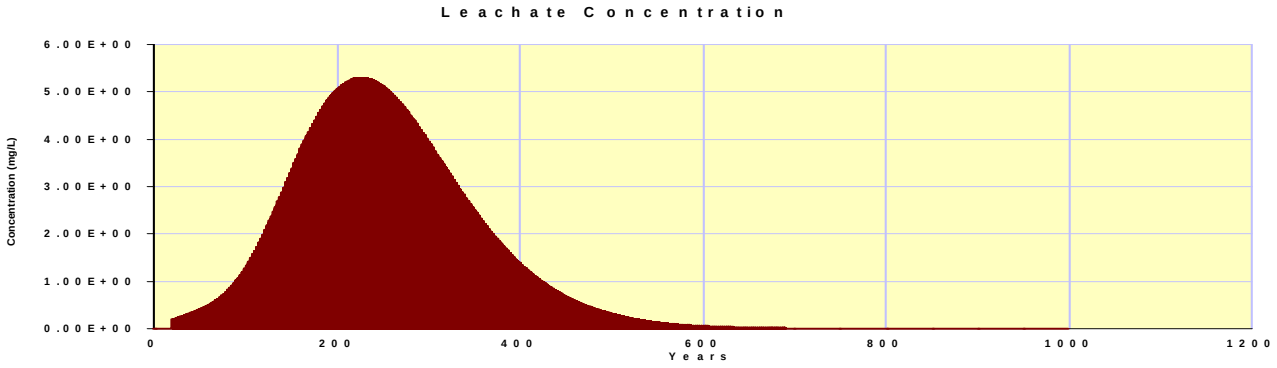
Application File: Soil Area 3
C:\SEVIEW63\GUTERL\SESOIL2\A3022.APL

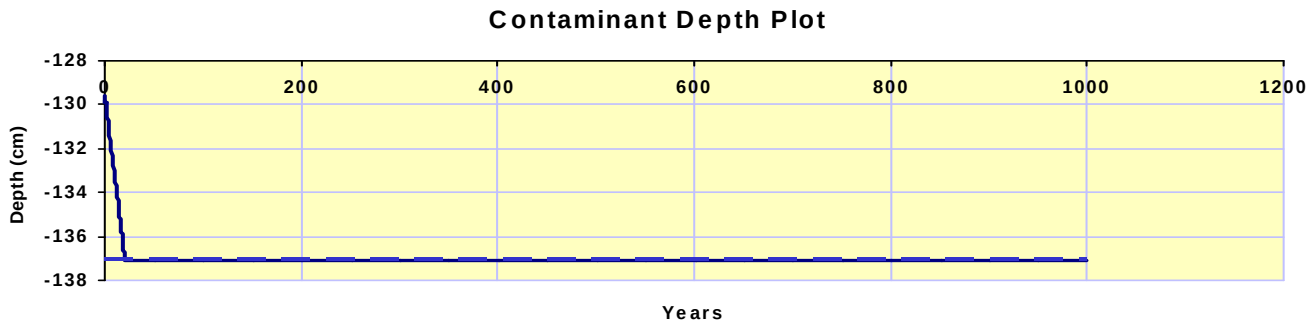
Starting Depth: 129.60 **cm**

Ending Depth: 137.10 **cm**

Total Depth: 137.10 **cm**







Attachment D – 4

SESOIL

SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability	Organic Carbon Content	Adsorption Coefficient	Cation Exchange Capacity	Freundlich Exponent	Solid Phase Degradation Rate	Liquid Phase Degradation Rate	Soil pH
		cm	feet	cm^2	percent	µg/g / µg/mL	mEq / 100 g soil	unitless	1/day	1/day	pH
1	4	61.0	2.00	5.70E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	4	61.0	2.00	5.70E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	1	10.1	0.33	5.70E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4		0.0	0.00	.0	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00

Soil Parameters

Bulk Density (g/cm^3)	1.30
Effective Porosity (fraction)	0.25
Soil Pore Disconnectedness	4.00

Application Parameters

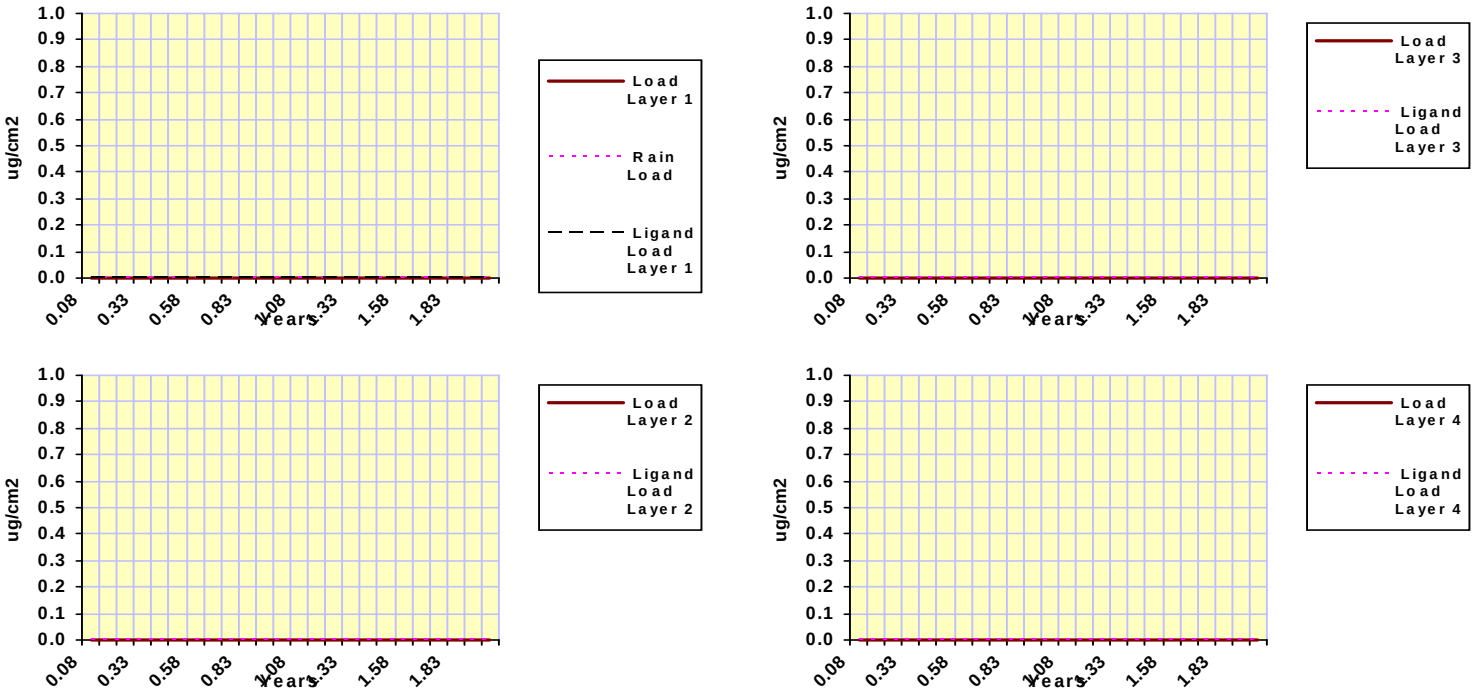
Area	cm^2	4.25E+8
	ft^2	4.57E+5
Latitude	degrees	43.2
Spill Index		1

Chemical Parameters

Water Solubility	(µg/mL)	100.0	**Moles Ligand / Moles Chemical**	0.00
Henry's Law	(M^3-atm/mol)	0.00	**Ligand Molecular Weight** (g/mol)	0.00
K_{oc}	(µg/g)/(µg/mL)	0.00	**Base Hydrolysis Rate** (L/mol/day)	0.00
Valance	(g/mole)	0.00	**Ligand Dissociation Constant**	0.00
Air Diffusion Coefficient	(cm^2/sec)	0.00	**Neutral Hydrolysis Rate** (L/mol/day)	0.00
Water Diffusion Coefficient	(cm^2/sec)	1.10E-6	**Acid Hydrolysis Rate** (L/mol/day)	0.00
Molecular Weight	(g/mol)	238.00		

Output File:
C:\SEVIEW63\GUTERL\SESOIL2\A4016.OUT
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI
Application File: Soil Area 4
C:\SEVIEW63\GUTERL\SESOIL2\A4016.APL

Sublayer Loads	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Layer 1 (ug/g)	2.32E+03	2.16E+02	4.59E+01	6.50E+00						
Layer 2 (ug/g)	6.64E+02	9.28E+01	1.55E+01	5.12E+01						
Layer 3 (ug/g)	3.20E+03									
Layer 4 (ug/g)										



SESOIL Pollutant Cycle Report

Scenario Description:

SESOIL Output File: C:\SEVIEW63\GUTERL\SESOIL2\A4016.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	0.000E+00	0.00
In Soil Air	0.000E+00	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	5.484E+06	0.00
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	1.877E+03	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	4.629E+13	99.25
Total Output	4.629E+13	99.25
Total Input	4.664E+13	
Input - Output	3.496E+11	

Maximum leachate concentration: 3.528E+01 **mg/l**

Climate File: LOCKPORT 2 NE
C:\SEVIEW63\GUTERL\SESOIL2\LOCKPOR2.CLM

Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM

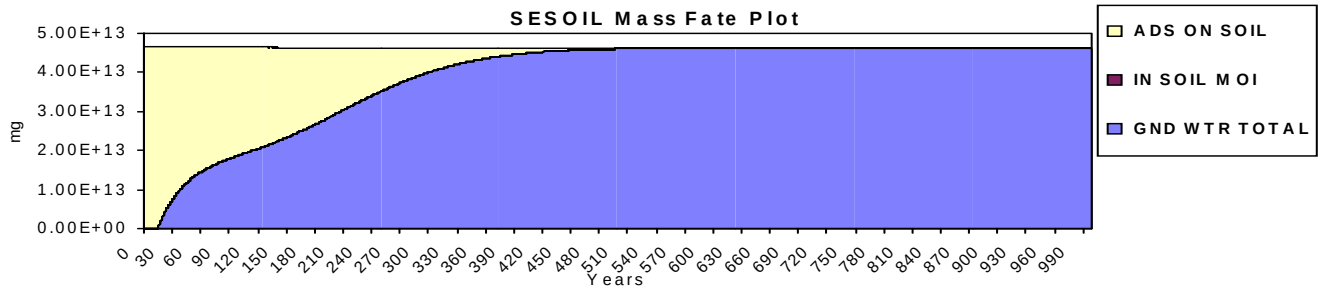
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI

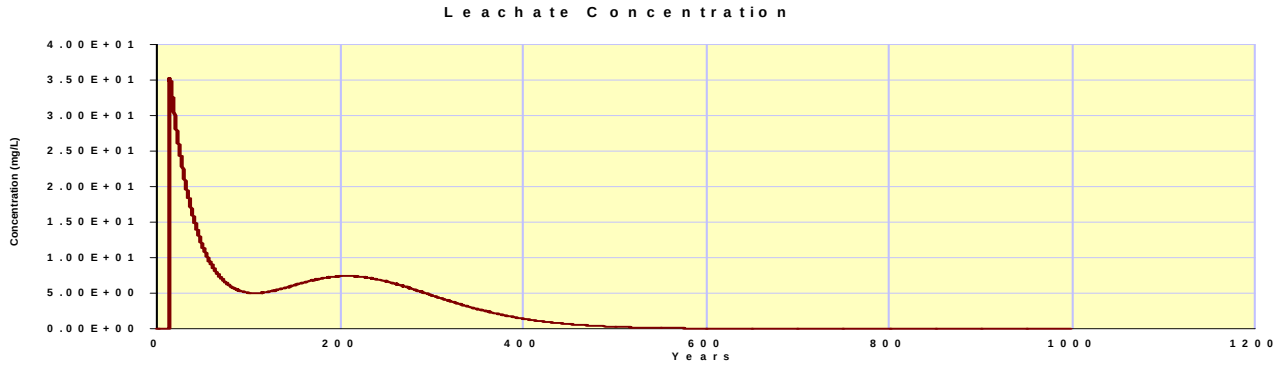
Application File: Soil Area 4
C:\SEVIEW63\GUTERL\SESOIL2\A4016.APL

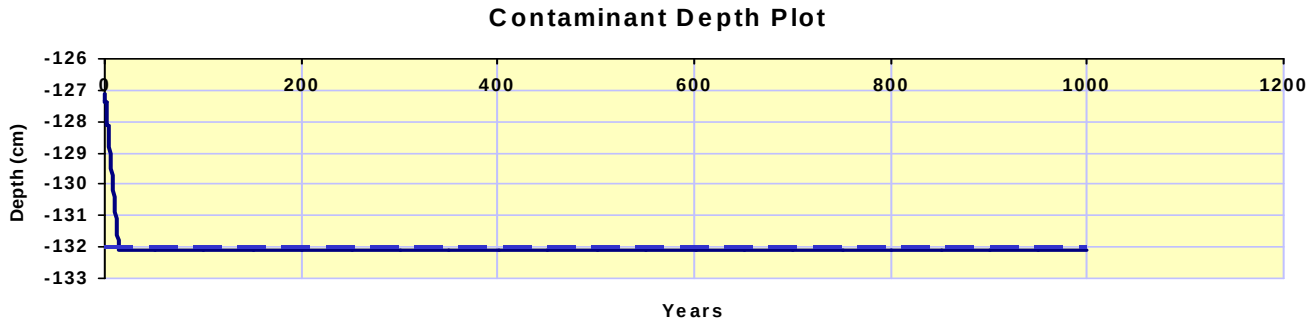
Starting Depth: 127.10 **cm**

Ending Depth: 132.10 **cm**

Total Depth: 132.10 **cm**







Attachment D – 5

SESOIL

SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability	Organic Carbon Content	Adsorption Coefficient	Cation Exchange Capacity	Freundlich Exponent	Solid Phase Degradation Rate	Liquid Phase Degradation Rate	Soil pH
		cm	feet	cm^2	percent	µg/g / µg/mL	mEq / 100 g soil	unitless	1/day	1/day	pH
1	4	61.0	2.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	4	61.0	2.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	2	30.5	1.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4	1	11.6	0.38	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00

Soil Parameters

Bulk Density (g/cm^3)	1.30
Effective Porosity (fraction)	0.25
Soil Pore Disconnectedness	4.00

Application Parameters

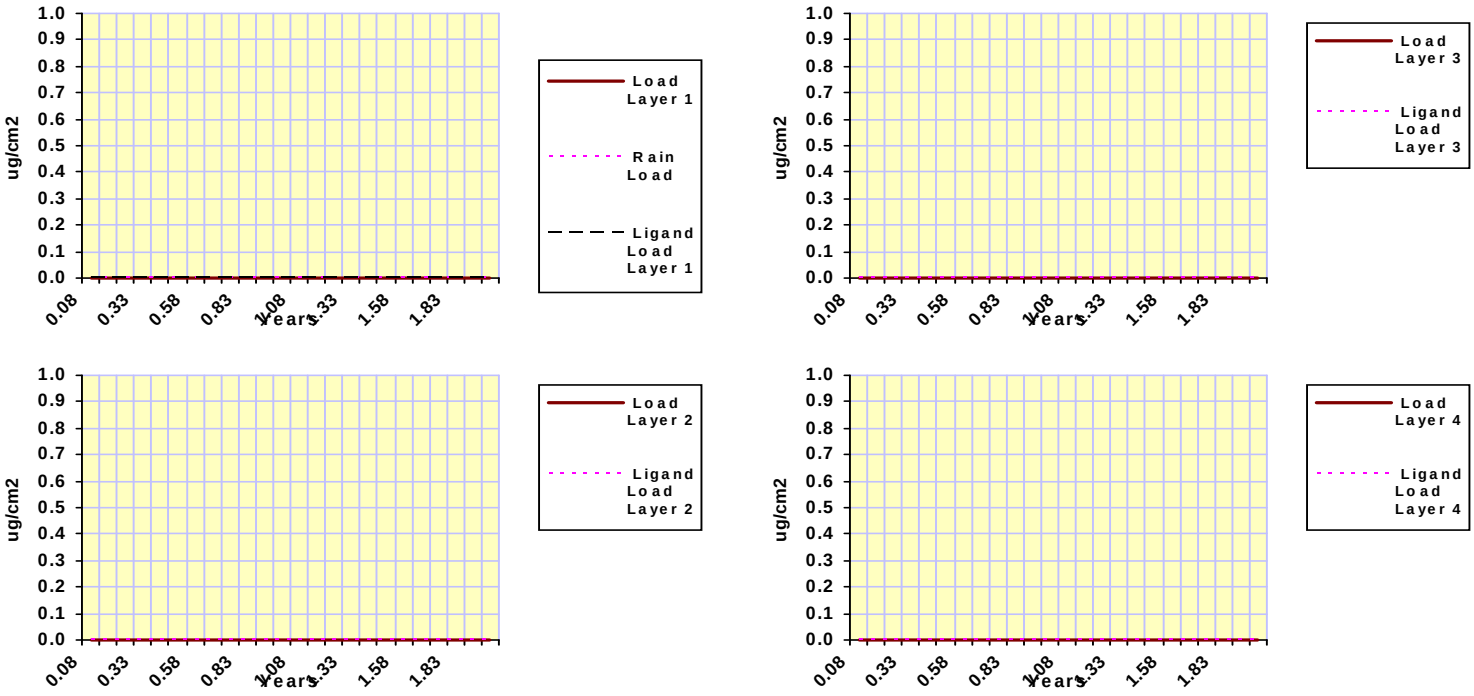
Area	cm^2	7.02E+7
	ft^2	7.55E+4
Latitude	degrees	43.2
Spill Index		1

Chemical Parameters

Water Solubility	(µg/mL)	100.0	**Moles Ligand / Moles Chemical**	0.00
Henry's Law	(M^3-atm/mol)	0.00	**Ligand Molecular Weight** (g/mol)	0.00
K_{oc}	(µg/g)/(µg/mL)	0.00	**Base Hydrolysis Rate** (L/mol/day)	0.00
Valance	(g/mole)	0.00	**Ligand Dissociation Constant**	0.00
Air Diffusion Coefficient	(cm^2/sec)	0.00	**Neutral Hydrolysis Rate** (L/mol/day)	0.00
Water Diffusion Coefficient	(cm^2/sec)	1.10E-6	**Acid Hydrolysis Rate** (L/mol/day)	0.00
Molecular Weight	(g/mol)	238.00		

Output File:
C:\SEVIEW63\GUTERL\SESOIL2\A5019.OUT
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI
Application File: Soil Area 5
C:\SEVIEW63\GUTERL\SESOIL2\A5019.APL

Sublayer Loads	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Layer 1 (ug/g)	1.91E+01	5.03E+01	1.02E+01	1.60E+01						
Layer 2 (ug/g)	2.18E+01	8.95E+00	8.58E+00	8.22E+00						
Layer 3 (ug/g)	7.85E+00	7.49E+00								
Layer 4 (ug/g)	7.12E+00									



SESOIL Pollutant Cycle Report

Scenario Description:

SESOIL Output File: C:\SEVIEW63\GUTERL\SESOIL2\A5019.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	0.000E+00	0.00
In Soil Air	0.000E+00	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	3.906E+05	0.00
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	1.528E+02	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	2.236E+11	98.04
Total Output	2.236E+11	98.04
Total Input	2.281E+11	
Input - Output	4.468E+09	

Maximum leachate concentration: 2.810E-01 **mg/l**

Climate File: LOCKPORT 2 NE
C:\SEVIEW63\GUTERL\SESOIL2\LOCKPOR2.CLM

Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM

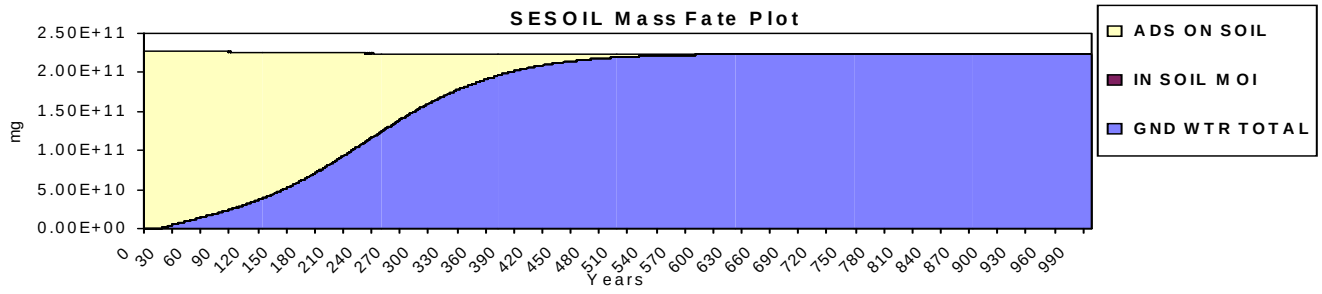
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI

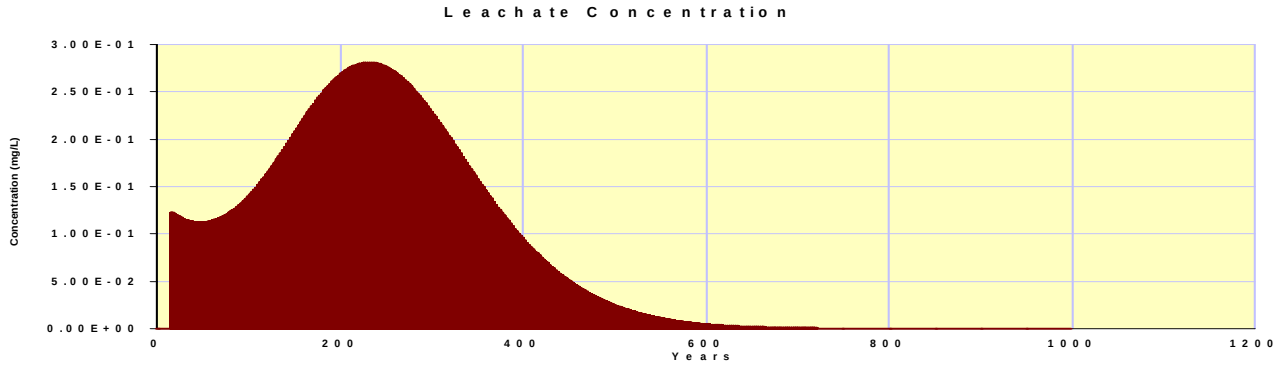
Application File: Soil Area 5
C:\SEVIEW63\GUTERL\SESOIL2\A5019.APL

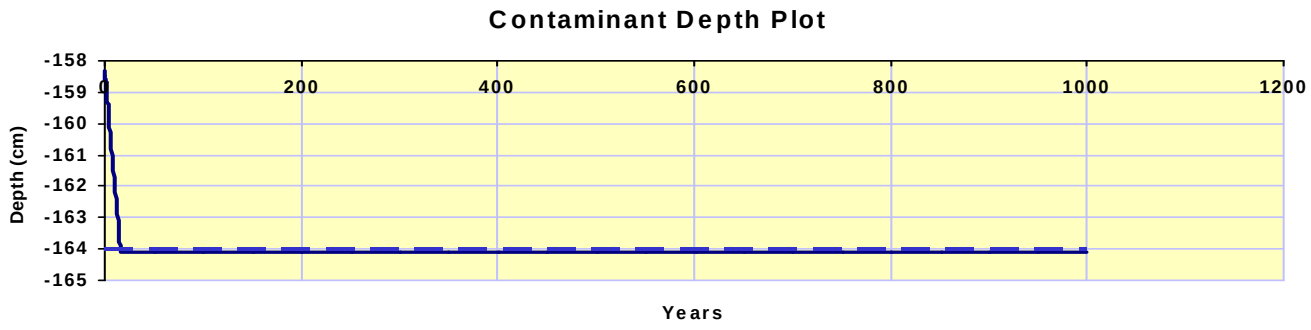
Starting Depth: 158.30 **cm**

Ending Depth: 164.10 **cm**

Total Depth: 164.10 **cm**







Attachment E – 1

SESOIL

SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability	Organic Carbon Content	Adsorption Coefficient	Cation Exchange Capacity	Freundlich Exponent	Solid Phase Degradation Rate	Liquid Phase Degradation Rate	Soil pH
		cm	feet	cm^2	percent	µg/g / µg/mL	mEq / 100 g soil	unitless	1/day	1/day	pH
1	4	61.0	2.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	4	61.0	2.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	2	30.5	1.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4	1	11.2	0.37	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00

Soil Parameters

Bulk Density (g/cm^3)	1.30
Effective Porosity (fraction)	0.25
Soil Pore Disconnectedness	4.00

Application Parameters

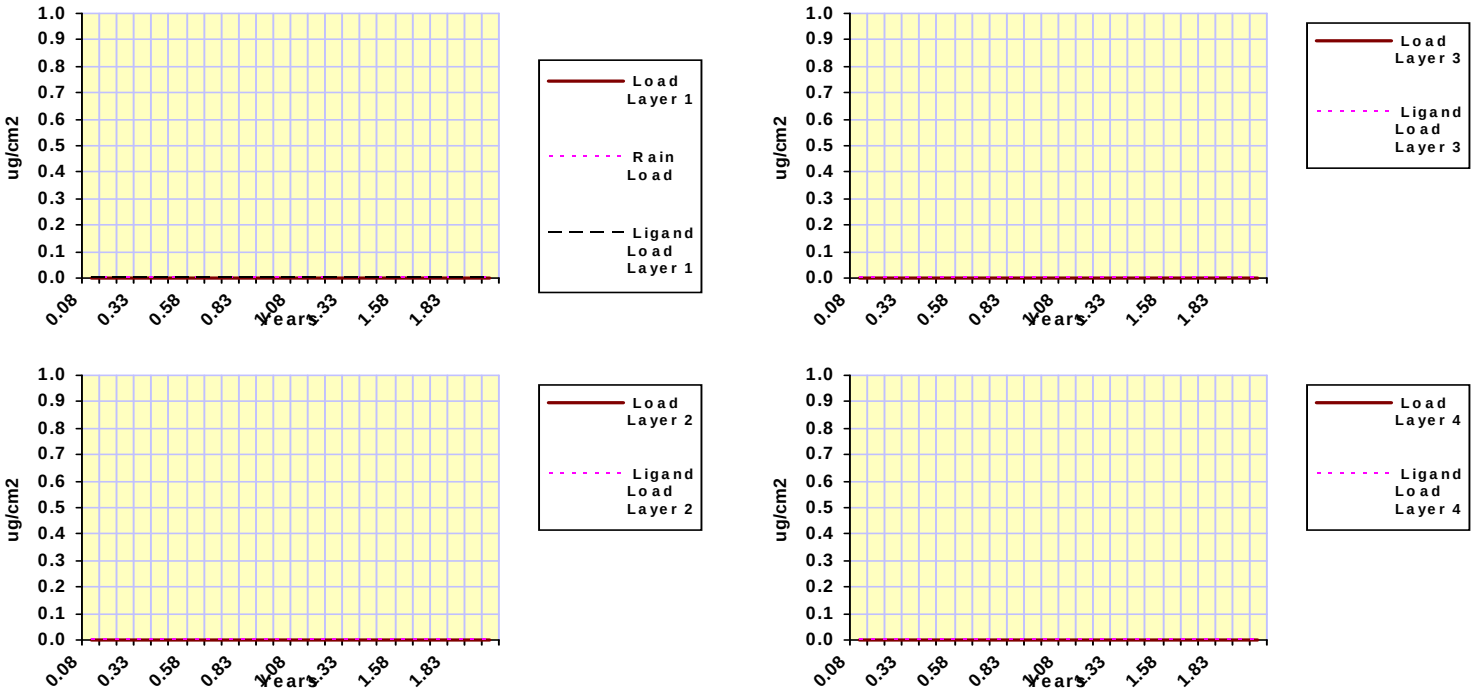
Area	cm^2	4.75E+7
	ft^2	5.11E+4
Latitude	degrees	43.2
Spill Index		1

Chemical Parameters

Water Solubility	(µg/mL)	100.0	**Moles Ligand / Moles Chemical**	0.00
Henry's Law	(M^3-atm/mol)	0.00	**Ligand Molecular Weight** (g/mol)	0.00
K_{oc}	(µg/g)/(µg/mL)	0.00	**Base Hydrolysis Rate** (L/mol/day)	0.00
Valance	(g/mole)	0.00	**Ligand Dissociation Constant**	0.00
Air Diffusion Coefficient	(cm^2/sec)	0.00	**Neutral Hydrolysis Rate** (L/mol/day)	0.00
Water Diffusion Coefficient	(cm^2/sec)	1.10E-6	**Acid Hydrolysis Rate** (L/mol/day)	0.00
Molecular Weight	(g/mol)	238.00		

Output File:
C:\SEVIEW63\GUTERL\SESOIL2\A1035.OUT
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI
Application File: Soil Area 1
C:\SEVIEW63\GUTERL\SESOIL2\A1035.APL

Sublayer Loads	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Layer 1 (ug/g)	2.22E+00	2.22E+00	2.22E+00	2.22E+00						
Layer 2 (ug/g)	2.22E+00	2.22E+00	2.22E+00	2.03E+00						
Layer 3 (ug/g)	3.36E+00	4.69E+00								
Layer 4 (ug/g)	4.69E+00									



SESOIL Pollutant Cycle Report

Scenario Description:

SESOIL Output File: C:\SEVIEW63\GUTERL\SESOIL2\A1035.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	0.000E+00	0.00
In Soil Air	0.000E+00	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	1.482E+05	0.00
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	5.798E+01	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	2.706E+10	98.89
Total Output	2.706E+10	98.89
Total Input	2.737E+10	
Input - Output	3.030E+08	

Maximum leachate concentration: 7.733E-02 **mg/l**

Climate File: LOCKPORT 2 NE
C:\SEVIEW63\GUTERL\SESOIL2\LOCKPOR2.CLM

Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM

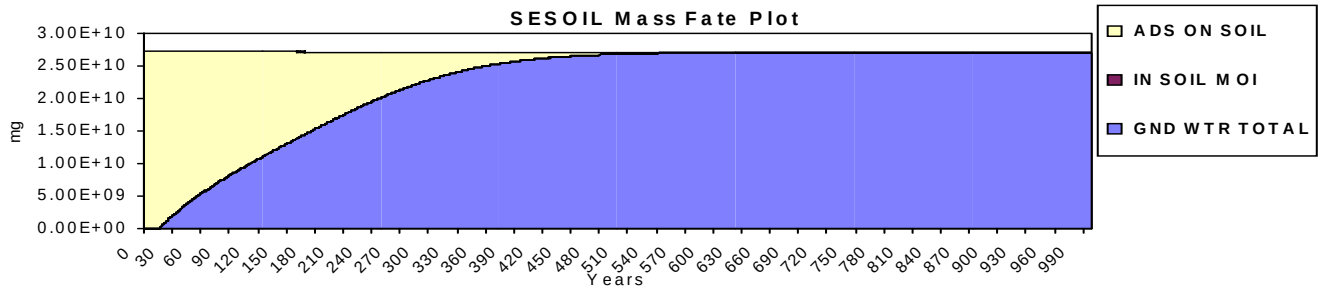
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI

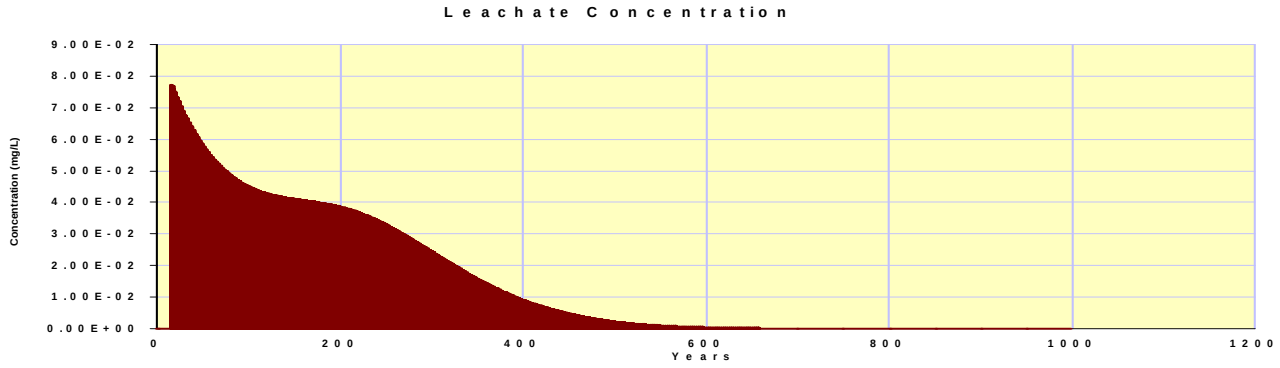
Application File: Soil Area 1
C:\SEVIEW63\GUTERL\SESOIL2\A1035.APL

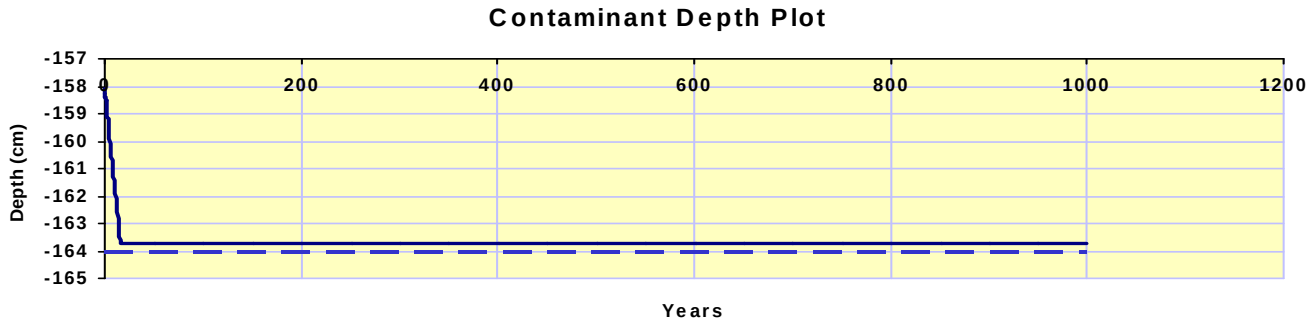
Starting Depth: 158.10 **cm**

Ending Depth: 163.70 **cm**

Total Depth: 163.70 **cm**







Attachment E – 2

SESOIL

SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability	Organic Carbon Content	Adsorption Coefficient	Cation Exchange Capacity	Freundlich Exponent	Solid Phase Degradation Rate	Liquid Phase Degradation Rate	Soil pH
		cm	feet	cm^2	percent	$\frac{\mu g/g}{\mu g/mL}$	$\frac{mEq}{100\ g\ soil}$	unitless	1/day	1/day	pH
1	4	61.0	2.00	2.80E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	4	61.0	2.00	2.80E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	3	45.7	1.50	2.80E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4	1	8.9	0.29	2.80E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00

Soil Parameters

Bulk Density (g/cm^3)	1.30
Effective Porosity (fraction)	0.25
Soil Pore Disconnectedness	4.00

Application Parameters

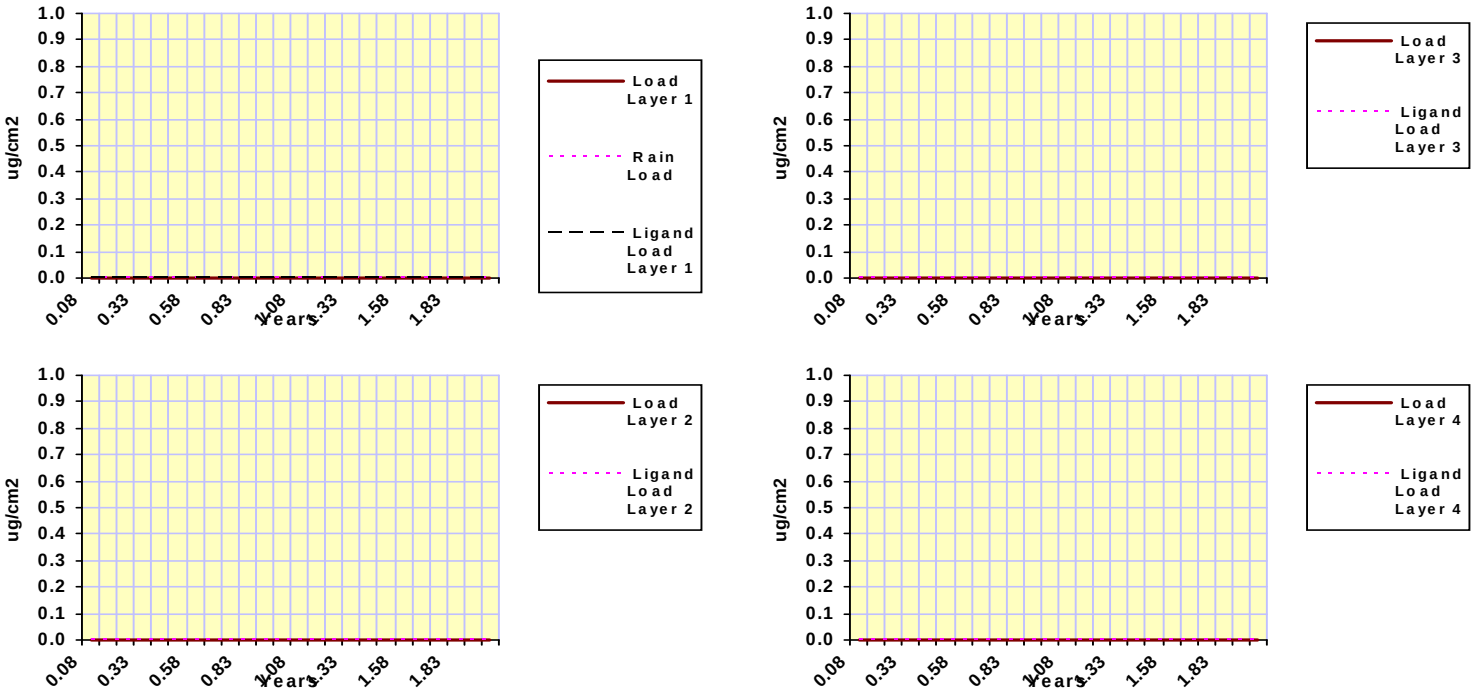
Area	cm^2	2.95E+8
	ft^2	3.17E+5
Latitude	degrees	43.2
Spill Index		1

Chemical Parameters

Water Solubility	(µg/mL)	100.0	**Moles Ligand / Moles Chemical**	0.00
Henry's Law	(M^3-atm/mol)	0.00	**Ligand Molecular Weight** (g/mol)	0.00
K_{oc}	(µg/g)/(µg/mL)	0.00	**Base Hydrolysis Rate** (L/mol/day)	0.00
Valance	(g/mole)	0.00	**Ligand Dissociation Constant**	0.00
Air Diffusion Coefficient	(cm^2/sec)	0.00	**Neutral Hydrolysis Rate** (L/mol/day)	0.00
Water Diffusion Coefficient	(cm^2/sec)	1.10E-6	**Acid Hydrolysis Rate** (L/mol/day)	0.00
Molecular Weight	(g/mol)	238.00		

Output File:
C:\SEVIEW63\GUTERL\SESOIL2\A2046.OUT
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI
Application File: Soil Area 2
C:\SEVIEW63\GUTERL\SESOIL2\A2046.APL

Sublayer Loads	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Layer 1 (ug/g)	2.20E+00	2.20E+00	2.20E+00	2.20E+00						
Layer 2 (ug/g)	2.20E+00	2.20E+00	2.20E+00	2.20E+00						
Layer 3 (ug/g)	2.20E+00	2.20E+00	2.20E+00							
Layer 4 (ug/g)	7.60E+00									



SESOIL Pollutant Cycle Report

Scenario Description:

SESOIL Output File: C:\SEVIEW63\GUTERL\SESOIL2\A2046.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	0.000E+00	0.00
In Soil Air	0.000E+00	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	1.114E+06	0.00
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	4.451E+02	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	1.653E+11	98.77
Total Output	1.653E+11	98.77
Total Input	1.674E+11	
Input - Output	2.064E+09	

Maximum leachate concentration: 9.554E-02 **mg/l**

Climate File: LOCKPORT 2 NE
C:\SEVIEW63\GUTERL\SESOIL2\LOCKPOR2.CLM

Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM

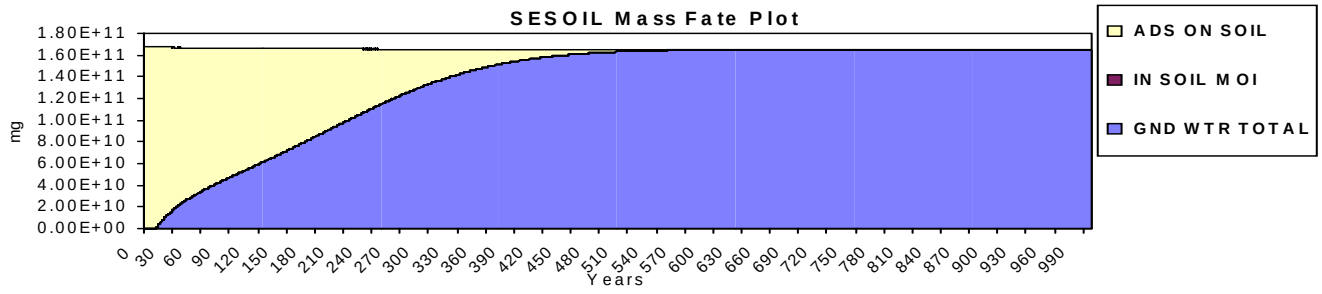
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI

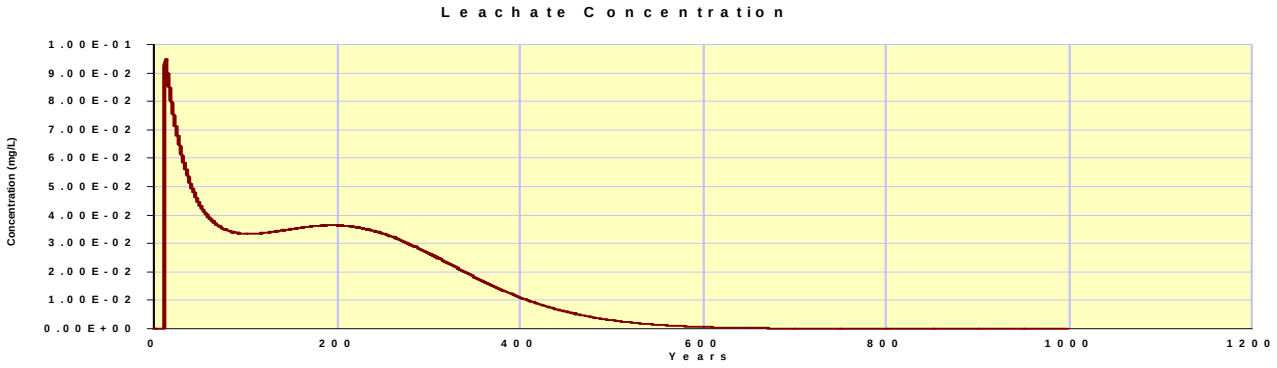
Application File: Soil Area 2
C:\SEVIEW63\GUTERL\SESOIL2\A2046.APL

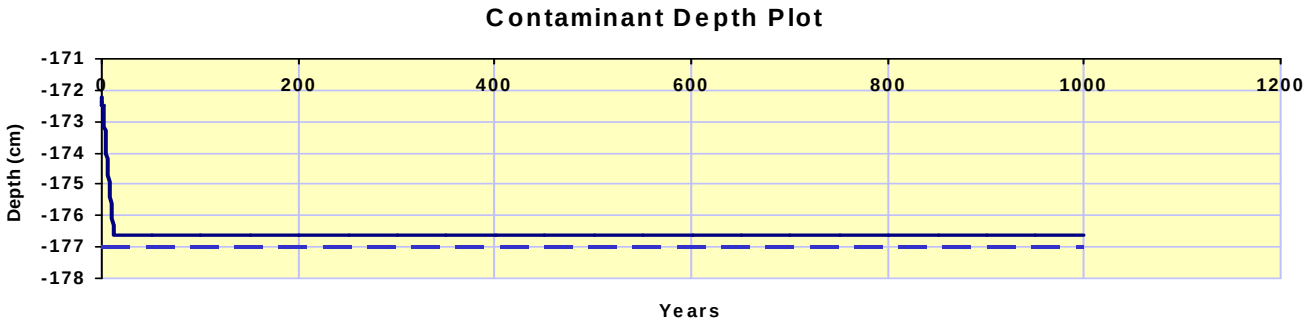
Starting Depth: 172.20 **cm**

Ending Depth: 176.60 **cm**

Total Depth: 176.60 **cm**







Attachment E – 3

SESOIL

SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability	Organic Carbon Content	Adsorption Coefficient	Cation Exchange Capacity	Freundlich Exponent	Solid Phase Degradation Rate	Liquid Phase Degradation Rate	Soil pH
		cm	feet	cm^2	percent	µg/g / µg/mL	mEq / 100 g soil	unitless	1/day	1/day	pH
1	4	61.0	2.00	5.20E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	4	61.0	2.00	5.20E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	1	15.1	0.50	5.20E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4		0.0	0.00	.0	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00

Soil Parameters

Bulk Density (g/cm^3)	1.30
Effective Porosity (fraction)	0.25
Soil Pore Disconnectedness	4.00

Application Parameters

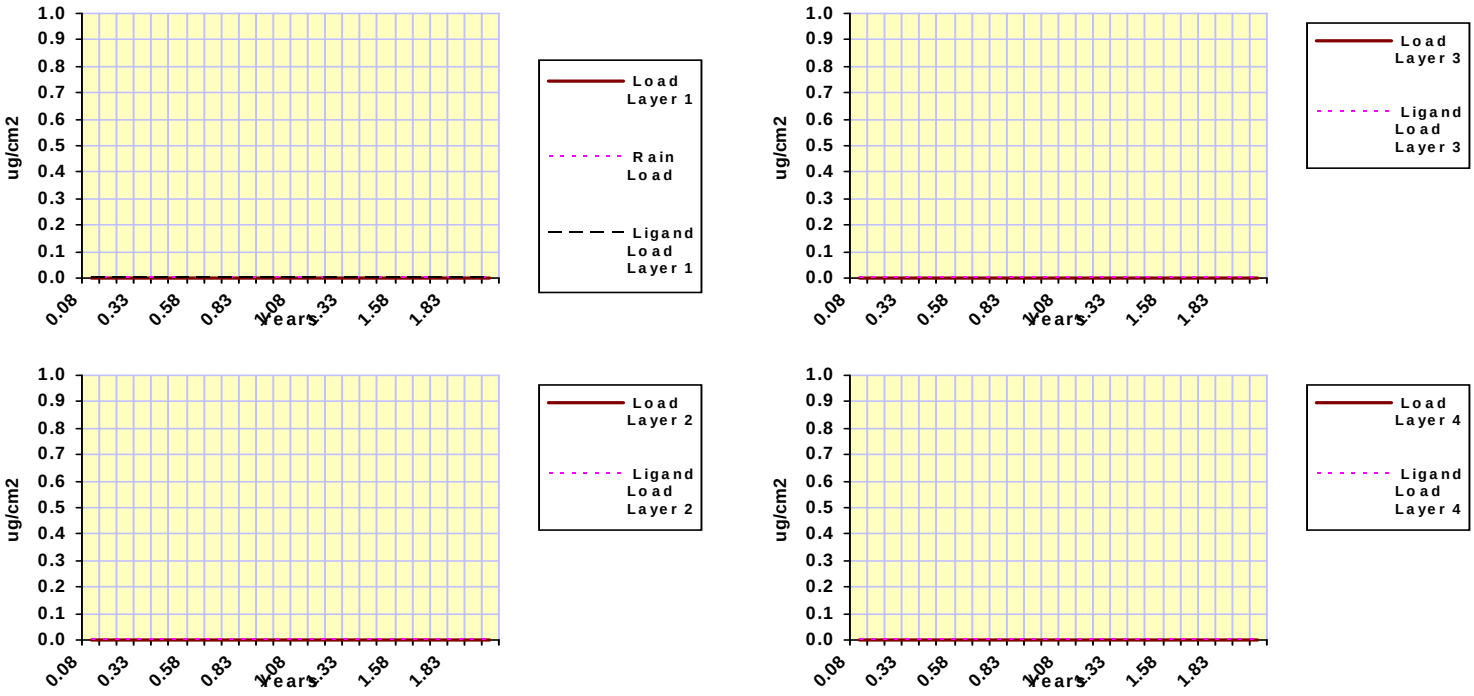
Area	cm^2	1.45E+8
	ft^2	1.56E+5
Latitude	degrees	43.2
Spill Index		1

Chemical Parameters

Water Solubility	(µg/mL)	100.0	**Moles Ligand / Moles Chemical**	0.00
Henry's Law	(M^3-atm/mol)	0.00	**Ligand Molecular Weight** (g/mol)	0.00
K_{oc}	(µg/g)/(µg/mL)	0.00	**Base Hydrolysis Rate** (L/mol/day)	0.00
Valance	(g/mole)	0.00	**Ligand Dissociation Constant**	0.00
Air Diffusion Coefficient	(cm^2/sec)	0.00	**Neutral Hydrolysis Rate** (L/mol/day)	0.00
Water Diffusion Coefficient	(cm^2/sec)	1.10E-6	**Acid Hydrolysis Rate** (L/mol/day)	0.00
Molecular Weight	(g/mol)	238.00		

Output File:
C:\SEVIEW63\GUTERL\SESOIL2\A3020.OUT
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI
Application File: Soil Area 3
C:\SEVIEW63\GUTERL\SESOIL2\A3020.APL

Sublayer Loads	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Layer 1 (ug/g)	2.22E+00	2.22E+00	2.22E+00	2.22E+00						
Layer 2 (ug/g)	2.22E+00	2.22E+00	2.22E+00	2.22E+00						
Layer 3 (ug/g)	1.20E+00									
Layer 4 (ug/g)										



SESOIL Pollutant Cycle Report

Scenario Description:

SESOIL Output File: C:\SEVIEW63\GUTERL\SESOIL2\A3020.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	0.000E+00	0.00
In Soil Air	0.000E+00	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	3.162E+05	0.00
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	1.109E+02	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	5.380E+10	98.77
Total Output	5.380E+10	98.77
Total Input	5.447E+10	
Input - Output	6.682E+08	

Maximum leachate concentration: 3.579E-02 **mg/l**

Climate File: LOCKPORT 2 NE
C:\SEVIEW63\GUTERL\SESOIL2\LOCKPOR2.CLM

Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM

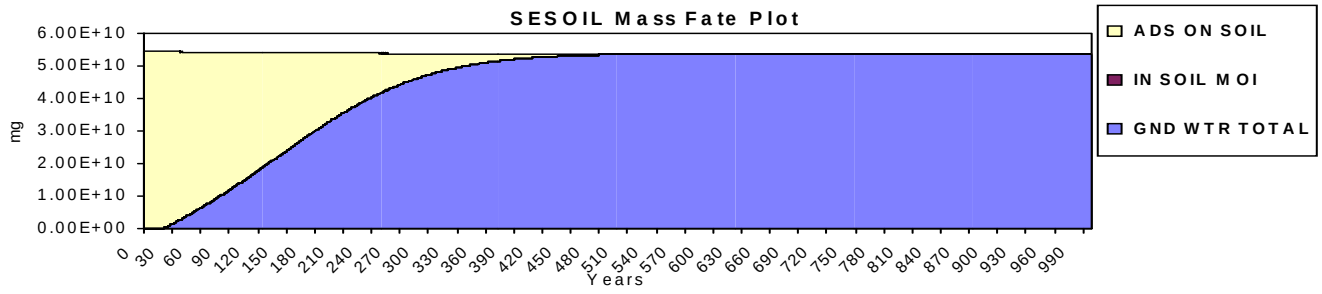
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI

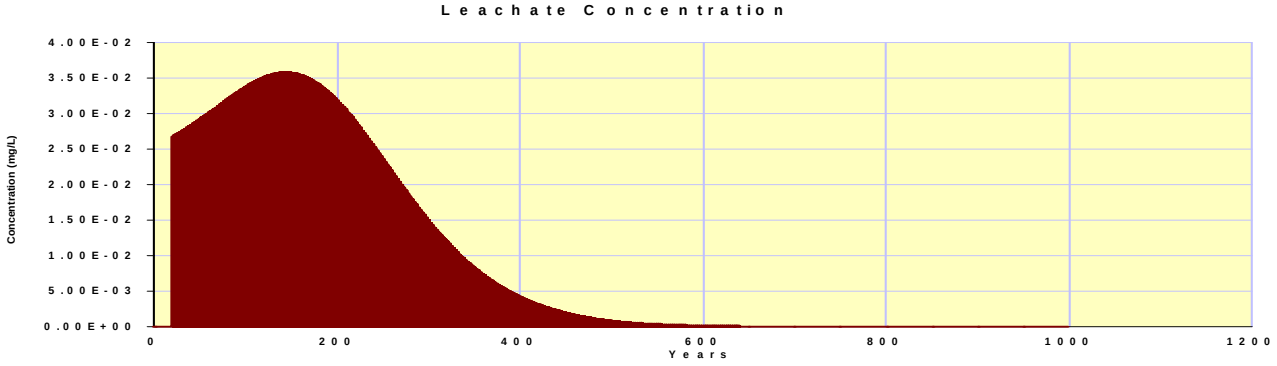
Application File: Soil Area 3
C:\SEVIEW63\GUTERL\SESOIL2\A3020.APL

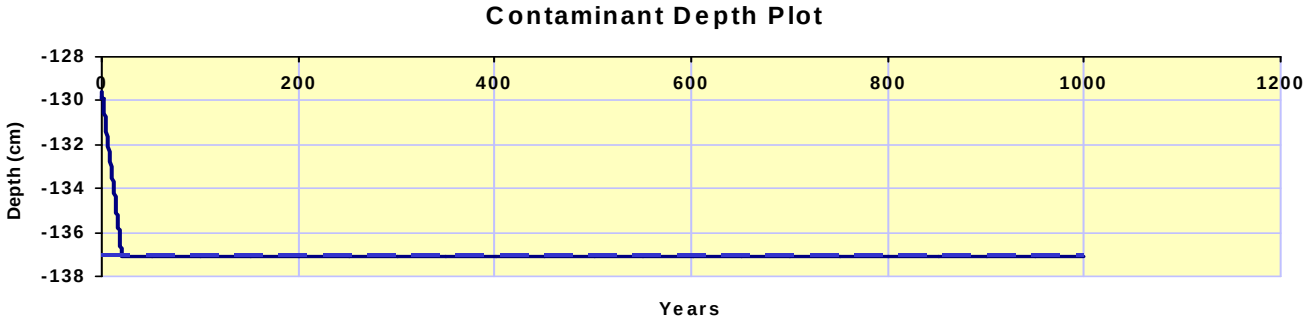
Starting Depth: 129.60 **cm**

Ending Depth: 137.10 **cm**

Total Depth: 137.10 **cm**







Attachment E – 4

SESOIL

SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability	Organic Carbon Content	Adsorption Coefficient	Cation Exchange Capacity	Freundlich Exponent	Solid Phase Degradation Rate	Liquid Phase Degradation Rate	Soil pH
		cm	feet	cm^2	percent	µg/g / µg/mL	mEq / 100 g soil	unitless	1/day	1/day	pH
1	4	61.0	2.00	5.70E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	4	61.0	2.00	5.70E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	1	10.1	0.33	5.70E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4		0.0	0.00	.0	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00

Soil Parameters

Bulk Density (g/cm^3)	1.30
Effective Porosity (fraction)	0.25
Soil Pore Disconnectedness	4.00

Application Parameters

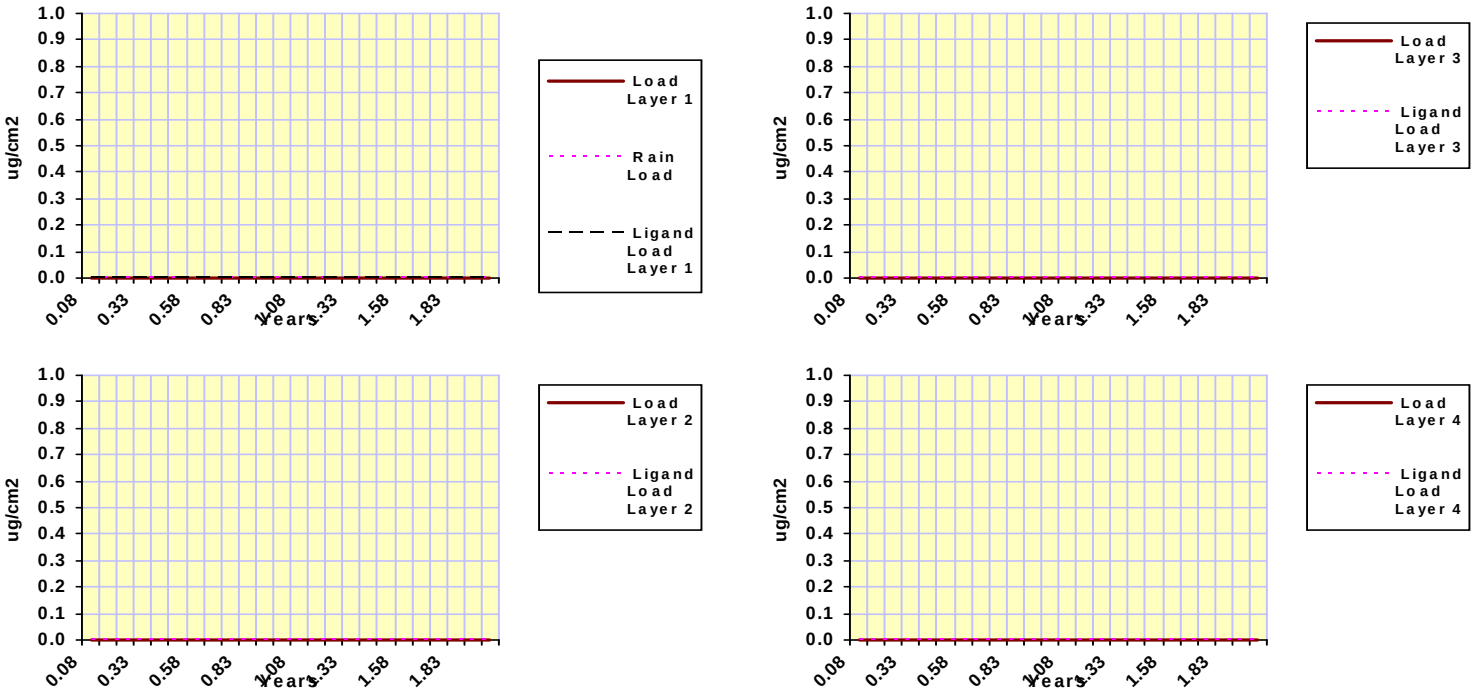
Area	cm^2	4.25E+8
	ft^2	4.57E+5
Latitude	degrees	43.2
Spill Index		1

Chemical Parameters

Water Solubility	(µg/mL)	100.0	**Moles Ligand / Moles Chemical**	0.00
Henry's Law	(M^3-atm/mol)	0.00	**Ligand Molecular Weight** (g/mol)	0.00
K_{oc}	(µg/g)/(µg/mL)	0.00	**Base Hydrolysis Rate** (L/mol/day)	0.00
Valance	(g/mole)	0.00	**Ligand Dissociation Constant**	0.00
Air Diffusion Coefficient	(cm^2/sec)	0.00	**Neutral Hydrolysis Rate** (L/mol/day)	0.00
Water Diffusion Coefficient	(cm^2/sec)	1.10E-6	**Acid Hydrolysis Rate** (L/mol/day)	0.00
Molecular Weight	(g/mol)	238.00		

Output File:
C:\SEVIEW63\GUTERL\SESOIL2\A4015.OUT
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI
Application File: Soil Area 4
C:\SEVIEW63\GUTERL\SESOIL2\A4015.APL

Sublayer Loads	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Layer 1 (ug/g)	2.22E+00	2.22E+00	2.22E+00	2.22E+00						
Layer 2 (ug/g)	2.22E+00	2.22E+00	2.22E+00	2.22E+00						
Layer 3 (ug/g)	2.22E+00									
Layer 4 (ug/g)										



SESOIL Pollutant Cycle Report

Scenario Description:

SESOIL Output File: C:\SEVIEW63\GUTERL\SESOIL2\A4015.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	0.000E+00	0.00
In Soil Air	0.000E+00	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	8.488E+05	0.00
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	2.906E+02	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	1.602E+11	98.89
Total Output	1.602E+11	98.89
Total Input	1.620E+11	
Input - Output	1.796E+09	

Maximum leachate concentration: 3.751E-02 **mg/l**

Climate File: LOCKPORT 2 NE
C:\SEVIEW63\GUTERL\SESOIL2\LOCKPOR2.CLM

Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM

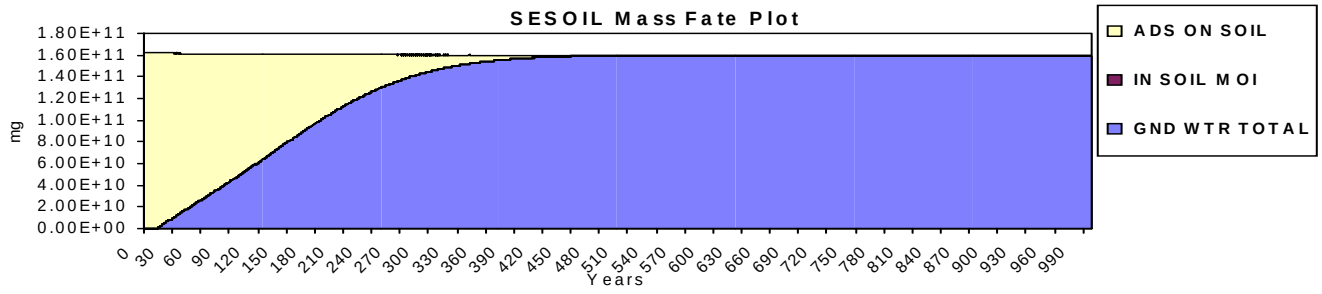
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI

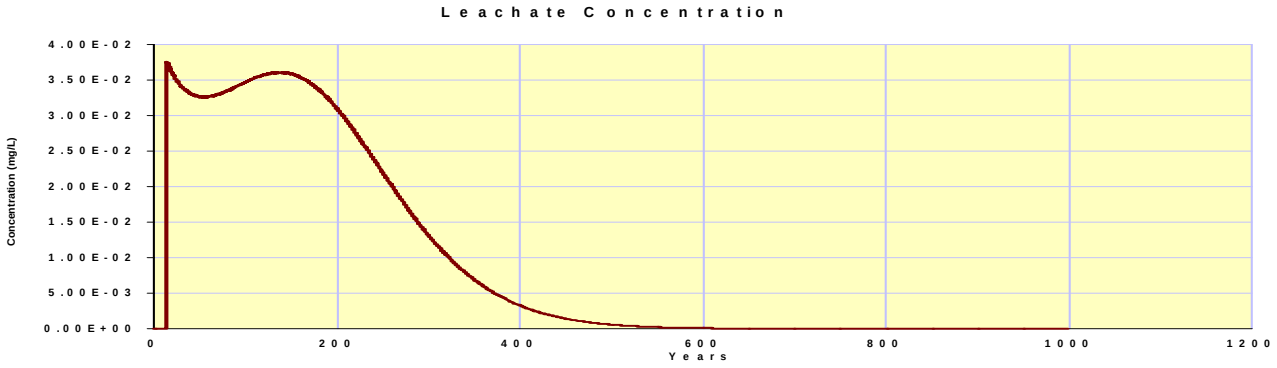
Application File: Soil Area 4
C:\SEVIEW63\GUTERL\SESOIL2\A4015.APL

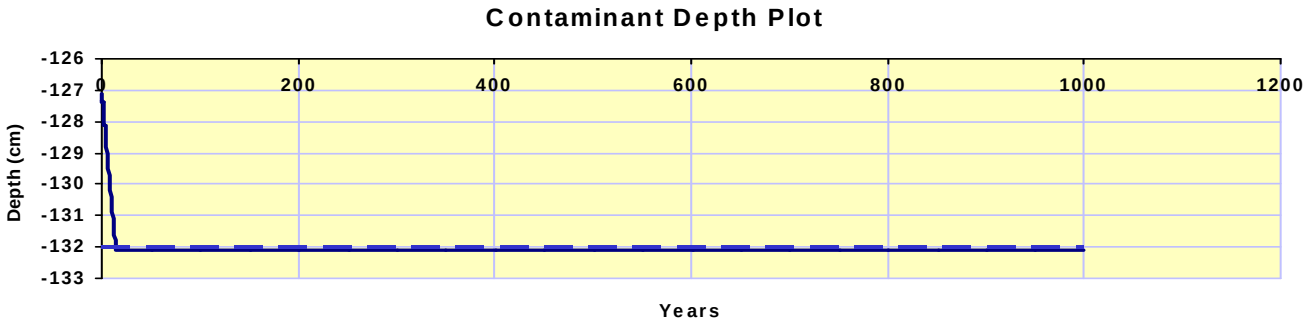
Starting Depth: 127.10 **cm**

Ending Depth: 132.10 **cm**

Total Depth: 132.10 **cm**







Attachment E – 5

SESOIL

SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability	Organic Carbon Content	Adsorption Coefficient	Cation Exchange Capacity	Freundlich Exponent	Solid Phase Degradation Rate	Liquid Phase Degradation Rate	Soil pH
		cm	feet	cm^2	percent	µg/g / µg/mL	mEq / 100 g soil	unitless	1/day	1/day	pH
1	4	61.0	2.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	4	61.0	2.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	2	30.5	1.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4	1	11.6	0.38	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00

Soil Parameters

Bulk Density (g/cm^3)	1.30
Effective Porosity (fraction)	0.25
Soil Pore Disconnectedness	4.00

Application Parameters

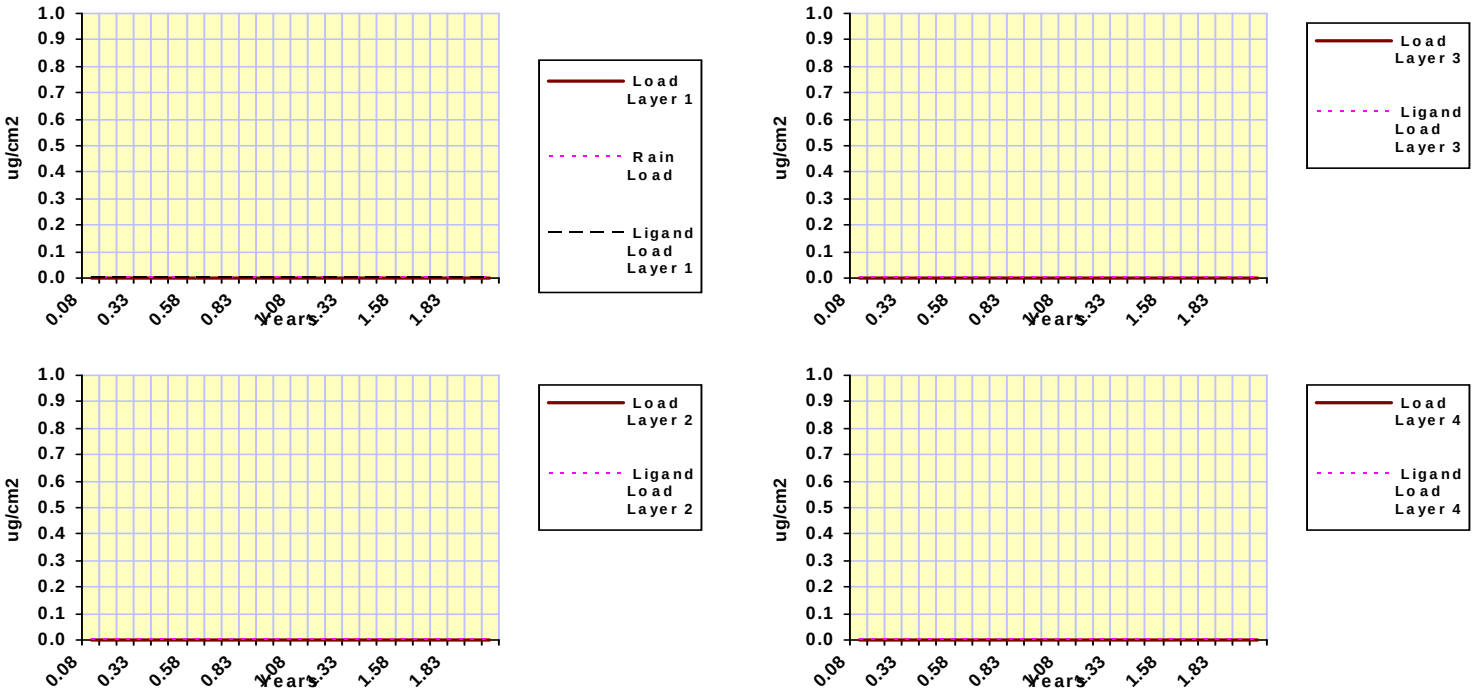
Area	cm^2	7.02E+7
	ft^2	7.55E+4
Latitude	degrees	43.2
Spill Index		1

Chemical Parameters

Water Solubility	(µg/mL)	100.0	**Moles Ligand / Moles Chemical**	0.00
Henry's Law	(M^3-atm/mol)	0.00	**Ligand Molecular Weight** (g/mol)	0.00
K_{oc}	(µg/g)/(µg/mL)	0.00	**Base Hydrolysis Rate** (L/mol/day)	0.00
Valance	(g/mole)	0.00	**Ligand Dissociation Constant**	0.00
Air Diffusion Coefficient	(cm^2/sec)	0.00	**Neutral Hydrolysis Rate** (L/mol/day)	0.00
Water Diffusion Coefficient	(cm^2/sec)	1.10E-6	**Acid Hydrolysis Rate** (L/mol/day)	0.00
Molecular Weight	(g/mol)	238.00		

Output File:
C:\SEVIEW63\GUTERL\SESOIL2\A5018.OUT
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI
Application File: Soil Area 5
C:\SEVIEW63\GUTERL\SESOIL2\A5018.APL

Sublayer Loads	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Layer 1 (ug/g)	2.22E+00	2.22E+00	2.22E+00	2.22E+00						
Layer 2 (ug/g)	2.22E+00	2.22E+00	2.22E+00	2.22E+00						
Layer 3 (ug/g)	2.22E+00	2.22E+00								
Layer 4 (ug/g)	2.22E+00									



SESOIL Pollutant Cycle Report

Scenario Description:

SESOIL Output File: C:\SEVIEW63\GUTERL\SESOIL2\A5018.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	0.000E+00	0.00
In Soil Air	0.000E+00	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	2.188E+05	0.00
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	8.561E+01	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	3.280E+10	98.65
Total Output	3.280E+10	98.65
Total Input	3.325E+10	
Input - Output	4.476E+08	

Maximum leachate concentration: 3.746E-02 **mg/l**

Climate File: LOCKPORT 2 NE
C:\SEVIEW63\GUTERL\SESOIL2\LOCKPOR2.CLM

Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM

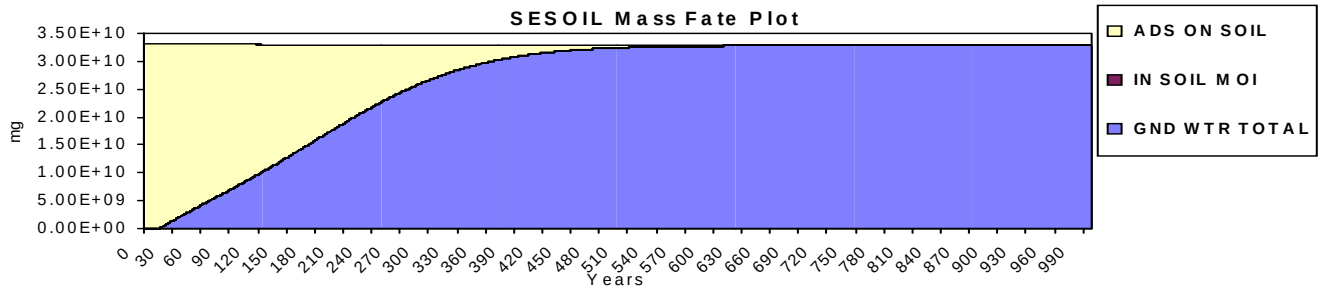
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI

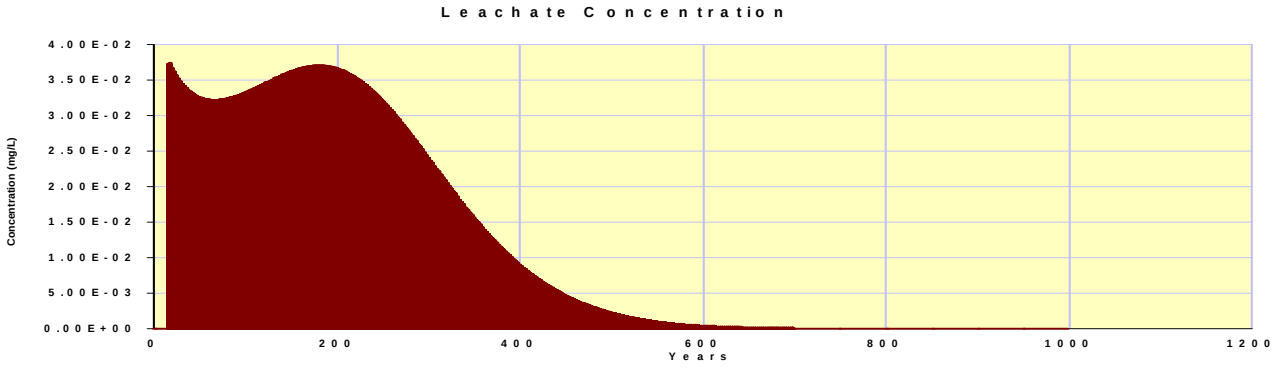
Application File: Soil Area 5
C:\SEVIEW63\GUTERL\SESOIL2\A5018.APL

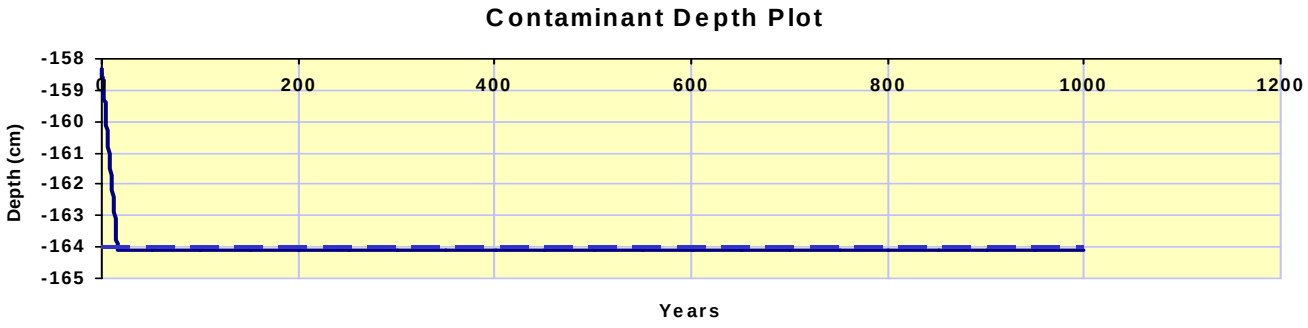
Starting Depth: 158.30 **cm**

Ending Depth: 164.10 **cm**

Total Depth: 164.10 **cm**







Attachment F – 1

SESOIL

SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability	Organic Carbon Content	Adsorption Coefficient	Cation Exchange Capacity	Freundlich Exponent	Solid Phase Degradation Rate	Liquid Phase Degradation Rate	Soil pH
		cm	feet	cm^2	percent	µg/g / µg/mL	mEq / 100 g soil	unitless	1/day	1/day	pH
1	4	61.0	2.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	4	61.0	2.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	2	30.5	1.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4	1	11.2	0.37	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00

Soil Parameters

Bulk Density (g/cm^3)	1.30
Effective Porosity (fraction)	0.25
Soil Pore Disconnectedness	4.00

Application Parameters

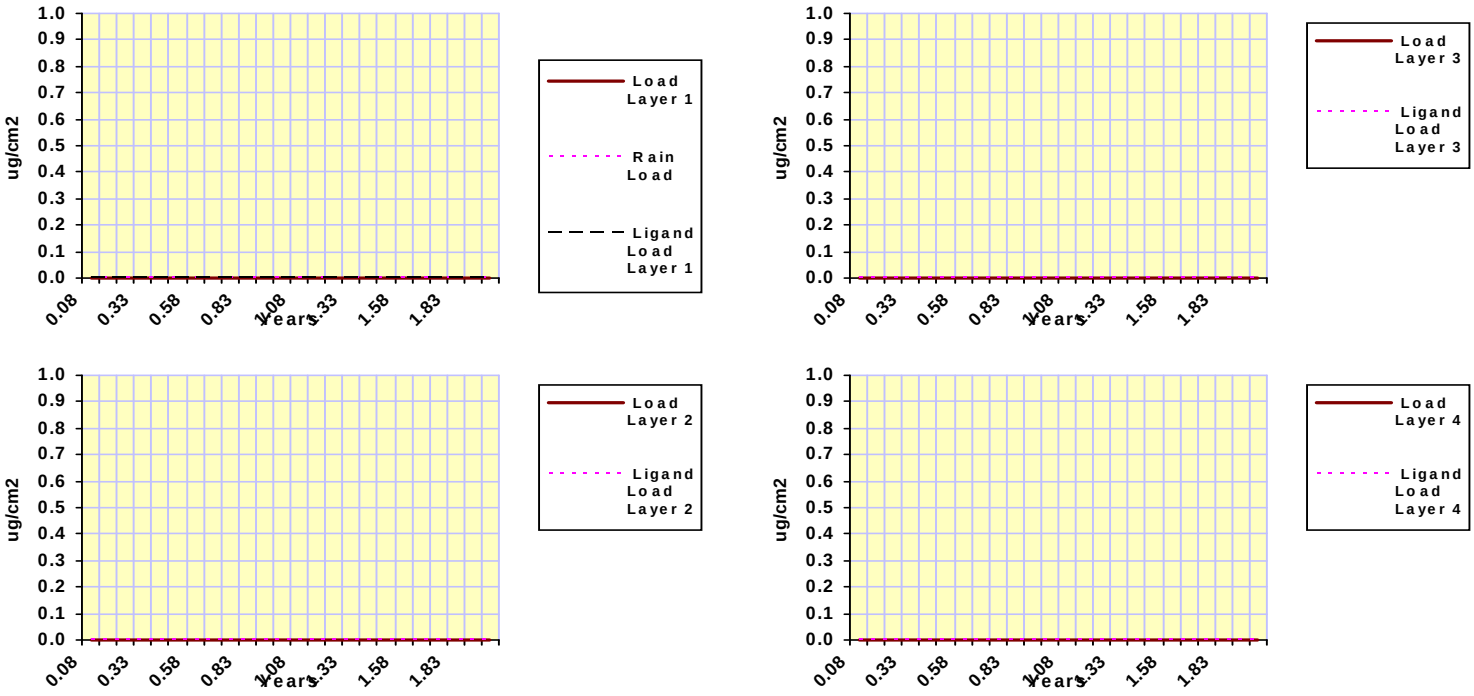
Area	cm^2	4.75E+7
	ft^2	5.11E+4
Latitude	degrees	43.2
Spill Index		1

Chemical Parameters

Water Solubility	(µg/mL)	100.0	**Moles Ligand / Moles Chemical**	0.00
Henry's Law	(M^3-atm/mol)	0.00	**Ligand Molecular Weight** (g/mol)	0.00
K_{oc}	(µg/g)/(µg/mL)	0.00	**Base Hydrolysis Rate** (L/mol/day)	0.00
Valance	(g/mole)	0.00	**Ligand Dissociation Constant**	0.00
Air Diffusion Coefficient	(cm^2/sec)	0.00	**Neutral Hydrolysis Rate** (L/mol/day)	0.00
Water Diffusion Coefficient	(cm^2/sec)	1.10E-6	**Acid Hydrolysis Rate** (L/mol/day)	0.00
Molecular Weight	(g/mol)	238.00		

Output File:
C:\SEVIEW63\GUTERL\SESOIL2\A1052.OUT
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI
Application File: Soil Area 1
C:\SEVIEW63\GUTERL\SESOIL2\A1052.APL

Sublayer Loads	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Layer 1 (ug/g)	2.22E+00	2.22E+00	2.22E+00	2.22E+00						
Layer 2 (ug/g)	2.22E+00	2.22E+00	2.22E+00	2.03E+00						
Layer 3 (ug/g)	3.36E+00	4.69E+00								
Layer 4 (ug/g)	4.69E+00									



SESOIL Pollutant Cycle Report

Scenario Description:

SESOIL Output File: C:\SEVIEW63\GUTERL\SESOIL2\A1052.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	0.000E+00	0.00
In Soil Air	0.000E+00	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	1.482E+05	0.00
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	5.798E+01	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	2.706E+10	98.89
Total Output	2.706E+10	98.89
Total Input	2.737E+10	
Input - Output	3.030E+08	

Maximum leachate concentration: 7.733E-02 **mg/l**

Climate File: LOCKPORT 2 NE
C:\SEVIEW63\GUTERL\SESOIL2\LOCKPOR2.CLM

Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM

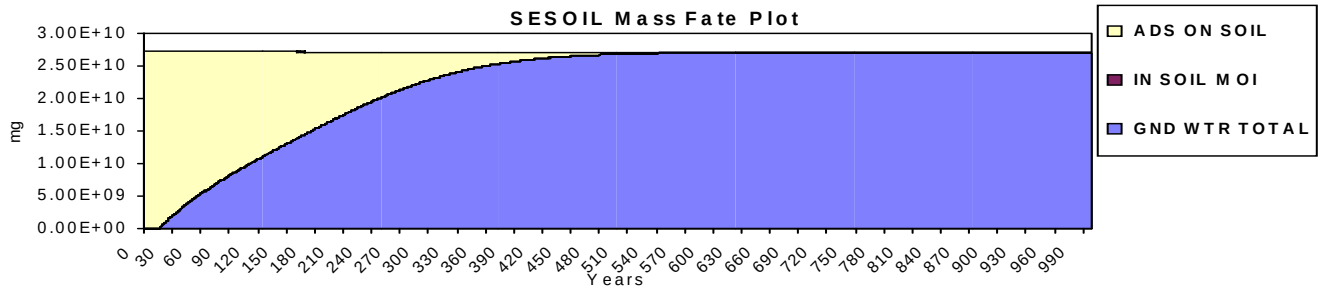
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI

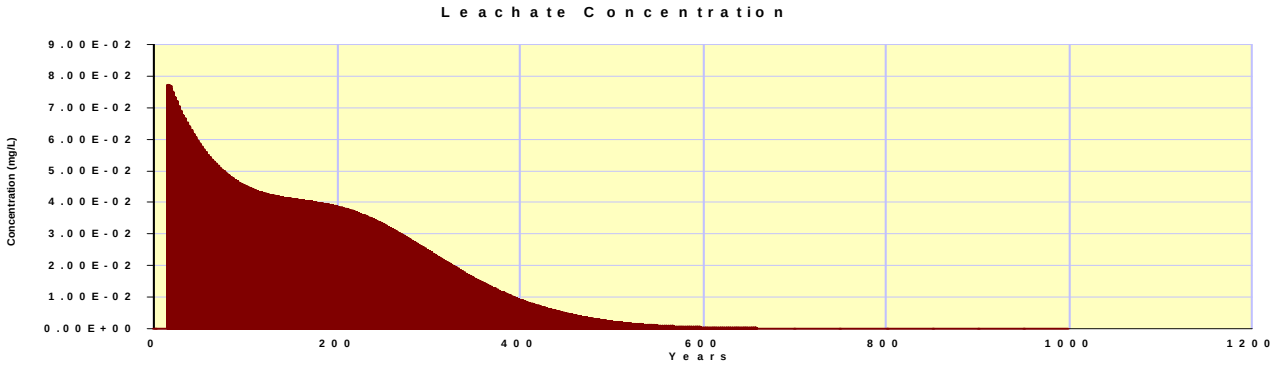
Application File: Soil Area 1
C:\SEVIEW63\GUTERL\SESOIL2\A1052.APL

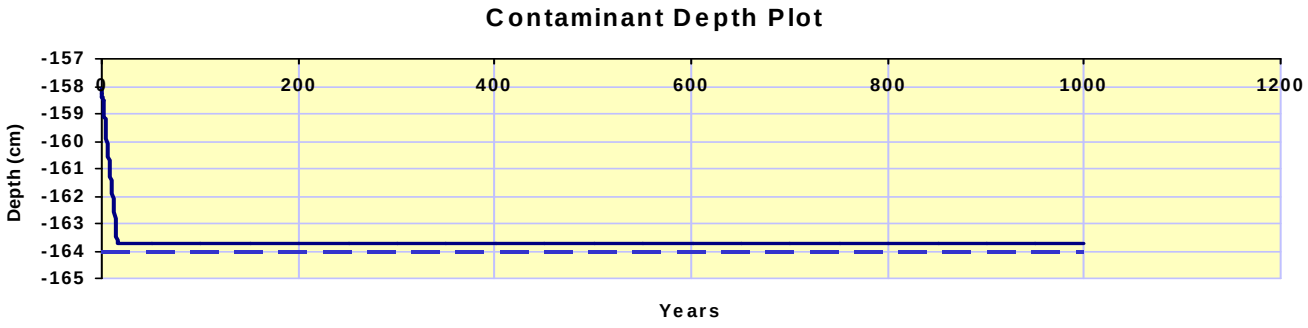
Starting Depth: 158.10 **cm**

Ending Depth: 163.70 **cm**

Total Depth: 163.70 **cm**







Attachment F – 2

SESOIL

SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability	Organic Carbon Content	Adsorption Coefficient	Cation Exchange Capacity	Freundlich Exponent	Solid Phase Degradation Rate	Liquid Phase Degradation Rate	Soil pH
		cm	feet	cm^2	percent	µg/g / µg/mL	mEq / 100 g soil	unitless	1/day	1/day	pH
1	4	61.0	2.00	2.80E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	4	61.0	2.00	2.80E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	3	45.7	1.50	2.80E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4	1	8.9	0.29	2.80E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00

Soil Parameters

Bulk Density (g/cm^3)	1.30
Effective Porosity (fraction)	0.25
Soil Pore Disconnectedness	4.00

Application Parameters

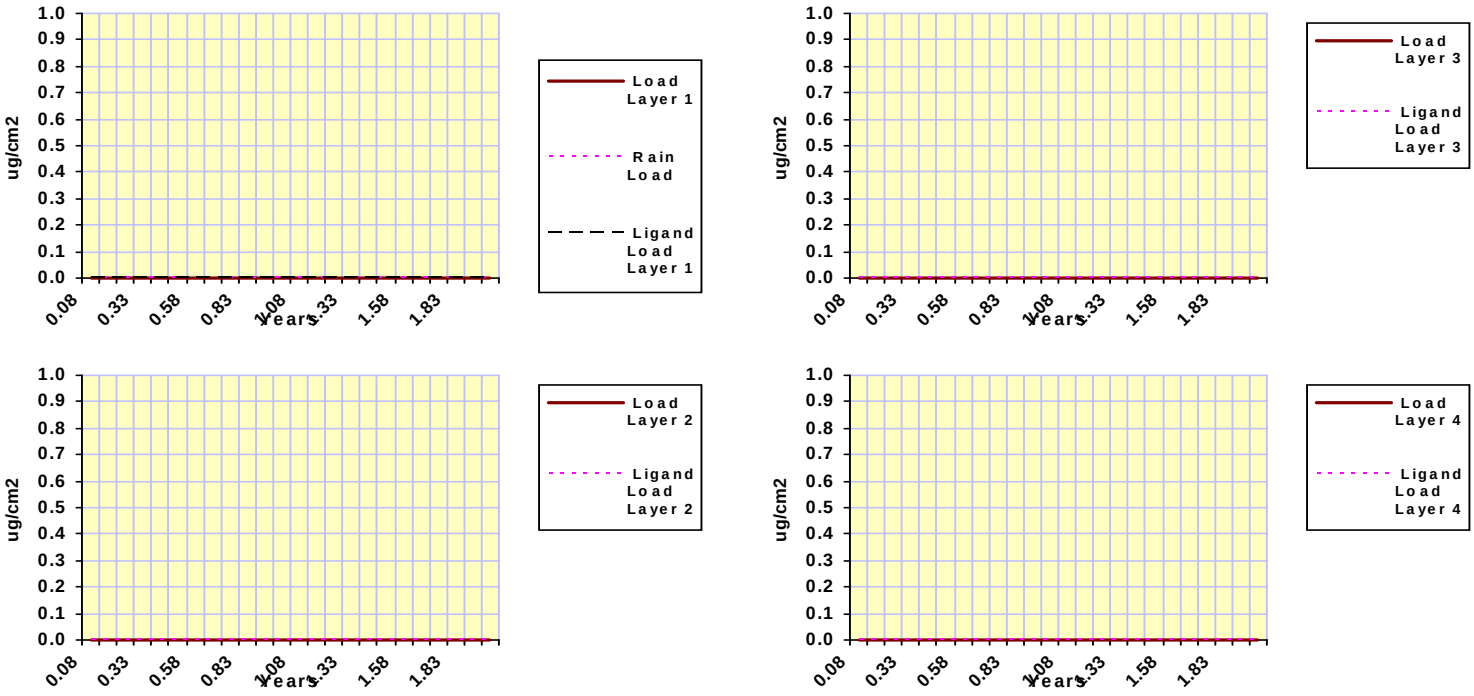
Area	cm^2	2.95E+8
	ft^2	3.17E+5
Latitude	degrees	43.2
Spill Index		1

Chemical Parameters

Water Solubility	(µg/mL)	100.0	**Moles Ligand / Moles Chemical**	0.00
Henry's Law	(M^3-atm/mol)	0.00	**Ligand Molecular Weight** (g/mol)	0.00
K_{oc}	(µg/g)/(µg/mL)	0.00	**Base Hydrolysis Rate** (L/mol/day)	0.00
Valance	(g/mole)	0.00	**Ligand Dissociation Constant**	0.00
Air Diffusion Coefficient	(cm^2/sec)	0.00	**Neutral Hydrolysis Rate** (L/mol/day)	0.00
Water Diffusion Coefficient	(cm^2/sec)	1.10E-6	**Acid Hydrolysis Rate** (L/mol/day)	0.00
Molecular Weight	(g/mol)	238.00		

Output File:
C:\SEVIEW63\GUTERL\SESOIL2\A2051.OUT
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI
Application File: Soil Area 2
C:\SEVIEW63\GUTERL\SESOIL2\A2051.APL

Sublayer Loads	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Layer 1 (ug/g)	2.22E+00	2.22E+00	2.22E+00	2.22E+00						
Layer 2 (ug/g)	2.22E+00	2.22E+00	2.22E+00	2.22E+00						
Layer 3 (ug/g)	2.22E+00	2.22E+00	4.30E+01							
Layer 4 (ug/g)	7.60E+00									



SESOIL Pollutant Cycle Report

Scenario Description:

SESOIL Output File: C:\SEVIEW63\GUTERL\SESOIL2\A2051.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	0.000E+00	0.00
In Soil Air	0.000E+00	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	1.115E+06	0.00
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	4.454E+02	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	4.036E+11	99.19
Total Output	4.037E+11	99.19
Total Input	4.070E+11	
Input - Output	3.298E+09	

Maximum leachate concentration: 3.098E-01 **mg/l**

Climate File: LOCKPORT 2 NE
C:\SEVIEW63\GUTERL\SESOIL2\LOCKPOR2.CLM

Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM

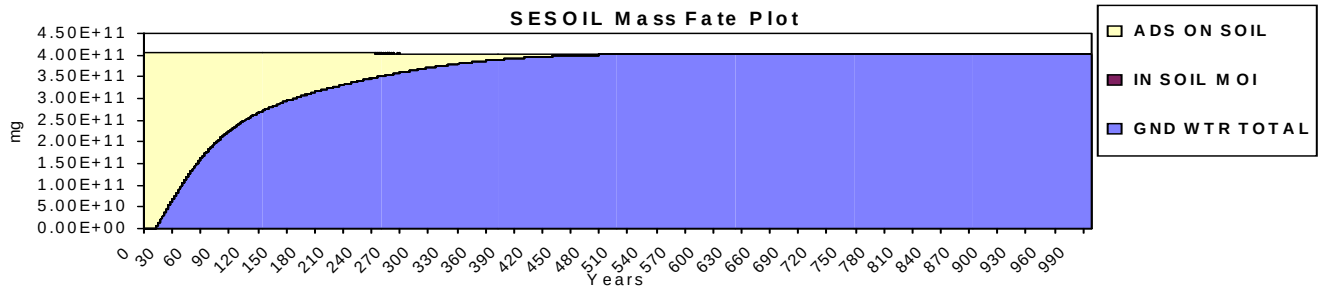
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI

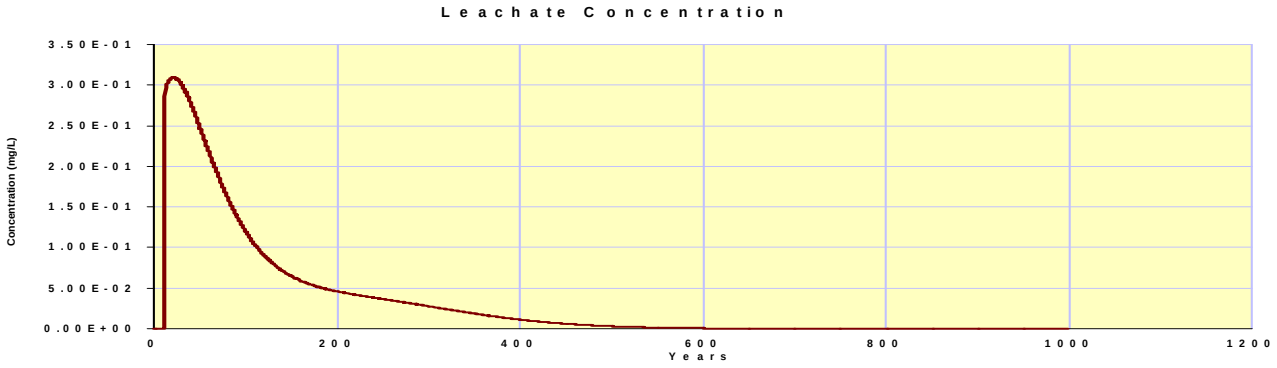
Application File: Soil Area 2
C:\SEVIEW63\GUTERL\SESOIL2\A2051.APL

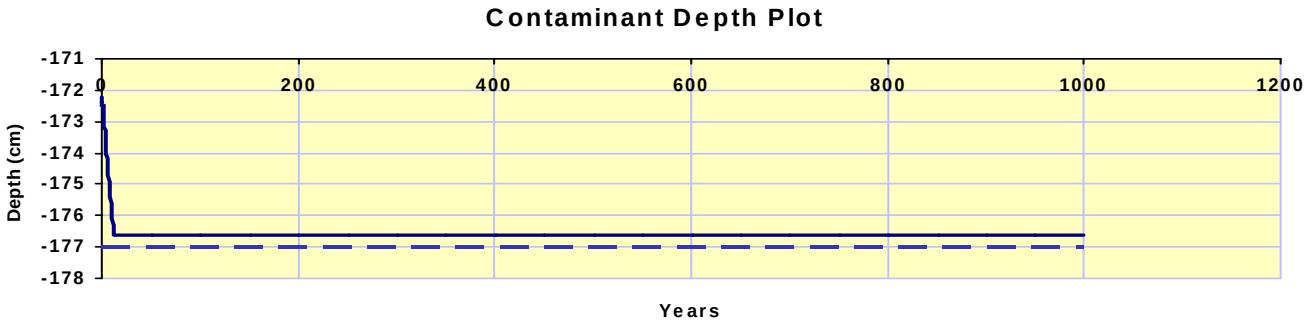
Starting Depth: 172.20 **cm**

Ending Depth: 176.60 **cm**

Total Depth: 176.60 **cm**







Attachment F – 3

SESOIL

SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability	Organic Carbon Content	Adsorption Coefficient	Cation Exchange Capacity	Freundlich Exponent	Solid Phase Degradation Rate	Liquid Phase Degradation Rate	Soil pH
		cm	feet	cm^2	percent	µg/g / µg/mL	mEq / 100 g soil	unitless	1/day	1/day	pH
1	4	61.0	2.00	5.20E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	4	61.0	2.00	5.20E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	1	15.1	0.50	5.20E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4		0.0	0.00	.0	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00

Soil Parameters

Bulk Density (g/cm^3)	1.30
Effective Porosity (fraction)	0.25
Soil Pore Disconnectedness	4.00

Application Parameters

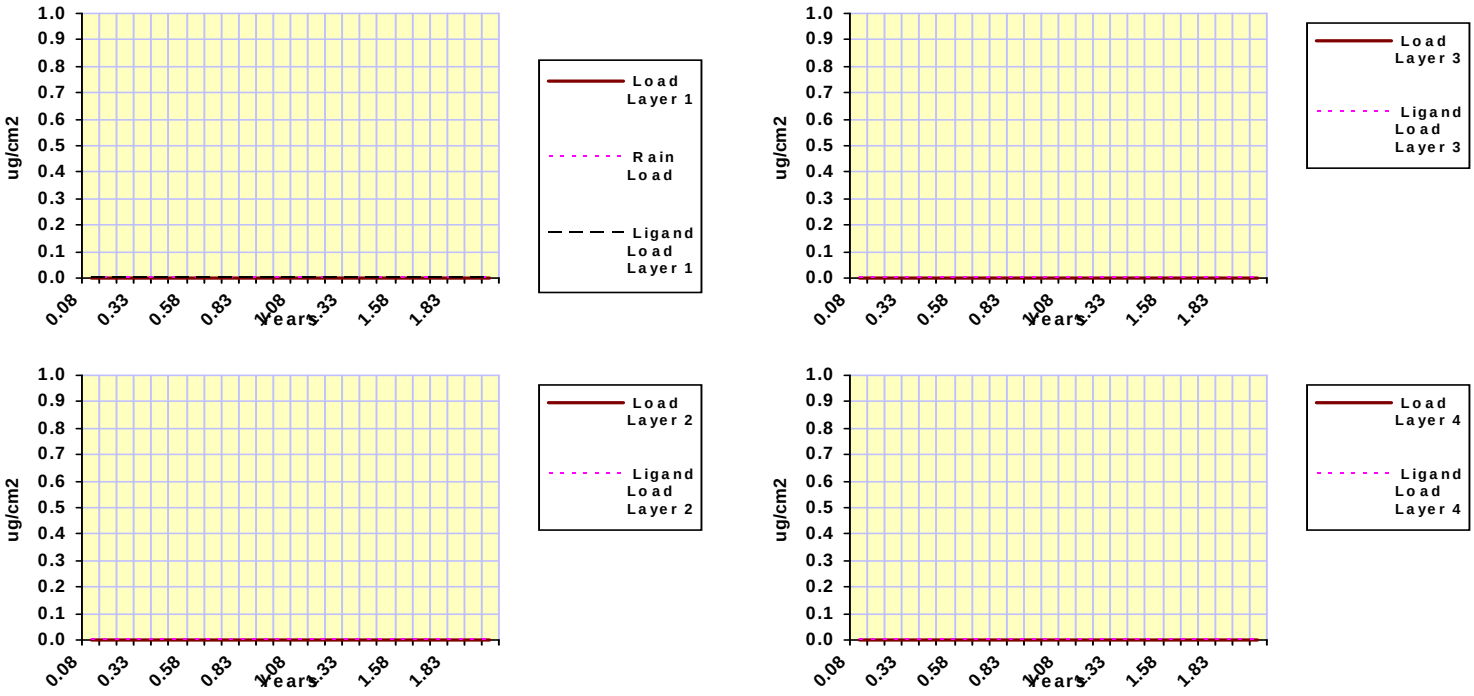
Area	cm^2	1.45E+8
	ft^2	1.56E+5
Latitude	degrees	43.2
Spill Index		1

Chemical Parameters

Water Solubility	(µg/mL)	100.0	**Moles Ligand / Moles Chemical**	0.00
Henry's Law	(M^3-atm/mol)	0.00	**Ligand Molecular Weight** (g/mol)	0.00
K_{oc}	(µg/g)/(µg/mL)	0.00	**Base Hydrolysis Rate** (L/mol/day)	0.00
Valance	(g/mole)	0.00	**Ligand Dissociation Constant**	0.00
Air Diffusion Coefficient	(cm^2/sec)	0.00	**Neutral Hydrolysis Rate** (L/mol/day)	0.00
Water Diffusion Coefficient	(cm^2/sec)	1.10E-6	**Acid Hydrolysis Rate** (L/mol/day)	0.00
Molecular Weight	(g/mol)	238.00		

Output File:
C:\SEVIEW63\GUTERL\SESOIL2\A3052.OUT
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI
Application File: Soil Area 3
C:\SEVIEW63\GUTERL\SESOIL2\A3052.APL

Sublayer Loads	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Layer 1 (ug/g)	2.22E+00	2.22E+00	2.22E+00	3.00E+01						
Layer 2 (ug/g)	4.04E+01	6.71E+01	3.41E+01	3.41E+01						
Layer 3 (ug/g)	3.41E+01									
Layer 4 (ug/g)										



SESOIL Pollutant Cycle Report

Scenario Description:

SESOIL Output File: C:\SEVIEW63\GUTERL\SESOIL2\A3052.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	0.000E+00	0.00
In Soil Air	0.000E+00	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	3.385E+05	0.00
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	1.187E+02	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	7.028E+11	99.31
Total Output	7.028E+11	99.31
Total Input	7.077E+11	
Input - Output	4.858E+09	

Maximum leachate concentration: 6.080E-01 **mg/l**

Climate File: LOCKPORT 2 NE
C:\SEVIEW63\GUTERL\SESOIL2\LOCKPOR2.CLM

Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM

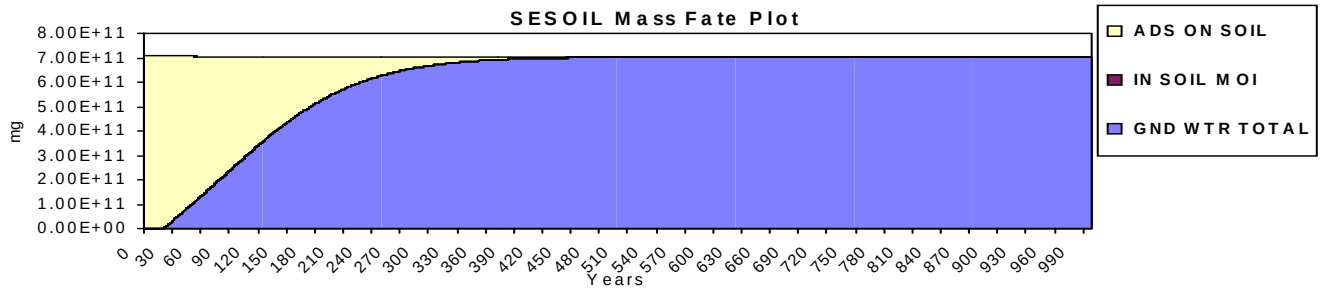
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI

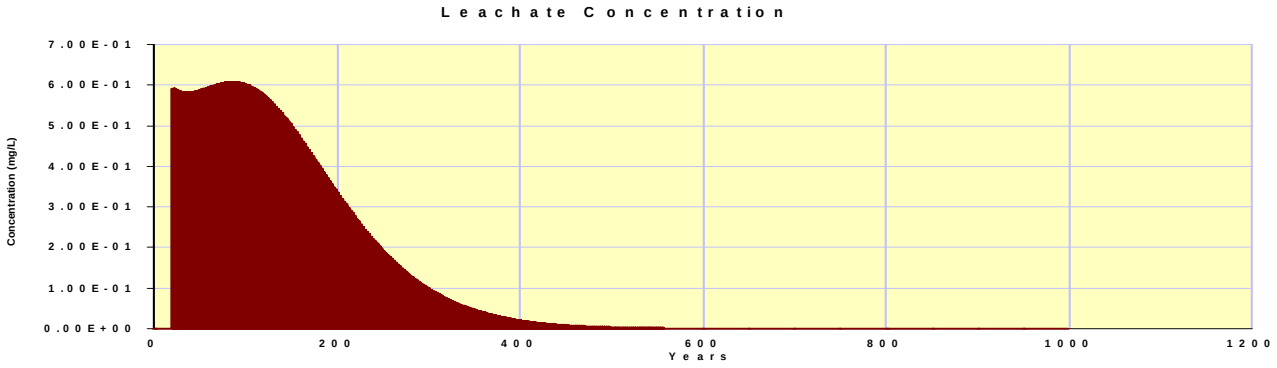
Application File: Soil Area 3
C:\SEVIEW63\GUTERL\SESOIL2\A3052.APL

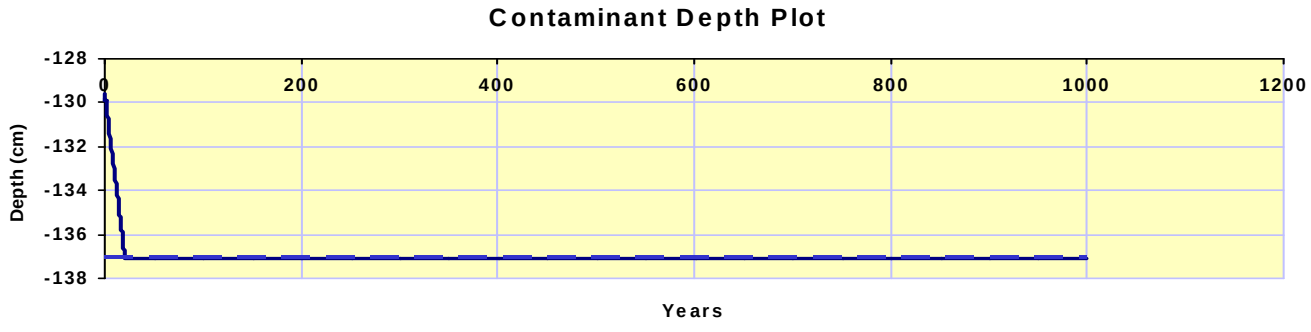
Starting Depth: 129.60 **cm**

Ending Depth: 137.10 **cm**

Total Depth: 137.10 **cm**







Attachment F – 4

SESOIL

SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability	Organic Carbon Content	Adsorption Coefficient	Cation Exchange Capacity	Freundlich Exponent	Solid Phase Degradation Rate	Liquid Phase Degradation Rate	Soil pH
		cm	feet	cm^2	percent	µg/g / µg/mL	mEq / 100 g soil	unitless	1/day	1/day	pH
1	4	61.0	2.00	5.70E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	4	61.0	2.00	5.70E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	1	10.1	0.33	5.70E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4		0.0	0.00	.0	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00

Soil Parameters

Bulk Density (g/cm^3)	1.30
Effective Porosity (fraction)	0.25
Soil Pore Disconnectedness	4.00

Application Parameters

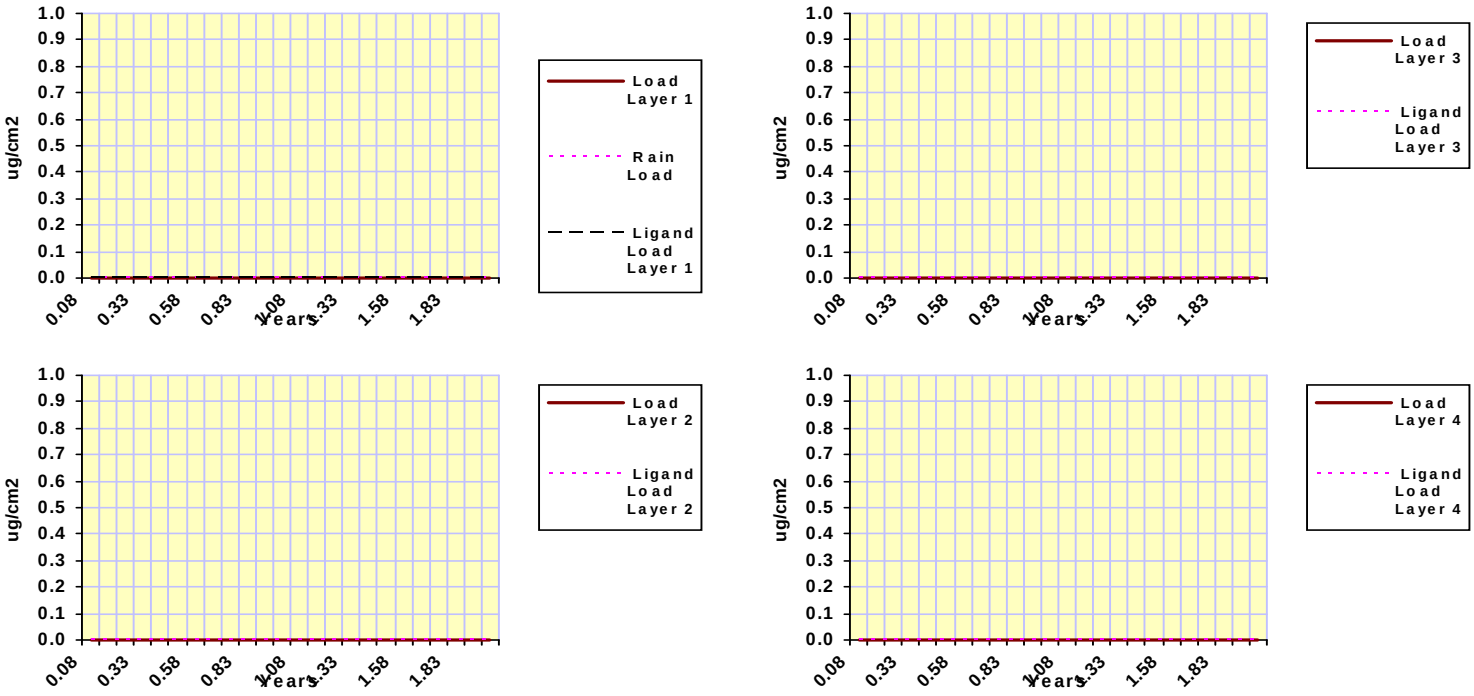
Area	cm^2	3.95E+8
	ft^2	4.25E+5
Latitude	degrees	43.2
Spill Index		1

Chemical Parameters

Water Solubility	(µg/mL)	100.0	**Moles Ligand / Moles Chemical**	0.00
Henry's Law	(M^3-atm/mol)	0.00	**Ligand Molecular Weight** (g/mol)	0.00
K_{oc}	(µg/g)/(µg/mL)	0.00	**Base Hydrolysis Rate** (L/mol/day)	0.00
Valance	(g/mole)	0.00	**Ligand Dissociation Constant**	0.00
Air Diffusion Coefficient	(cm^2/sec)	0.00	**Neutral Hydrolysis Rate** (L/mol/day)	0.00
Water Diffusion Coefficient	(cm^2/sec)	1.10E-6	**Acid Hydrolysis Rate** (L/mol/day)	0.00
Molecular Weight	(g/mol)	238.00		

Output File:
C:\SEVIEW63\GUTERL\SESOIL2\A4051.OUT
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI
Application File: Soil Area 4B
C:\SEVIEW63\GUTERL\SESOIL2\A4050.APL

Sublayer Loads	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Layer 1 (ug/g)	2.22E+00	2.22E+00	2.22E+00	2.22E+00						
Layer 2 (ug/g)	2.22E+00	2.22E+00	2.22E+00	2.22E+00						
Layer 3 (ug/g)	2.22E+00									
Layer 4 (ug/g)										



SESOIL Pollutant Cycle Report

Scenario Description:

SESOIL Output File: C:\SEVIEW63\GUTERL\SESOIL2\A4051.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	0.000E+00	0.00
In Soil Air	0.000E+00	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	7.889E+05	0.00
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	2.701E+02	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	1.488E+11	98.87
Total Output	1.488E+11	98.87
Total Input	1.506E+11	
Input - Output	1.704E+09	

Maximum leachate concentration: 3.751E-02 **mg/l**

Climate File: LOCKPORT 2 NE
C:\SEVIEW63\GUTERL\SESOIL2\LOCKPOR2.CLM

Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM

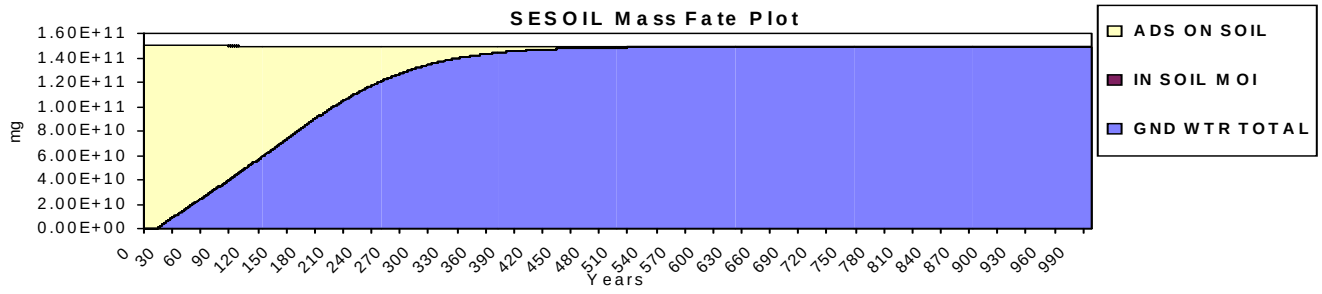
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI

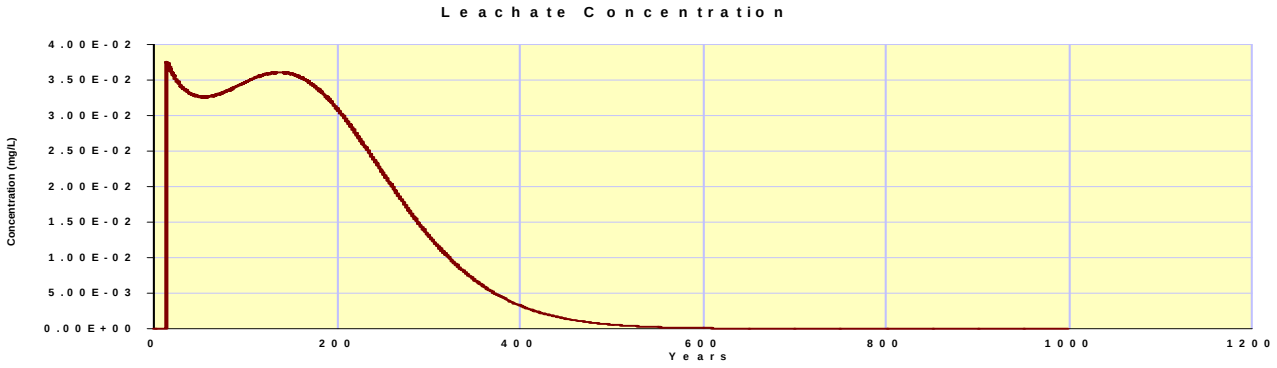
Application File: Soil Area 4B
C:\SEVIEW63\GUTERL\SESOIL2\A4050.APL

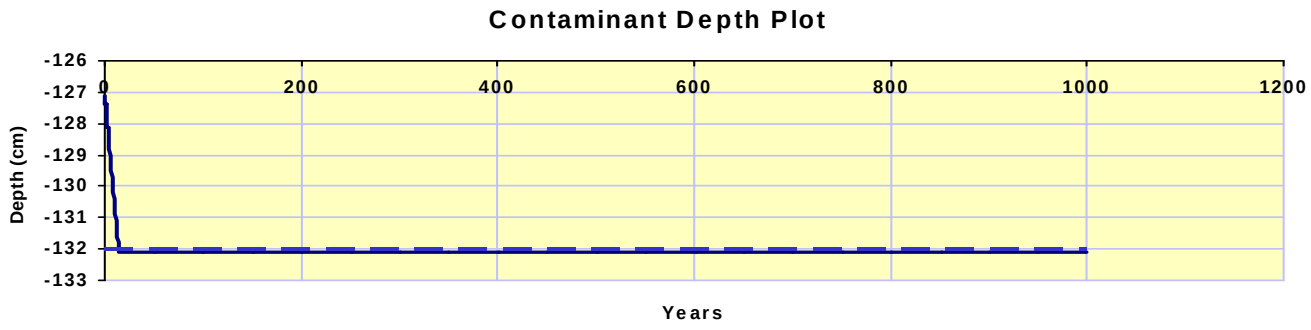
Starting Depth: 127.10 **cm**

Ending Depth: 132.10 **cm**

Total Depth: 132.10 **cm**







Attachment F – 5

SESOIL

SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability	Organic Carbon Content	Adsorption Coefficient	Cation Exchange Capacity	Freundlich Exponent	Solid Phase Degradation Rate	Liquid Phase Degradation Rate	Soil pH
		cm	feet	cm^2	percent	µg/g / µg/mL	mEq / 100 g soil	unitless	1/day	1/day	pH
1	4	61.0	2.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	4	61.0	2.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	2	30.5	1.00	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4	1	11.6	0.38	3.30E-8	0.00	91.00	0.00	1.00	0.00E+00	0.00E+00	7.00

Soil Parameters

Bulk Density (g/cm^3)	1.30
Effective Porosity (fraction)	0.25
Soil Pore Disconnectedness	4.00

Application Parameters

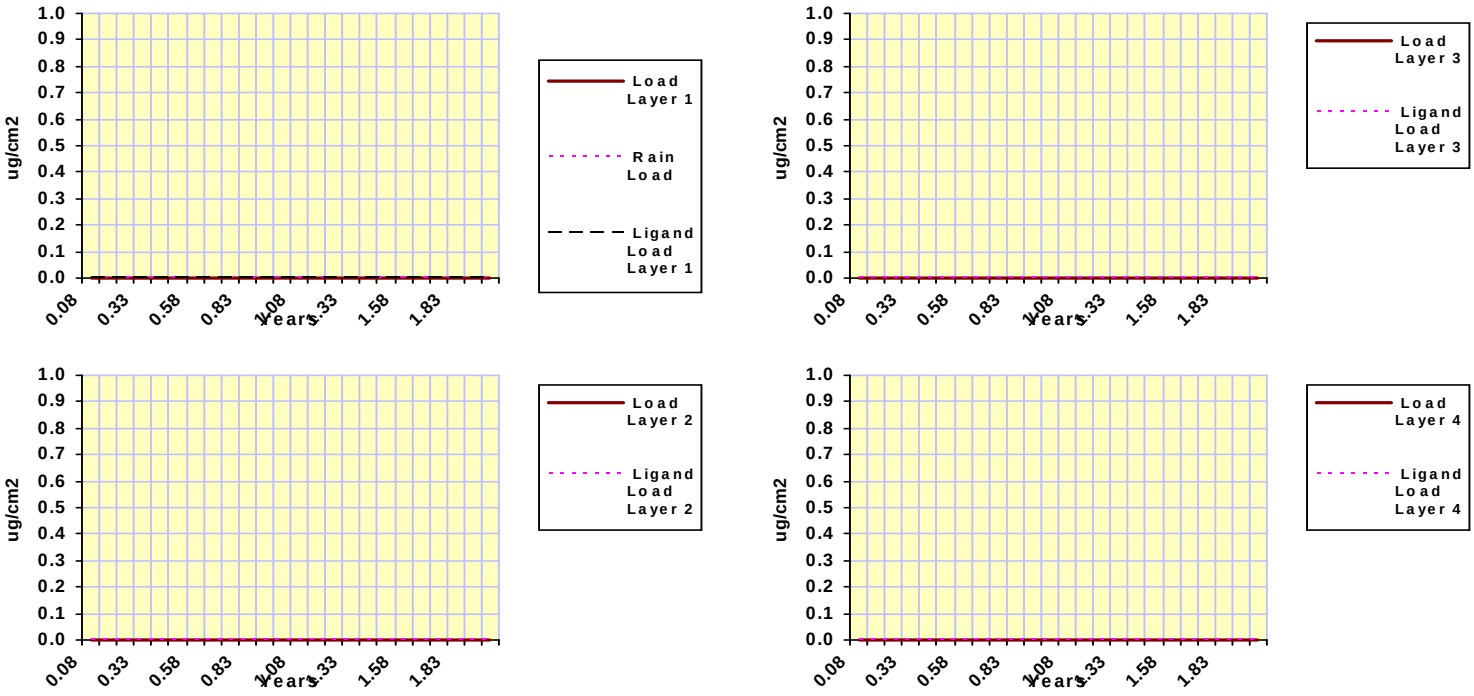
Area	cm^2	7.02E+7
	ft^2	7.55E+4
Latitude	degrees	43.2
Spill Index		1

Chemical Parameters

Water Solubility	(µg/mL)	100.0	**Moles Ligand / Moles Chemical**	0.00
Henry's Law	(M^3-atm/mol)	0.00	**Ligand Molecular Weight** (g/mol)	0.00
K_{oc}	(µg/g)/(µg/mL)	0.00	**Base Hydrolysis Rate** (L/mol/day)	0.00
Valance	(g/mole)	0.00	**Ligand Dissociation Constant**	0.00
Air Diffusion Coefficient	(cm^2/sec)	0.00	**Neutral Hydrolysis Rate** (L/mol/day)	0.00
Water Diffusion Coefficient	(cm^2/sec)	1.10E-6	**Acid Hydrolysis Rate** (L/mol/day)	0.00
Molecular Weight	(g/mol)	238.00		

Output File:
C:\SEVIEW63\GUTERL\SESOIL2\A5052.OUT
Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI
Application File: Soil Area 5
C:\SEVIEW63\GUTERL\SESOIL2\A5052.APL

Sublayer Loads	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Layer 1 (ug/g)	2.20E+01	5.03E+01	1.02E+01	1.60E+01						
Layer 2 (ug/g)	2.18E+01	8.95E+00	8.04E+00	8.04E+00						
Layer 3 (ug/g)	8.04E+00	8.04E+00								
Layer 4 (ug/g)	7.12E+00									



SESOIL Pollutant Cycle Report

Scenario Description:

SESOIL Output File: C:\SEVIEW63\GUTERL\SESOIL2\A5052.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	0.000E+00	0.00
In Soil Air	0.000E+00	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	4.002E+05	0.00
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	1.565E+02	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	2.277E+11	98.08
Total Output	2.277E+11	98.08
Total Input	2.322E+11	
Input - Output	4.456E+09	

Maximum leachate concentration: 2.854E-01 **mg/l**

Climate File: LOCKPORT 2 NE
C:\SEVIEW63\GUTERL\SESOIL2\LOCKPOR2.CLM

Chemical File: Uranium (U)
C:\SEVIEW63\GUTERL\SESOIL2\U91.CHM

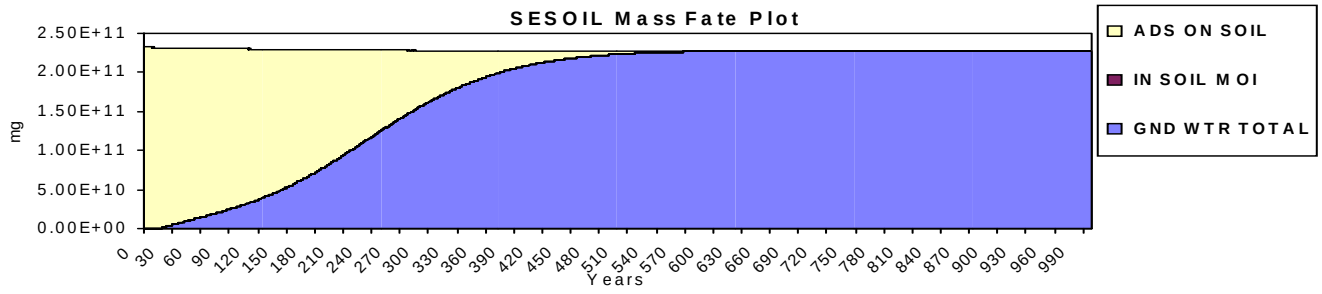
Soil File: Sand / Sandy Silt
C:\SEVIEW63\GUTERL\SESOIL2\SAND001.SOI

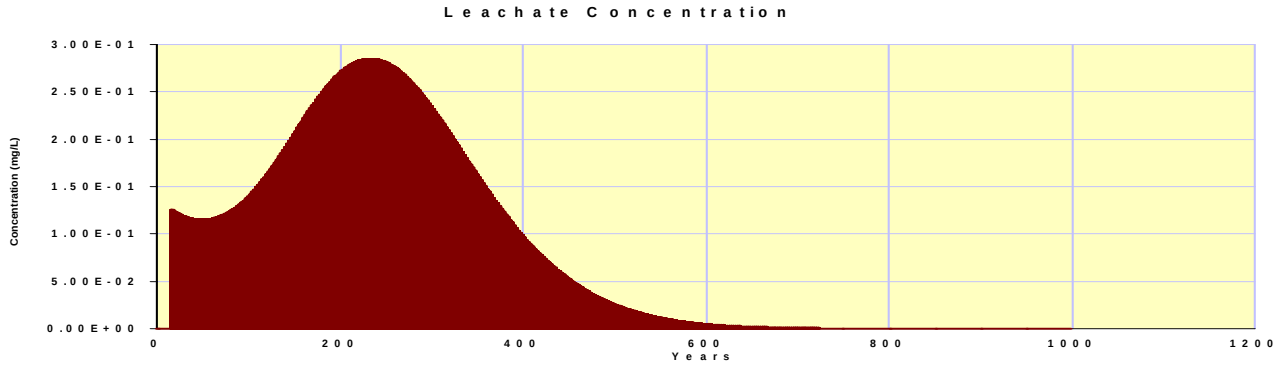
Application File: Soil Area 5
C:\SEVIEW63\GUTERL\SESOIL2\A5052.APL

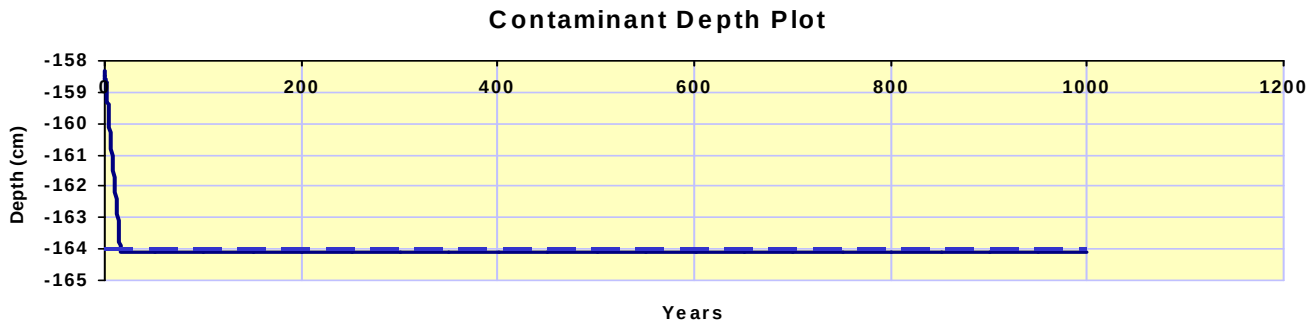
Starting Depth: 158.30 **cm**

Ending Depth: 164.10 **cm**

Total Depth: 164.10 **cm**







Attachment G

(SESOIL Files on CD)

Attachment H

(Numerical Modeling Files on CD)

APPENDIX G

RESRAD: Soil

Relevant Tables from Appendix V of the Remedial Investigation Report

Guterl Feasibility Study

Appendix G

Table of contents

Table G-1 Summary of RIR Risk Assessment Preliminary Remediation Goals, Excerpted from Appendix V.4 of the 2009 RIR.

RESRAD Summary Report for Construction Worker PRG Development

Table G-2 Residential PRGs assuming drinking water exposure results in no more of 5 mrem/year of total 25 mrem/year dose limit

RESRAD Summary Report for Residential Exposure (without drinking water pathway)

Guterl FS Appendix G, Table 1

Preliminary Remediation Goals (PRGs) Presented in the RIR to meet 25 mrem/year all pathways

FROM THE RIR TABLE V.4

Isotope	**CW** DCGL (pCi/g)	**OSW** DCGL (pCi/g)	**JT** DCGL (pCi/g)	**RES** DCGL (pCi/g)	
U234	46.6	11500	104000	3.96	
U235	40.6	197	2990	4.01	
U238	47.2	935	13600	4.13	
Total U pCi/g	**47**	**1472**	**20765**	**4**	**Total U pCi/g (calculated from uranium isotopes assuming natural abundance)**
U-238 as total U surrogate	22.9	720	10154	2	**U-238 as total U surrogate (calculated from total U)**
Total U mg/kg	*69*	*2159*	*30463*	*6*	*Total U mg/kg provided for comparison only to the soil PRG for GW protection*

	CW	**OSW**	**JT**	**RES**	
Th-232					
Ra-228					
Th-228					
Th-232					
Th-232 at year of peak	**6.6**	**9.7**	**147**	**2.6**	**Th-232 pCi/g (includes dose from daughters Ra-228 & Th-228)**

Guterl FS Appendix G, Table 2

Use of RIR RESRAD Runs for Residential Receptor:

EXCEPTIONS: Drinking water pathway is turned off

Resident assumed to consume only water with up to MCL's worth of U (30 ug/L ~ 5 mrem/year)

Soil exposure pathways limited to 20 mrem/year

	Area = 10,000 m2	
Isotope	DSR	**PRG**
	all time 0 (mrem/year per pCi/g)	(pCi/g)
U234	0.0269	743
U235	0.4122	49
U238	0.102	196
Total U pCi/g		**277**
U-238 as total U surrogate		135
Total U mg/kg		*406*

Th-23 DCGL	DSR t=0	**PRG**
	(mrem/year per pCi/g)	
Th-232		pCi/g
Ra-228	5.03	
Th-228	4.378	
Th-232	0.4518	
sum Th-232 + daughters	9.8598	**2.0**

Definitions:
DSR Dose to Source Ratios, developed in RESRAD
PRG Preliminary remediation goal

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary ... 6
Summary of Pathway Selections ... 11
Contaminated Zone and Total Dose Summary ... 12
Total Dose Components
Time = 0.000E+00 ... 14
Time = 1.000E+00 ... 15
Time = 3.000E+00 ... 16
Time = 1.000E+01 ... 17
Time = 2.631E+01 ... 18
Time = 3.000E+01 ... 19
Time = 5.800E+01 ... 20
Time = 8.230E+01 ... 21
Time = 3.000E+02 ... 22
Time = 1.000E+03 ... 23
Dose/Source Ratios Summed Over All Pathways ... 24
Single Radionuclide Soil Guidelines ... 25
Dose Per Nuclide Summed Over All Pathways ... 26
Soil Concentration Per Nuclide ... 27

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(8)
D-1	U-234	2.830E-04	2.830E-04	DCF3(9)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(10)
D-1	U-238	2.550E-04	2.550E-04	DCF3(11)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(12)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(7,3)
D-34				

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	6.700E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.000E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	6.000E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	2.631E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	3.000E+01	1.000E+02	---	T(6)
R011	Times for calculations (yr)	5.800E+01	3.000E+02	---	T(7)
R011	Times for calculations (yr)	8.230E+01	1.000E+03	---	T(8)
R011	Times for calculations (yr)	3.000E+02	0.000E+00	---	T(9)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.310E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	1.500E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.150E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	7.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.400E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.500E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Density of saturated zone (g/cm**3)	2.610E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	1.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-02	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	3.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.540E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	7.000E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	2.000E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	8.700E-01	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	3.000E-01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.310E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.500E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.500E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	7.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.150E+00	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.231E-03	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.231E-03	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(6,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.951E-06	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.951E-06	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.951E-06	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	3.853E+01	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	5.000E+01	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	2.200E-01	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.669E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	3.853E+01	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	5.000E+01	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	2.200E-01	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.669E-03	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	3.853E+01	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	5.000E+01	---	DCNUCU(11,1)
R016	Saturated zone (cm**3/g)	2.200E-01	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.669E-03	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.470E-02	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.917E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.965E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	7.300E+03	8.400E+03	---	INHALR

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Mass loading for inhalation (g/m**3)	6.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	1.000E+00	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.205E+02	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.300E+01	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Contaminated Zone Dimensions

Area: 67000.00 square meters
Thickness: 1.00 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g

Ra-226	1.000E+00
Ra-228	1.000E+00
Th-228	1.000E+00
Th-230	1.000E+00
Th-232	1.000E+00
U-234	1.000E+00
U-235	1.000E+00
U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	2.631E+01	3.000E+01	5.800E+01	8.230E+01	3.000E+02	1.000E+03
TDOSE(t):	6.697E+00	6.683E+00	6.651E+00	6.549E+00	6.374E+00	6.338E+00	7.594E+00	7.198E+00	5.114E+00	4.075E+00
M(t):	2.679E-01	2.673E-01	2.661E-01	2.619E-01	2.549E-01	2.535E-01	3.038E-01	2.879E-01	2.046E-01	1.630E-01

Maximum TDOSE(t): 7.595E+00 mrem/yr at t = 57.9 ± 0.1 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.794E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	1.882E+00	0.2478	1.970E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.597E-01	0.0210
Ra-228	3.242E-03	0.0004	3.262E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.007E-05	0.0000
Th-228	1.443E-09	0.0000	1.991E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.422E-11	0.0000
Th-230	5.502E-02	0.0072	2.937E-02	0.0039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.821E-02	0.0024
Th-232	3.450E+00	0.4543	1.781E-01	0.0234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.347E-01	0.0177
U-234	7.086E-05	0.0000	7.604E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.973E-03	0.0007
U-235	1.084E-01	0.0143	7.418E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.099E-03	0.0007
U-238	2.149E-02	0.0028	6.791E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.716E-03	0.0006
Total	5.521E+00	0.7269	2.313E-01	0.0305	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.274E-01	0.0431

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.794E+01 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.044E+00	0.2691
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.325E-03	0.0004
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.477E-09	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E-01	0.0135
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.763E+00	0.4955
U-234	5.234E-01	0.0689	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.361E-01	0.0706
U-235	4.946E-01	0.0651	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.154E-01	0.0810
U-238	4.971E-01	0.0655	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.301E-01	0.0698
Total	1.515E+00	0.1995	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.595E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	2.465E+00	0.3681	8.042E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.927E-02	0.0059
Ra-228	1.591E+00	0.2375	5.233E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.068E-02	0.0061
Th-228	1.890E+00	0.2823	2.609E-02	0.0039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.864E-02	0.0028
Th-230	8.058E-04	0.0001	2.936E-02	0.0044	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.506E-02	0.0022
Th-232	9.113E-02	0.0136	1.479E-01	0.0221	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.744E-02	0.0116
U-234	9.008E-05	0.0000	1.184E-02	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.745E-03	0.0012
U-235	1.686E-01	0.0252	1.104E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.320E-03	0.0011
U-238	3.352E-02	0.0050	1.059E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.354E-03	0.0011
Total	6.241E+00	0.9319	2.429E-01	0.0363	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.135E-01	0.0319

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.505E+00	0.3741
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.637E+00	0.2444
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.935E+00	0.2890
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.523E-02	0.0068
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.165E-01	0.0473
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.968E-02	0.0029
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.870E-01	0.0279
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.146E-02	0.0077
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.697E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	2.454E+00	0.3672	8.630E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.508E-02	0.0067
Ra-228	1.942E+00	0.2906	1.205E-02	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.121E-02	0.0062
Th-228	1.316E+00	0.1969	1.816E-02	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.297E-02	0.0019
Th-230	1.871E-03	0.0003	2.936E-02	0.0044	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.508E-02	0.0023
Th-232	3.066E-01	0.0459	1.490E-01	0.0223	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.240E-02	0.0123
U-234	8.941E-05	0.0000	1.175E-02	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.686E-03	0.0012
U-235	1.674E-01	0.0250	1.095E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.271E-03	0.0011
U-238	3.326E-02	0.0050	1.051E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.298E-03	0.0011
Total	6.221E+00	0.9309	2.426E-01	0.0363	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.190E-01	0.0328

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.500E+00	0.3741
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.996E+00	0.2986
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.347E+00	0.2016
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.631E-02	0.0069
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.380E-01	0.0805
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.953E-02	0.0029
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.856E-01	0.0278
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.107E-02	0.0076
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.683E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	2.431E+00	0.3655	9.738E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.603E-02	0.0084
Ra-228	2.105E+00	0.3164	1.755E-02	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.794E-02	0.0057
Th-228	6.375E-01	0.0959	8.798E-03	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.284E-03	0.0009
Th-230	3.987E-03	0.0006	2.936E-02	0.0044	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.513E-02	0.0023
Th-232	8.050E-01	0.1210	1.527E-01	0.0230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.202E-02	0.0138
U-234	8.810E-05	0.0000	1.157E-02	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.570E-03	0.0011
U-235	1.648E-01	0.0248	1.079E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.173E-03	0.0011
U-238	3.276E-02	0.0049	1.035E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.187E-03	0.0011
Total	6.180E+00	0.9291	2.421E-01	0.0364	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.293E-01	0.0345

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.488E+00	0.3741
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.160E+00	0.3248
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.526E-01	0.0981
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.847E-02	0.0073
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.050E+00	0.1578
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.923E-02	0.0029
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.828E-01	0.0275
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.029E-02	0.0076
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.651E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	2.353E+00	0.3594	1.295E-03	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.801E-02	0.0134
Ra-228	1.208E+00	0.1844	1.187E-02	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.908E-02	0.0029
Th-228	5.047E-02	0.0077	6.965E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.975E-04	0.0001
Th-230	1.124E-02	0.0017	2.936E-02	0.0045	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.534E-02	0.0023
Th-232	2.239E+00	0.3419	1.660E-01	0.0254	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.158E-01	0.0177
U-234	8.396E-05	0.0000	1.097E-02	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.175E-03	0.0011
U-235	1.562E-01	0.0239	1.026E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.849E-03	0.0010
U-238	3.104E-02	0.0047	9.807E-03	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.811E-03	0.0010
Total	6.049E+00	0.9237	2.403E-01	0.0367	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.596E-01	0.0396

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.443E+00	0.3730
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.239E+00	0.1892
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.166E-02	0.0079
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.594E-02	0.0085
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.521E+00	0.3849
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.823E-02	0.0028
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.733E-01	0.0265
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.766E-02	0.0073
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.549E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.631E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	2.181E+00	0.3422	1.746E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.338E-01	0.0210
Ra-228	1.677E-01	0.0263	1.686E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.591E-03	0.0004
Th-228	1.370E-04	0.0000	1.890E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.350E-06	0.0000
Th-230	2.725E-02	0.0043	2.936E-02	0.0046	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.614E-02	0.0025
Th-232	3.292E+00	0.5165	1.765E-01	0.0277	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.322E-01	0.0207
U-234	7.678E-05	0.0000	9.683E-03	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.333E-03	0.0010
U-235	1.379E-01	0.0216	9.160E-03	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.177E-03	0.0010
U-238	2.739E-02	0.0043	8.654E-03	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.011E-03	0.0009
Total	5.833E+00	0.9153	2.368E-01	0.0372	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.032E-01	0.0476

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.631E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.317E+00	0.3635
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.719E-01	0.0270
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.402E-04	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.275E-02	0.0114
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.601E+00	0.5649
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.609E-02	0.0025
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.533E-01	0.0240
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.206E-02	0.0066
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.374E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	2.144E+00	0.3383	1.806E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.400E-01	0.0221
Ra-228	1.059E-01	0.0167	1.065E-03	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.635E-03	0.0003
Th-228	3.597E-05	0.0000	4.964E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.546E-07	0.0000
Th-230	3.070E-02	0.0048	2.936E-02	0.0046	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.636E-02	0.0026
Th-232	3.352E+00	0.5288	1.771E-01	0.0279	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.331E-01	0.0210
U-234	7.559E-05	0.0000	9.414E-03	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.157E-03	0.0010
U-235	1.341E-01	0.0212	8.934E-03	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.038E-03	0.0010
U-238	2.663E-02	0.0042	8.413E-03	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.843E-03	0.0009
Total	5.793E+00	0.9140	2.361E-01	0.0373	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.092E-01	0.0488

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.286E+00	0.3606
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.086E-01	0.0171
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.682E-05	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.643E-02	0.0121
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.662E+00	0.5777
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.565E-02	0.0025
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.491E-01	0.0235
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.088E-02	0.0065
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.338E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.800E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	1.882E+00	0.2478	1.970E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.597E-01	0.0210
Ra-228	3.219E-03	0.0004	3.239E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.971E-05	0.0000
Th-228	1.413E-09	0.0000	1.949E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.392E-11	0.0000
Th-230	5.507E-02	0.0073	2.937E-02	0.0039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.821E-02	0.0024
Th-232	3.450E+00	0.4544	1.781E-01	0.0235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.347E-01	0.0177
U-234	7.086E-05	0.0000	7.601E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.970E-03	0.0007
U-235	1.083E-01	0.0143	7.415E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.098E-03	0.0007
U-238	2.148E-02	0.0028	6.788E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.714E-03	0.0006
Total	5.520E+00	0.7269	2.313E-01	0.0305	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.274E-01	0.0431

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.800E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.043E+00	0.2691
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.301E-03	0.0004
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.446E-09	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.027E-01	0.0135
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.763E+00	0.4955
U-234	5.234E-01	0.0689	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.360E-01	0.0706
U-235	4.945E-01	0.0651	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.154E-01	0.0810
U-238	4.971E-01	0.0655	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.301E-01	0.0698
Total	1.515E+00	0.1995	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.594E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 8.230E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	1.680E+00	0.2334	1.896E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.558E-01	0.0216
Ra-228	1.552E-04	0.0000	1.562E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.397E-06	0.0000
Th-228	2.120E-13	0.0000	2.926E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.090E-15	0.0000
Th-230	7.378E-02	0.0102	2.938E-02	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.988E-02	0.0028
Th-232	3.453E+00	0.4797	1.781E-01	0.0247	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.347E-01	0.0187
U-234	7.176E-05	0.0000	6.314E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.129E-03	0.0006
U-235	9.001E-02	0.0125	6.327E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.413E-03	0.0006
U-238	1.783E-02	0.0025	5.634E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.913E-03	0.0005
Total	5.315E+00	0.7384	2.277E-01	0.0316	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.228E-01	0.0448

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 8.230E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.838E+00	0.2553
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.591E-04	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.170E-13	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.230E-01	0.0171
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.766E+00	0.5231
U-234	4.603E-01	0.0640	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.708E-01	0.0654
U-235	4.351E-01	0.0604	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.359E-01	0.0744
U-238	4.373E-01	0.0607	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.647E-01	0.0646
Total	1.333E+00	0.1851	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.198E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	6.086E-01	0.1190	7.344E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.099E-02	0.0119
Ra-228	2.475E-16	0.0000	2.490E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.822E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.729E-01	0.0338	2.941E-02	0.0058	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.961E-02	0.0058
Th-232	3.449E+00	0.6744	1.779E-01	0.0348	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.345E-01	0.0263
U-234	1.509E-04	0.0000	1.216E-03	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.026E-04	0.0002
U-235	1.720E-02	0.0034	1.571E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.223E-03	0.0002
U-238	3.358E-03	0.0007	1.062E-03	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.374E-04	0.0001
Total	4.251E+00	0.8313	2.119E-01	0.0414	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.279E-01	0.0446

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.704E-01	0.1311
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.538E-16	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.319E-01	0.0453
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.762E+00	0.7355
U-234	1.457E-01	0.0285	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.479E-01	0.0289
U-235	1.388E-01	0.0271	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.588E-01	0.0311
U-238	1.386E-01	0.0271	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.437E-01	0.0281
Total	4.231E-01	0.0827	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.114E+00	1.0000

*Sum of all water independent and dependent pathways.

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	2.324E-02	0.0057	2.805E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.329E-03	0.0006
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.252E-01	0.0553	2.919E-02	0.0072	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.474E-02	0.0085
Th-232	3.437E+00	0.8434	1.773E-01	0.0435	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.341E-01	0.0329
U-234	2.610E-04	0.0001	3.981E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.405E-05	0.0000
U-235	8.906E-05	0.0000	2.063E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.947E-05	0.0000
U-238	1.574E-05	0.0000	4.972E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.459E-06	0.0000
Total	3.686E+00	0.9044	2.066E-01	0.0507	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.712E-01	0.0420

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.560E-02	0.0063
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.891E-01	0.0709
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.748E+00	0.9198
U-234	3.615E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.960E-03	0.0010
U-235	4.681E-03	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.810E-03	0.0012
U-238	3.443E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.467E-03	0.0009
Total	1.174E-02	0.0029	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.075E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	3.000E+00	1.000E+01	2.631E+01	3.000E+01	5.800E+01	8.230E+01	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	2.502E+00	2.491E+00	2.467E+00	2.388E+00	2.213E+00	2.175E+00	1.909E+00	1.704E+00	6.174E-01	2.358E-02
Ra-226+D	Pb-210+D	1.000E+00	3.120E-03	9.202E-03	2.068E-02	5.437E-02	1.035E-01	1.104E-01	1.344E-01	1.334E-01	5.295E-02	2.022E-03
Ra-226+D	∑DSR(j)		2.505E+00	2.500E+00	2.488E+00	2.443E+00	2.317E+00	2.286E+00	2.043E+00	1.838E+00	6.704E-01	2.560E-02
Ra-228+D	Ra-228+D	1.000E+00	1.280E+00	1.130E+00	8.806E-01	3.676E-01	4.804E-02	3.031E-02	9.210E-04	4.441E-05	7.081E-17	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	3.563E-01	8.654E-01	1.280E+00	8.710E-01	1.239E-01	7.826E-02	2.380E-03	1.147E-04	1.829E-16	0.000E+00
Ra-228+D	∑DSR(j)		1.637E+00	1.996E+00	2.160E+00	1.239E+00	1.719E-01	1.086E-01	3.301E-03	1.591E-04	2.538E-16	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.935E+00	1.347E+00	6.526E-01	5.166E-02	1.402E-04	3.682E-05	1.446E-09	2.170E-13	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	4.468E-02	4.468E-02	4.468E-02	4.468E-02	4.467E-02	4.466E-02	4.465E-02	4.463E-02	4.450E-02	4.406E-02
Th-230	Ra-226+D	1.000E+00	5.424E-04	1.624E-03	3.772E-03	1.113E-02	2.738E-02	3.088E-02	5.560E-02	7.458E-02	1.751E-01	2.282E-01
Th-230	Pb-210+D	1.000E+00	4.520E-07	3.130E-06	1.614E-05	1.323E-04	7.101E-04	8.812E-04	2.407E-03	3.826E-03	1.230E-02	1.687E-02
Th-230	∑DSR(j)		4.523E-02	4.631E-02	4.847E-02	5.594E-02	7.275E-02	7.643E-02	1.027E-01	1.230E-01	2.319E-01	2.891E-01
Th-232	Th-232	1.000E+00	2.228E-01	2.228E-01	2.228E-01	2.228E-01	2.228E-01	2.228E-01	2.227E-01	2.227E-01	2.225E-01	2.217E-01
Th-232	Ra-228+D	1.000E+00	7.878E-02	2.239E-01	4.650E-01	9.605E-01	1.269E+00	1.286E+00	1.315E+00	1.315E+00	1.314E+00	1.309E+00
Th-232	Th-228+D	1.000E+00	1.490E-02	9.130E-02	3.619E-01	1.337E+00	2.109E+00	2.153E+00	2.226E+00	2.228E+00	2.225E+00	2.217E+00
Th-232	∑DSR(j)		3.165E-01	5.380E-01	1.050E+00	2.521E+00	3.601E+00	3.662E+00	3.763E+00	3.766E+00	3.762E+00	3.748E+00
U-234	U-234	1.000E+00	1.968E-02	1.953E-02	1.923E-02	1.822E-02	1.608E-02	1.563E-02	5.360E-01	4.708E-01	1.477E-01	3.614E-03
U-234	Th-230	1.000E+00	2.006E-07	5.998E-07	1.389E-06	4.057E-06	9.745E-06	1.094E-05	1.898E-05	2.466E-05	4.708E-05	5.178E-05
U-234	Ra-226+D	1.000E+00	1.625E-09	1.134E-08	5.944E-08	5.168E-07	3.151E-06	4.017E-06	1.321E-05	2.406E-05	1.441E-04	2.666E-04
U-234	Pb-210+D	1.000E+00	1.018E-12	1.512E-11	1.725E-10	4.227E-09	5.873E-08	8.314E-08	4.419E-07	1.000E-06	1.069E-05	2.737E-05
U-234	∑DSR(j)		1.968E-02	1.953E-02	1.923E-02	1.823E-02	1.609E-02	1.565E-02	5.360E-01	4.708E-01	1.479E-01	3.960E-03
U-235+D	U-235+D	1.000E+00	1.870E-01	1.856E-01	1.827E-01	1.732E-01	1.528E-01	1.486E-01	6.144E-01	5.344E-01	1.565E-01	3.503E-03
U-235+D	Pa-231	1.000E+00	4.727E-06	1.410E-05	3.245E-05	9.285E-05	2.122E-04	2.354E-04	3.871E-04	5.273E-04	6.288E-04	2.941E-04
U-235+D	Ac-227+D	1.000E+00	1.615E-07	1.111E-06	5.652E-06	4.415E-05	2.128E-04	2.579E-04	5.973E-04	8.970E-04	1.680E-03	1.013E-03
U-235+D	∑DSR(j)		1.870E-01	1.856E-01	1.828E-01	1.733E-01	1.533E-01	1.491E-01	6.154E-01	5.359E-01	1.588E-01	4.810E-03
U-238	U-238	5.400E-05	9.497E-07	9.425E-07	9.281E-07	8.796E-07	7.762E-07	7.545E-07	2.608E-05	2.291E-05	7.191E-06	1.763E-07
U-238+D	U-238+D	9.999E-01	5.146E-02	5.107E-02	5.029E-02	4.766E-02	4.206E-02	4.088E-02	5.300E-01	4.645E-01	1.436E-01	3.456E-03
U-238+D	U-234	9.999E-01	2.785E-08	8.299E-08	1.908E-07	5.424E-07	1.222E-06	1.352E-06	8.890E-05	1.105E-04	1.259E-04	1.026E-05
U-238+D	Th-230	9.999E-01	1.893E-13	1.319E-12	6.905E-12	5.962E-11	3.577E-10	4.544E-10	1.459E-09	2.594E-09	1.298E-08	1.911E-08
U-238+D	Ra-226+D	9.999E-01	1.151E-15	1.719E-14	1.986E-13	5.087E-12	7.795E-11	1.127E-10	1.015E-09	3.782E-09	3.726E-08	1.050E-07
U-238+D	Pb-210+D	9.999E-01	5.772E-19	1.773E-17	4.376E-16	3.177E-14	1.136E-12	1.832E-12	1.263E-09	7.909E-09	2.721E-08	4.535E-08
U-238+D	∑DSR(j)		5.146E-02	5.107E-02	5.029E-02	4.766E-02	4.206E-02	4.088E-02	5.301E-01	4.646E-01	1.437E-01	3.467E-03

The DSR includes contributions from associated (half-life ≤ 180 days) daughters.

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	2.631E+01	3.000E+01	5.800E+01	8.230E+01	3.000E+02	1.000E+03
Ra-226	9.979E+00	1.000E+01	1.005E+01	1.024E+01	1.079E+01	1.094E+01	1.223E+01	1.360E+01	3.729E+01	9.766E+02
Ra-228	1.527E+01	1.253E+01	1.157E+01	2.018E+01	1.454E+02	2.303E+02	7.574E+03	1.571E+05	*2.726E+14	*2.726E+14
Th-228	1.292E+01	1.856E+01	3.831E+01	4.839E+02	1.783E+05	6.789E+05	1.729E+10	1.152E+14	*8.195E+14	*8.195E+14
Th-230	5.528E+02	5.398E+02	5.158E+02	4.469E+02	3.436E+02	3.271E+02	2.435E+02	2.032E+02	1.078E+02	8.647E+01
Th-232	7.899E+01	4.647E+01	2.382E+01	9.919E+00	6.943E+00	6.827E+00	6.644E+00	6.639E+00	6.646E+00	6.669E+00
U-234	1.271E+03	1.280E+03	1.300E+03	1.372E+03	1.553E+03	1.598E+03	4.664E+01	5.310E+01	1.691E+02	6.313E+03
U-235	1.337E+02	1.347E+02	1.368E+02	1.442E+02	1.631E+02	1.677E+02	4.063E+01	4.665E+01	1.574E+02	5.197E+03
U-238	4.858E+02	4.896E+02	4.971E+02	5.245E+02	5.944E+02	6.115E+02	4.716E+01	5.380E+01	1.739E+02	7.211E+03

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 57.9 ± 0.1 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Ra-226	1.000E+00	0.000E+00	2.505E+00	9.979E+00	2.044E+00	1.223E+01
Ra-228	1.000E+00	2.631 ± 0.005	2.166E+00	1.154E+01	3.325E-03	7.520E+03
Th-228	1.000E+00	0.000E+00	1.935E+00	1.292E+01	1.477E-09	1.693E+10
Th-230	1.000E+00	1.000E+03	2.891E-01	8.647E+01	1.026E-01	2.437E+02
Th-232	1.000E+00	82.4 ± 0.2	3.766E+00	6.639E+00	3.763E+00	6.644E+00
U-234	1.000E+00	57.9 ± 0.1	5.361E-01	4.664E+01	5.361E-01	4.664E+01
U-235	1.000E+00	58.0 ± 0.1	6.153E-01	4.063E+01	6.154E-01	4.062E+01
U-238	1.000E+00	58.0 ± 0.1	5.301E-01	4.716E+01	5.301E-01	4.716E+01

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	2.631E+01	3.000E+01	5.800E+01	8.230E+01	3.000E+02	1.000E+03
Ra-226	Ra-226	1.000E+00	2.502E+00	2.491E+00	2.467E+00	2.388E+00	2.213E+00	2.175E+00	1.909E+00	1.704E+00	6.174E-01	2.358E-02
Ra-226	Th-230	1.000E+00	5.424E-04	1.624E-03	3.772E-03	1.113E-02	2.738E-02	3.088E-02	5.560E-02	7.458E-02	1.751E-01	2.282E-01
Ra-226	U-234	1.000E+00	1.625E-09	1.134E-08	5.944E-08	5.168E-07	3.151E-06	4.017E-06	1.321E-05	2.406E-05	1.441E-04	2.666E-04
Ra-226	U-238	9.999E-01	1.151E-15	1.719E-14	1.986E-13	5.087E-12	7.795E-11	1.127E-10	1.015E-09	3.782E-09	3.726E-08	1.050E-07
Ra-226	∑DOSE(j)		2.503E+00	2.492E+00	2.471E+00	2.399E+00	2.241E+00	2.206E+00	1.965E+00	1.779E+00	7.927E-01	2.520E-01
Pb-210	Ra-226	1.000E+00	3.120E-03	9.202E-03	2.068E-02	5.437E-02	1.035E-01	1.104E-01	1.344E-01	1.334E-01	5.295E-02	2.022E-03
Pb-210	Th-230	1.000E+00	4.520E-07	3.130E-06	1.614E-05	1.323E-04	7.101E-04	8.812E-04	2.407E-03	3.826E-03	1.230E-02	1.687E-02
Pb-210	U-234	1.000E+00	1.018E-12	1.512E-11	1.725E-10	4.227E-09	5.873E-08	8.314E-08	4.419E-07	1.000E-06	1.069E-05	2.737E-05
Pb-210	U-238	9.999E-01	5.772E-19	1.773E-17	4.376E-16	3.177E-14	1.136E-12	1.832E-12	1.263E-09	7.909E-09	2.721E-08	4.535E-08
Pb-210	∑DOSE(j)		3.121E-03	9.205E-03	2.069E-02	5.451E-02	1.042E-01	1.113E-01	1.368E-01	1.372E-01	6.526E-02	1.892E-02
Ra-228	Ra-228	1.000E+00	1.280E+00	1.130E+00	8.806E-01	3.676E-01	4.804E-02	3.031E-02	9.210E-04	4.441E-05	7.081E-17	0.000E+00
Ra-228	Th-232	1.000E+00	7.878E-02	2.239E-01	4.650E-01	9.605E-01	1.269E+00	1.286E+00	1.315E+00	1.315E+00	1.314E+00	1.309E+00
Ra-228	∑DOSE(j)		1.359E+00	1.354E+00	1.346E+00	1.328E+00	1.317E+00	1.317E+00	1.315E+00	1.315E+00	1.314E+00	1.309E+00
Th-228	Ra-228	1.000E+00	3.563E-01	8.654E-01	1.280E+00	8.710E-01	1.239E-01	7.826E-02	2.380E-03	1.147E-04	1.829E-16	0.000E+00
Th-228	Th-228	1.000E+00	1.935E+00	1.347E+00	6.526E-01	5.166E-02	1.402E-04	3.682E-05	1.446E-09	2.170E-13	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	1.490E-02	9.130E-02	3.619E-01	1.337E+00	2.109E+00	2.153E+00	2.226E+00	2.228E+00	2.225E+00	2.217E+00
Th-228	∑DOSE(j)		2.306E+00	2.304E+00	2.294E+00	2.260E+00	2.233E+00	2.231E+00	2.228E+00	2.228E+00	2.225E+00	2.217E+00
Th-230	Th-230	1.000E+00	4.468E-02	4.468E-02	4.468E-02	4.468E-02	4.467E-02	4.466E-02	4.465E-02	4.463E-02	4.450E-02	4.406E-02
Th-230	U-234	1.000E+00	2.006E-07	5.998E-07	1.389E-06	4.057E-06	9.745E-06	1.094E-05	1.898E-05	2.466E-05	4.708E-05	5.178E-05
Th-230	U-238	9.999E-01	1.893E-13	1.319E-12	6.905E-12	5.962E-11	3.577E-10	4.544E-10	1.459E-09	2.594E-09	1.298E-08	1.911E-08
Th-230	∑DOSE(j)		4.468E-02	4.468E-02	4.468E-02	4.468E-02	4.468E-02	4.468E-02	4.467E-02	4.466E-02	4.454E-02	4.412E-02
Th-232	Th-232	1.000E+00	2.228E-01	2.228E-01	2.228E-01	2.228E-01	2.228E-01	2.228E-01	2.227E-01	2.227E-01	2.225E-01	2.217E-01
U-234	U-234	1.000E+00	1.968E-02	1.953E-02	1.923E-02	1.822E-02	1.608E-02	1.563E-02	5.360E-01	4.708E-01	1.477E-01	3.614E-03
U-234	U-238	9.999E-01	2.785E-08	8.299E-08	1.908E-07	5.424E-07	1.222E-06	1.352E-06	8.890E-05	1.105E-04	1.259E-04	1.026E-05
U-234	∑DOSE(j)		1.968E-02	1.953E-02	1.923E-02	1.822E-02	1.608E-02	1.563E-02	5.361E-01	4.709E-01	1.478E-01	3.624E-03
U-235	U-235	1.000E+00	1.870E-01	1.856E-01	1.827E-01	1.732E-01	1.528E-01	1.486E-01	6.144E-01	5.344E-01	1.565E-01	3.503E-03
Pa-231	U-235	1.000E+00	4.727E-06	1.410E-05	3.245E-05	9.285E-05	2.122E-04	2.354E-04	3.871E-04	5.273E-04	6.288E-04	2.941E-04
Ac-227	U-235	1.000E+00	1.615E-07	1.111E-06	5.652E-06	4.415E-05	2.128E-04	2.579E-04	5.973E-04	8.970E-04	1.680E-03	1.013E-03
U-238	U-238	5.400E-05	9.497E-07	9.425E-07	9.281E-07	8.796E-07	7.762E-07	7.545E-07	2.608E-05	2.291E-05	7.191E-06	1.763E-07
U-238	U-238	9.999E-01	5.146E-02	5.107E-02	5.029E-02	4.766E-02	4.206E-02	4.088E-02	5.300E-01	4.645E-01	1.436E-01	3.456E-03
U-238	∑DOSE(j)		5.146E-02	5.107E-02	5.029E-02	4.766E-02	4.206E-02	4.088E-02	5.300E-01	4.645E-01	1.436E-01	3.457E-03

THF(i) is the thread fraction of the parent nuclide.

Summary : 052709 RESRAD - CW Basic Terrestrial 051809 1015hrs
File : C:\RESRAD_FAMILY\052709 RESRAD - CW BASIC TERRESTRIAL 051809 1015HRS.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	2.631E+01	3.000E+01	5.800E+01	8.230E+01	3.000E+02	1.000E+03
Ra-226	Ra-226	1.000E+00	1.000E+00	9.953E-01	9.861E-01	9.544E-01	8.845E-01	8.694E-01	7.630E-01	6.812E-01	2.467E-01	9.423E-03
Ra-226	Th-230	1.000E+00	0.000E+00	4.322E-04	1.291E-03	4.232E-03	1.072E-02	1.213E-02	2.201E-02	2.959E-02	6.978E-02	9.098E-02
Ra-226	U-234	1.000E+00	0.000E+00	1.942E-09	1.733E-08	1.871E-07	1.212E-06	1.553E-06	5.188E-06	9.492E-06	5.719E-05	1.054E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.833E-15	4.901E-14	1.753E-12	2.944E-11	4.285E-11	2.698E-10	6.850E-10	1.218E-08	3.783E-08
Ra-226	∑S(j):		1.000E+00	9.958E-01	9.874E-01	9.587E-01	8.952E-01	8.815E-01	7.850E-01	7.108E-01	3.166E-01	1.005E-01
Pb-210	Ra-226	1.000E+00	0.000E+00	3.049E-02	8.802E-02	2.571E-01	5.038E-01	5.388E-01	6.603E-01	6.564E-01	2.610E-01	9.968E-03
Pb-210	Th-230	1.000E+00	0.000E+00	6.647E-06	5.831E-05	5.934E-04	3.382E-03	4.216E-03	1.169E-02	1.867E-02	6.041E-02	8.297E-02
Pb-210	U-234	1.000E+00	0.000E+00	1.997E-11	5.269E-10	1.802E-08	2.743E-07	3.910E-07	2.123E-06	4.814E-06	4.678E-05	9.593E-05
Pb-210	U-238	9.999E-01	0.000E+00	1.416E-17	1.123E-15	1.287E-13	5.203E-12	8.471E-12	8.978E-11	2.898E-10	9.324E-09	3.427E-08
Pb-210	∑S(j):		0.000E+00	3.049E-02	8.807E-02	2.576E-01	5.072E-01	5.430E-01	6.720E-01	6.751E-01	3.214E-01	9.303E-02
Ra-228	Ra-228	1.000E+00	1.000E+00	8.827E-01	6.877E-01	2.871E-01	3.752E-02	2.367E-02	7.193E-04	3.468E-05	5.531E-17	0.000E+00
Ra-228	Th-232	1.000E+00	0.000E+00	1.133E-01	3.017E-01	6.887E-01	9.298E-01	9.431E-01	9.652E-01	9.657E-01	9.647E-01	9.614E-01
Ra-228	∑S(j):		1.000E+00	9.960E-01	9.894E-01	9.758E-01	9.673E-01	9.668E-01	9.659E-01	9.657E-01	9.647E-01	9.614E-01
Th-228	Ra-228	1.000E+00	0.000E+00	2.847E-01	5.346E-01	3.972E-01	5.711E-02	3.608E-02	1.097E-03	5.290E-05	8.436E-17	0.000E+00
Th-228	Th-228	1.000E+00	1.000E+00	6.961E-01	3.372E-01	2.670E-02	7.245E-05	1.903E-05	7.472E-10	1.121E-13	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.862E-02	1.238E-01	5.565E-01	9.108E-01	9.311E-01	9.648E-01	9.657E-01	9.647E-01	9.614E-01
Th-228	∑S(j):		1.000E+00	9.993E-01	9.956E-01	9.804E-01	9.679E-01	9.672E-01	9.659E-01	9.657E-01	9.647E-01	9.614E-01
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.996E-01	9.996E-01	9.992E-01	9.989E-01	9.958E-01	9.861E-01
Th-230	U-234	1.000E+00	0.000E+00	8.967E-06	2.670E-05	8.665E-05	2.144E-04	2.412E-04	4.212E-04	5.490E-04	1.053E-03	1.159E-03
Th-230	U-238	9.999E-01	0.000E+00	1.269E-11	1.131E-10	1.212E-09	7.728E-09	9.863E-09	3.208E-08	5.736E-08	2.897E-07	4.275E-07
Th-230	∑S(j):		1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.998E-01	9.996E-01	9.994E-01	9.969E-01	9.873E-01
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01	9.997E-01	9.996E-01	9.985E-01	9.951E-01
U-234	U-234	1.000E+00	1.000E+00	9.924E-01	9.772E-01	9.261E-01	8.172E-01	7.944E-01	6.408E-01	5.318E-01	1.001E-01	4.656E-04
U-234	U-238	9.999E-01	0.000E+00	2.813E-06	8.311E-06	2.625E-05	6.095E-05	6.756E-05	1.054E-04	1.241E-04	8.516E-05	1.322E-06
U-234	∑S(j):		1.000E+00	9.924E-01	9.773E-01	9.262E-01	8.173E-01	7.945E-01	6.409E-01	5.320E-01	1.002E-01	4.669E-04
U-235	U-235	1.000E+00	1.000E+00	9.924E-01	9.773E-01	9.262E-01	8.173E-01	7.945E-01	6.409E-01	5.320E-01	1.002E-01	4.669E-04
Pa-231	U-235	1.000E+00	0.000E+00	2.101E-05	6.219E-05	1.977E-04	4.655E-04	5.176E-04	8.274E-04	9.955E-04	8.337E-04	2.652E-05
Ac-227	U-235	1.000E+00	0.000E+00	3.301E-07	2.855E-06	2.768E-05	1.416E-04	1.724E-04	4.039E-04	5.628E-04	6.110E-04	2.059E-05
U-238	U-238	5.400E-05	5.400E-05	5.359E-05	5.277E-05	5.001E-05	4.413E-05	4.290E-05	3.461E-05	2.873E-05	5.410E-06	2.521E-08
U-238	U-238	9.999E-01	9.999E-01	9.923E-01	9.772E-01	9.261E-01	8.172E-01	7.944E-01	6.409E-01	5.319E-01	1.002E-01	4.669E-04
U-238	∑S(j):		1.000E+00	9.924E-01	9.773E-01	9.262E-01	8.173E-01	7.945E-01	6.409E-01	5.320E-01	1.002E-01	4.669E-04

THF(i) is the thread fraction of the parent nuclide.

RESCALC.EXE execution time = 8.63 seconds

Guterl FS Appendix G, Table 2

Use of RIR RESRAD Runs for Residential Receptor:

EXCEPTIONS: Drinking water pathway is turned off

Resident assumed to consume only water with up to MCL's worth of U (30 ug/L ~ 5 mrem/year)

Soil exposure pathways limited to 20 mrem/year

	Area = 10,000 m2	
Isotope	DSR	**PRG**
	all time 0 (mrem/year per pCi/g)	(pCi/g)
U234	0.0269	743
U235	0.4122	49
U238	0.102	196
Total U pCi/g		**277**
U-238 as total U surrogate		135
Total U mg/kg		*406*

Th-23 DCGL	DSR t=0	**PRG**
	(mrem/year per pCi/g)	
Th-232		pCi/g
Ra-228	5.03	
Th-228	4.378	
Th-232	0.4518	
sum Th-232 + daughters	9.8598	**2.0**

Definitions:
DSR Dose to Source Ratios, developed in RESRAD
PRG Preliminary remediation goal

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary ... 6
Summary of Pathway Selections ... 11
Contaminated Zone and Total Dose Summary ... 12
Total Dose Components
Time = 0.000E+00 ... 13
Time = 1.000E+00 ... 14
Time = 2.137E+00 ... 15
Time = 3.000E+00 ... 16
Time = 1.655E+01 ... 17
Time = 3.000E+01 ... 18
Time = 5.800E+01 ... 19
Time = 8.260E+01 ... 20
Time = 3.000E+02 ... 21
Time = 1.000E+03 ... 22
Dose/Source Ratios Summed Over All Pathways ... 23
Single Radionuclide Soil Guidelines ... 24
Dose Per Nuclide Summed Over All Pathways ... 25
Soil Concentration Per Nuclide ... 26

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(6)

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(8)
D-1	U-234	2.830E-04	2.830E-04	DCF3(9)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(10)
D-1	U-238	2.550E-04	2.550E-04	DCF3(11)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(12)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(7,3)
D-34				

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.000E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.000E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	2.137E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	3.000E+00	1.000E+01	---	T(4)
R011	Times for calculations (yr)	1.655E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	3.000E+01	1.000E+02	---	T(6)
R011	Times for calculations (yr)	5.800E+01	3.000E+02	---	T(7)
R011	Times for calculations (yr)	8.260E+01	1.000E+03	---	T(8)
R011	Times for calculations (yr)	3.000E+02	0.000E+00	---	T(9)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Ra-228	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.310E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	1.500E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.150E+00	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	7.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.500E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.400E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.500E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Density of saturated zone (g/cm**3)	2.610E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	1.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.000E-02	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	3.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.540E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	7.000E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	2.000E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	8.700E-01	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	3.000E-01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.310E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.500E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.500E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	7.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.150E+00	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.231E-03	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(6,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.951E-06	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.951E-06	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.951E-06	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	3.853E+01	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	5.000E+01	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	2.200E-01	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.669E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	3.853E+01	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	5.000E+01	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	2.200E-01	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.669E-03	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	3.853E+01	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	5.000E+01	---	DCNUCU(11,1)
R016	Saturated zone (cm**3/g)	2.200E-01	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.669E-03	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.470E-02	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.917E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.965E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.231E-03	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	4.690E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	5.000E-02	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	10000.00 square meters	Ra-228	1.000E+00
Thickness:	1.00 meters	Th-228	1.000E+00
Cover Depth:	0.00 meters	Th-230	1.000E+00
		Th-232	1.000E+00
		U-234	1.000E+00
		U-235	1.000E+00
		U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 2.000E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	2.137E+00	3.000E+00	1.655E+01	3.000E+01	5.800E+01	8.260E+01	3.000E+02	1.000E+03
TDOSE(t):	1.044E+01	1.041E+01	1.038E+01	1.036E+01	1.015E+01	1.011E+01	1.017E+01	1.017E+01	1.025E+01	1.033E+01
M(t):	5.218E-01	5.206E-01	5.192E-01	5.180E-01	5.077E-01	5.055E-01	5.087E-01	5.087E-01	5.124E-01	5.165E-01

Maximum TDOSE(t): 1.044E+01 mrem/yr at t = 0.000E+00 years

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	3.648E+00	0.3496	8.128E-04	0.0001	0.000E+00	0.0000	1.341E+00	0.1285	0.000E+00	0.0000	0.000E+00	0.0000	3.972E-02	0.0038
Th-228	4.339E+00	0.4158	4.052E-03	0.0004	0.000E+00	0.0000	1.664E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	1.819E-02	0.0017
Th-230	1.849E-03	0.0002	4.560E-03	0.0004	0.000E+00	0.0000	1.371E-02	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	1.471E-02	0.0014
Th-232	2.090E-01	0.0200	2.297E-02	0.0022	0.000E+00	0.0000	1.443E-01	0.0138	0.000E+00	0.0000	0.000E+00	0.0000	7.561E-02	0.0072
U-234	2.078E-04	0.0000	1.839E-03	0.0002	0.000E+00	0.0000	1.729E-02	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	7.562E-03	0.0007
U-235	3.869E-01	0.0371	1.714E-03	0.0002	0.000E+00	0.0000	1.636E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	7.147E-03	0.0007
U-238	7.676E-02	0.0074	1.645E-03	0.0002	0.000E+00	0.0000	1.642E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	7.180E-03	0.0007
Total	8.662E+00	0.8300	3.760E-02	0.0036	0.000E+00	0.0000	1.566E+00	0.1501	0.000E+00	0.0000	0.000E+00	0.0000	1.701E-01	0.0163

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.030E+00	0.4820
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.378E+00	0.4195
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.483E-02	0.0033
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.518E-01	0.0433
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.690E-02	0.0026
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.122E-01	0.0395
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.020E-01	0.0098
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.044E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	4.455E+00	0.4279	1.871E-03	0.0002	0.000E+00	0.0000	1.190E+00	0.1143	0.000E+00	0.0000	0.000E+00	0.0000	4.024E-02	0.0039
Th-228	3.020E+00	0.2901	2.820E-03	0.0003	0.000E+00	0.0000	1.158E-02	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	1.266E-02	0.0012
Th-230	4.291E-03	0.0004	4.560E-03	0.0004	0.000E+00	0.0000	1.429E-02	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	1.473E-02	0.0014
Th-232	7.032E-01	0.0675	2.314E-02	0.0022	0.000E+00	0.0000	2.959E-01	0.0284	0.000E+00	0.0000	0.000E+00	0.0000	8.045E-02	0.0077
U-234	2.062E-04	0.0000	1.825E-03	0.0002	0.000E+00	0.0000	1.716E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	7.505E-03	0.0007
U-235	3.840E-01	0.0369	1.701E-03	0.0002	0.000E+00	0.0000	1.629E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	7.099E-03	0.0007
U-238	7.617E-02	0.0073	1.632E-03	0.0002	0.000E+00	0.0000	1.629E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	7.125E-03	0.0007
Total	8.643E+00	0.8301	3.755E-02	0.0036	0.000E+00	0.0000	1.561E+00	0.1500	0.000E+00	0.0000	0.000E+00	0.0000	1.698E-01	0.0163

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.687E+00	0.5462
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.047E+00	0.2927
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.787E-02	0.0036
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E+00	0.1059
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.669E-02	0.0026
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.091E-01	0.0393
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.012E-01	0.0097
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.041E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.137E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	4.812E+00	0.4635	2.507E-03	0.0002	0.000E+00	0.0000	1.036E+00	0.0998	0.000E+00	0.0000	0.000E+00	0.0000	3.888E-02	0.0037
Th-228	2.000E+00	0.1927	1.868E-03	0.0002	0.000E+00	0.0000	7.671E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	8.388E-03	0.0008
Th-230	7.055E-03	0.0007	4.560E-03	0.0004	0.000E+00	0.0000	1.498E-02	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	1.475E-02	0.0014
Th-232	1.344E+00	0.1294	2.345E-02	0.0023	0.000E+00	0.0000	4.482E-01	0.0432	0.000E+00	0.0000	0.000E+00	0.0000	8.589E-02	0.0083
U-234	2.045E-04	0.0000	1.809E-03	0.0002	0.000E+00	0.0000	1.701E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	7.439E-03	0.0007
U-235	3.807E-01	0.0367	1.687E-03	0.0002	0.000E+00	0.0000	1.621E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	7.044E-03	0.0007
U-238	7.551E-02	0.0073	1.618E-03	0.0002	0.000E+00	0.0000	1.615E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	7.064E-03	0.0007
Total	8.620E+00	0.8302	3.749E-02	0.0036	0.000E+00	0.0000	1.556E+00	0.1499	0.000E+00	0.0000	0.000E+00	0.0000	1.695E-01	0.0163

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.137E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.890E+00	0.5672
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.018E+00	0.1944
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.134E-02	0.0040
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.901E+00	0.1831
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.646E-02	0.0025
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.056E-01	0.0391
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.003E-01	0.0097
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.038E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	4.829E+00	0.4661	2.725E-03	0.0003	0.000E+00	0.0000	9.323E-01	0.0900	0.000E+00	0.0000	0.000E+00	0.0000	3.704E-02	0.0036
Th-228	1.463E+00	0.1412	1.366E-03	0.0001	0.000E+00	0.0000	5.611E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	6.136E-03	0.0006
Th-230	9.142E-03	0.0009	4.560E-03	0.0004	0.000E+00	0.0000	1.552E-02	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	1.477E-02	0.0014
Th-232	1.847E+00	0.1782	2.372E-02	0.0023	0.000E+00	0.0000	5.505E-01	0.0531	0.000E+00	0.0000	0.000E+00	0.0000	8.984E-02	0.0087
U-234	2.032E-04	0.0000	1.797E-03	0.0002	0.000E+00	0.0000	1.690E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	7.390E-03	0.0007
U-235	3.781E-01	0.0365	1.676E-03	0.0002	0.000E+00	0.0000	1.615E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	7.004E-03	0.0007
U-238	7.501E-02	0.0072	1.607E-03	0.0002	0.000E+00	0.0000	1.604E-02	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	7.017E-03	0.0007
Total	8.601E+00	0.8302	3.745E-02	0.0036	0.000E+00	0.0000	1.553E+00	0.1499	0.000E+00	0.0000	0.000E+00	0.0000	1.692E-01	0.0163

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.801E+00	0.5599
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.476E+00	0.1425
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.399E-02	0.0042
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.511E+00	0.2423
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.629E-02	0.0025
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.030E-01	0.0389
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.968E-02	0.0096
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.036E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.655E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	1.285E+00	0.1266	8.714E-04	0.0001	0.000E+00	0.0000	1.734E-01	0.0171	0.000E+00	0.0000	0.000E+00	0.0000	8.486E-03	0.0008
Th-228	1.079E-02	0.0011	1.008E-05	0.0000	0.000E+00	0.0000	4.139E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.526E-05	0.0000
Th-230	4.084E-02	0.0040	4.560E-03	0.0004	0.000E+00	0.0000	2.549E-02	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	1.526E-02	0.0015
Th-232	6.673E+00	0.6571	2.682E-02	0.0026	0.000E+00	0.0000	1.289E+00	0.1269	0.000E+00	0.0000	0.000E+00	0.0000	1.233E-01	0.0121
U-234	1.861E-04	0.0000	1.620E-03	0.0002	0.000E+00	0.0000	1.523E-02	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	6.663E-03	0.0007
U-235	3.409E-01	0.0336	1.522E-03	0.0001	0.000E+00	0.0000	1.529E-02	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	6.412E-03	0.0006
U-238	6.761E-02	0.0067	1.449E-03	0.0001	0.000E+00	0.0000	1.446E-02	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	6.325E-03	0.0006
Total	8.418E+00	0.8290	3.685E-02	0.0036	0.000E+00	0.0000	1.533E+00	0.1510	0.000E+00	0.0000	0.000E+00	0.0000	1.665E-01	0.0164

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.655E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.468E+00	0.1446
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.089E-02	0.0011
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.615E-02	0.0085
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.112E+00	0.7988
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.370E-02	0.0023
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.641E-01	0.0359
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.984E-02	0.0088
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	2.429E-01	0.0240	1.654E-04	0.0000	0.000E+00	0.0000	3.239E-02	0.0032	0.000E+00	0.0000	0.000E+00	0.0000	1.597E-03	0.0002
Th-228	8.256E-05	0.0000	7.710E-08	0.0000	0.000E+00	0.0000	3.166E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.462E-07	0.0000
Th-230	7.038E-02	0.0070	4.561E-03	0.0005	0.000E+00	0.0000	3.718E-02	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	1.598E-02	0.0016
Th-232	7.690E+00	0.7606	2.751E-02	0.0027	0.000E+00	0.0000	1.425E+00	0.1410	0.000E+00	0.0000	0.000E+00	0.0000	1.300E-01	0.0129
U-234	1.743E-04	0.0000	1.462E-03	0.0001	0.000E+00	0.0000	1.374E-02	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	6.011E-03	0.0006
U-235	3.076E-01	0.0304	1.388E-03	0.0001	0.000E+00	0.0000	1.450E-02	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	5.895E-03	0.0006
U-238	6.098E-02	0.0060	1.307E-03	0.0001	0.000E+00	0.0000	1.304E-02	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	5.705E-03	0.0006
Total	8.372E+00	0.8281	3.639E-02	0.0036	0.000E+00	0.0000	1.536E+00	0.1519	0.000E+00	0.0000	0.000E+00	0.0000	1.652E-01	0.0163

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.771E-01	0.0274
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.330E-05	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.281E-01	0.0127
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.272E+00	0.9172
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.139E-02	0.0021
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.294E-01	0.0326
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.104E-02	0.0080
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.011E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.800E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	7.385E-03	0.0007	5.030E-06	0.0000	0.000E+00	0.0000	9.841E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.853E-05	0.0000
Th-228	3.242E-09	0.0000	3.028E-12	0.0000	0.000E+00	0.0000	1.243E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.360E-11	0.0000
Th-230	1.262E-01	0.0124	4.562E-03	0.0004	0.000E+00	0.0000	6.339E-02	0.0062	0.000E+00	0.0000	0.000E+00	0.0000	1.778E-02	0.0017
Th-232	7.916E+00	0.7780	2.766E-02	0.0027	0.000E+00	0.0000	1.455E+00	0.1430	0.000E+00	0.0000	0.000E+00	0.0000	1.315E-01	0.0129
U-234	1.632E-04	0.0000	1.181E-03	0.0001	0.000E+00	0.0000	1.110E-02	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	4.853E-03	0.0005
U-235	2.485E-01	0.0244	1.152E-03	0.0001	0.000E+00	0.0000	1.300E-02	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	4.977E-03	0.0005
U-238	4.920E-02	0.0048	1.054E-03	0.0001	0.000E+00	0.0000	1.052E-02	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	4.603E-03	0.0005
Total	8.348E+00	0.8204	3.561E-02	0.0035	0.000E+00	0.0000	1.554E+00	0.1528	0.000E+00	0.0000	0.000E+00	0.0000	1.637E-01	0.0161

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.800E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.423E-03	0.0008
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.271E-09	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.120E-01	0.0208
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.531E+00	0.9367
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.530E-02	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	4.259E-02	0.0042
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.391E-02	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	2.915E-01	0.0287
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.403E-02	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	8.941E-02	0.0088
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.323E-02	0.0072	0.000E+00	0.0000	0.000E+00	0.0000	1.017E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 8.260E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-														
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	3.430E-04	0.0000	2.336E-07	0.0000	0.000E+00	0.0000	4.570E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.254E-06	0.0000
Th-228	4.365E-13	0.0000	4.076E-16	0.0000	0.000E+00	0.0000	1.674E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.830E-15	0.0000
Th-230	1.696E-01	0.0167	4.564E-03	0.0004	0.000E+00	0.0000	8.595E-02	0.0084	0.000E+00	0.0000	0.000E+00	0.0000	1.943E-02	0.0019
Th-232	7.922E+00	0.7787	2.766E-02	0.0027	0.000E+00	0.0000	1.456E+00	0.1431	0.000E+00	0.0000	0.000E+00	0.0000	1.315E-01	0.0129
U-234	1.652E-04	0.0000	9.784E-04	0.0001	0.000E+00	0.0000	9.203E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	4.022E-03	0.0004
U-235	2.060E-01	0.0203	9.808E-04	0.0001	0.000E+00	0.0000	1.179E-02	0.0012	0.000E+00	0.0000	0.000E+00	0.0000	4.301E-03	0.0004
U-238	4.074E-02	0.0040	8.731E-04	0.0001	0.000E+00	0.0000	8.715E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	3.812E-03	0.0004
Total	8.339E+00	0.8197	3.506E-02	0.0034	0.000E+00	0.0000	1.572E+00	0.1545	0.000E+00	0.0000	0.000E+00	0.0000	1.631E-01	0.0160

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 8.260E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-														
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.912E-04	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.404E-13	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.796E-01	0.0275
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.537E+00	0.9375
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.221E-02	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	3.658E-02	0.0036
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.100E-02	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	2.441E-01	0.0240
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.110E-02	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	7.524E-02	0.0074
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.432E-02	0.0063	0.000E+00	0.0000	0.000E+00	0.0000	1.017E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	5.678E-16	0.0000	3.868E-19	0.0000	0.000E+00	0.0000	7.567E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.731E-18	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.963E-01	0.0387	4.569E-03	0.0004	0.000E+00	0.0000	2.122E-01	0.0207	0.000E+00	0.0000	0.000E+00	0.0000	2.891E-02	0.0028
Th-232	7.914E+00	0.7722	2.763E-02	0.0027	0.000E+00	0.0000	1.455E+00	0.1419	0.000E+00	0.0000	0.000E+00	0.0000	1.314E-01	0.0128
U-234	3.461E-04	0.0000	1.889E-04	0.0000	0.000E+00	0.0000	1.903E-03	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	7.836E-04	0.0001
U-235	3.947E-02	0.0039	2.439E-04	0.0000	0.000E+00	0.0000	4.356E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	1.194E-03	0.0001
U-238	7.689E-03	0.0008	1.649E-04	0.0000	0.000E+00	0.0000	1.646E-03	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	7.199E-04	0.0001
Total	8.358E+00	0.8155	3.280E-02	0.0032	0.000E+00	0.0000	1.675E+00	0.1634	0.000E+00	0.0000	0.000E+00	0.0000	1.630E-01	0.0159

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.476E-16	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.420E-01	0.0626
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.527E+00	0.9296
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.043E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	1.026E-02	0.0010
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.711E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	5.197E-02	0.0051
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.699E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	1.692E-02	0.0017
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.045E-02	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	1.025E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.162E-01	0.0500	4.534E-03	0.0004	0.000E+00	0.0000	2.797E-01	0.0271	0.000E+00	0.0000	0.000E+00	0.0000	3.391E-02	0.0033
Th-232	7.886E+00	0.7634	2.754E-02	0.0027	0.000E+00	0.0000	1.449E+00	0.1403	0.000E+00	0.0000	0.000E+00	0.0000	1.309E-01	0.0127
U-234	5.983E-04	0.0001	6.183E-06	0.0000	0.000E+00	0.0000	3.321E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.301E-05	0.0000
U-235	2.043E-04	0.0000	3.205E-06	0.0000	0.000E+00	0.0000	9.510E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.901E-05	0.0000
U-238	3.605E-05	0.0000	7.723E-07	0.0000	0.000E+00	0.0000	7.804E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.377E-06	0.0000
Total	8.403E+00	0.8134	3.208E-02	0.0031	0.000E+00	0.0000	1.730E+00	0.1674	0.000E+00	0.0000	0.000E+00	0.0000	1.649E-01	0.0160

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.344E-01	0.0808
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.494E+00	0.9190
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.747E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.154E-03	0.0001
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.269E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.485E-04	0.0001
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.664E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.144E-04	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.680E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.033E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	2.137E+00	3.000E+00	1.655E+01	3.000E+01	5.800E+01	8.260E+01	3.000E+02	1.000E+03
Ra-228+D	Ra-228+D	1.000E+00	4.216E+00	3.721E+00	3.229E+00	2.899E+00	5.346E-01	9.980E-02	3.033E-03	1.408E-04	2.332E-16	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	8.142E-01	1.966E+00	2.661E+00	2.902E+00	9.336E-01	1.773E-01	5.390E-03	2.503E-04	4.144E-16	0.000E+00
Ra-228+D	äDSR(j)		5.030E+00	5.687E+00	5.890E+00	5.801E+00	1.468E+00	2.771E-01	8.423E-03	3.912E-04	6.476E-16	0.000E+00
Th-228+D	Th-228+D	1.000E+00	4.378E+00	3.047E+00	2.018E+00	1.476E+00	1.089E-02	8.330E-05	3.271E-09	4.404E-13	0.000E+00	0.000E+00
Th-230	Th-230	1.000E+00	3.333E-02	3.333E-02	3.333E-02	3.332E-02	3.332E-02	3.331E-02	3.330E-02	3.329E-02	3.319E-02	3.286E-02
Th-230	Ra-226+D	1.000E+00	1.496E-03	4.509E-03	7.922E-03	1.050E-02	4.964E-02	8.612E-02	1.551E-01	2.086E-01	4.885E-01	6.364E-01
Th-230	Pb-210+D	1.000E+00	5.606E-06	3.436E-05	9.759E-05	1.664E-04	3.184E-03	8.668E-03	2.361E-02	3.765E-02	1.203E-01	1.651E-01
Th-230	äDSR(j)		3.483E-02	3.787E-02	4.134E-02	4.399E-02	8.615E-02	1.281E-01	2.120E-01	2.796E-01	6.420E-01	8.344E-01
Th-232	Th-232	1.000E+00	1.634E-01	1.634E-01	1.634E-01	1.634E-01	1.634E-01	1.634E-01	1.634E-01	1.633E-01	1.632E-01	1.626E-01
Th-232	Ra-228+D	1.000E+00	2.542E-01	7.310E-01	1.207E+00	1.525E+00	3.809E+00	4.229E+00	4.322E+00	4.324E+00	4.320E+00	4.305E+00
Th-232	Th-228+D	1.000E+00	3.425E-02	2.082E-01	5.312E-01	8.223E-01	4.139E+00	4.880E+00	5.045E+00	5.050E+00	5.044E+00	5.026E+00
Th-232	äDSR(j)		4.518E-01	1.103E+00	1.901E+00	2.511E+00	8.112E+00	9.272E+00	9.531E+00	9.537E+00	9.527E+00	9.494E+00
U-234	U-234	1.000E+00	2.690E-02	2.669E-02	2.646E-02	2.629E-02	2.369E-02	2.137E-02	4.254E-02	3.649E-02	9.735E-03	1.868E-04
U-234	Th-230	1.000E+00	1.553E-07	4.539E-07	7.896E-07	1.042E-06	4.800E-06	8.162E-06	1.415E-05	1.844E-05	3.511E-05	3.861E-05
U-234	Ra-226+D	1.000E+00	4.448E-09	3.135E-08	9.446E-08	1.652E-07	3.696E-06	1.120E-05	3.684E-05	6.747E-05	4.007E-04	7.376E-04
U-234	Pb-210+D	1.000E+00	1.340E-11	1.735E-10	8.178E-10	1.824E-09	1.671E-07	8.205E-07	4.331E-06	9.816E-06	9.336E-05	1.913E-04
U-234	äDSR(j)		2.690E-02	2.669E-02	2.646E-02	2.629E-02	2.370E-02	2.139E-02	4.259E-02	3.658E-02	1.026E-02	1.154E-03
U-235+D	U-235+D	1.000E+00	4.121E-01	4.090E-01	4.054E-01	4.028E-01	3.630E-01	3.274E-01	2.881E-01	2.397E-01	4.794E-02	3.575E-04
U-235+D	Pa-231	1.000E+00	3.029E-05	9.268E-05	1.628E-04	2.154E-04	9.621E-04	1.572E-03	2.495E-03	3.003E-03	2.509E-03	9.312E-05
U-235+D	Ac-227+D	1.000E+00	2.989E-07	1.943E-06	5.618E-06	9.614E-06	1.718E-04	4.300E-04	9.914E-04	1.383E-03	1.521E-03	9.788E-05
U-235+D	äDSR(j)		4.122E-01	4.091E-01	4.056E-01	4.030E-01	3.641E-01	3.294E-01	2.915E-01	2.441E-01	5.197E-02	5.485E-04
U-238	U-238	5.400E-05	1.301E-06	1.291E-06	1.280E-06	1.271E-06	1.146E-06	1.034E-06	2.065E-06	1.772E-06	4.733E-07	9.110E-09
U-238+D	U-238+D	9.999E-01	1.020E-01	1.012E-01	1.003E-01	9.968E-02	8.984E-02	8.103E-02	8.940E-02	7.523E-02	1.691E-02	2.135E-04
U-238+D	U-234	9.999E-01	3.808E-08	1.135E-07	1.978E-07	2.608E-07	1.145E-06	1.848E-06	7.055E-06	8.597E-06	8.297E-06	5.305E-07
U-238+D	Th-230	9.999E-01	1.501E-13	1.012E-12	3.000E-12	5.214E-12	1.136E-10	3.394E-10	1.088E-09	1.945E-09	9.674E-09	1.425E-08
U-238+D	Ra-226+D	9.999E-01	3.130E-15	4.736E-14	2.398E-13	5.509E-13	5.865E-11	3.141E-10	1.985E-09	5.119E-09	8.607E-08	2.655E-07
U-238+D	Pb-210+D	9.999E-01	7.987E-18	2.115E-16	1.630E-15	4.734E-15	2.056E-12	1.814E-11	3.915E-10	1.386E-09	2.103E-08	7.132E-08
U-238+D	äDSR(j)		1.020E-01	1.012E-01	1.003E-01	9.968E-02	8.984E-02	8.103E-02	8.940E-02	7.524E-02	1.692E-02	2.144E-04

The DSR includes contributions from associated (half-life ó 180 days) daughters.

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.000E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	2.137E+00	3.000E+00	1.655E+01	3.000E+01	5.800E+01	8.260E+01	3.000E+02	1.000E+03
Ra-228	3.976E+00	3.517E+00	3.396E+00	3.448E+00	1.362E+01	7.218E+01	2.375E+03	5.113E+04	*2.726E+14	*2.726E+14
Th-228	4.568E+00	6.563E+00	9.909E+00	1.355E+01	1.836E+03	2.401E+05	6.114E+09	4.542E+13	*8.195E+14	*8.195E+14
Th-230	5.743E+02	5.281E+02	4.837E+02	4.546E+02	2.322E+02	1.561E+02	9.435E+01	7.154E+01	3.115E+01	2.397E+01
Th-232	4.427E+01	1.814E+01	1.052E+01	7.966E+00	2.466E+00	2.157E+00	2.098E+00	2.097E+00	2.099E+00	2.107E+00
U-234	7.435E+02	7.492E+02	7.558E+02	7.608E+02	8.439E+02	9.351E+02	4.696E+02	5.467E+02	1.948E+03	1.733E+04
U-235	4.853E+01	4.889E+01	4.931E+01	4.963E+01	5.492E+01	6.071E+01	6.860E+01	8.193E+01	3.848E+02	3.646E+04
U-238	1.961E+02	1.976E+02	1.993E+02	2.006E+02	2.226E+02	2.468E+02	2.237E+02	2.658E+02	1.182E+03	9.327E+04

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Ra-228	1.000E+00	2.126 ñ 0.004	5.890E+00	3.396E+00	5.030E+00	3.976E+00
Th-228	1.000E+00	0.000E+00	4.378E+00	4.568E+00	4.378E+00	4.568E+00
Th-230	1.000E+00	1.000E+03	8.344E-01	2.397E+01	3.483E-02	5.743E+02
Th-232	1.000E+00	82.2 ñ 0.2	9.537E+00	2.097E+00	4.518E-01	4.427E+01
U-234	1.000E+00	54.2 ñ 0.1	4.361E-02	4.586E+02	2.690E-02	7.435E+02
U-235	1.000E+00	0.000E+00	4.122E-01	4.853E+01	4.122E-01	4.853E+01
U-238	1.000E+00	0.000E+00	1.020E-01	1.961E+02	1.020E-01	1.961E+02

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide	Parent	THF(i)	DOSE(j,t), mrem/yr									
(j)	(i)	t=	0.000E+00	1.000E+00	2.137E+00	3.000E+00	1.655E+01	3.000E+01	5.800E+01	8.260E+01	3.000E+02	1.000E+03
Ra-228	Ra-228	1.000E+00	4.216E+00	3.721E+00	3.229E+00	2.899E+00	5.346E-01	9.980E-02	3.033E-03	1.408E-04	2.332E-16	0.000E+00
Ra-228	Th-232	1.000E+00	2.542E-01	7.310E-01	1.207E+00	1.525E+00	3.809E+00	4.229E+00	4.322E+00	4.324E+00	4.320E+00	4.305E+00
Ra-228	äDOSE(j)		4.470E+00	4.452E+00	4.435E+00	4.424E+00	4.344E+00	4.329E+00	4.325E+00	4.324E+00	4.320E+00	4.305E+00
Th-228	Ra-228	1.000E+00	8.142E-01	1.966E+00	2.661E+00	2.902E+00	9.336E-01	1.773E-01	5.390E-03	2.503E-04	4.144E-16	0.000E+00
Th-228	Th-228	1.000E+00	4.378E+00	3.047E+00	2.018E+00	1.476E+00	1.089E-02	8.330E-05	3.271E-09	4.404E-13	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	3.425E-02	2.082E-01	5.312E-01	8.223E-01	4.139E+00	4.880E+00	5.045E+00	5.050E+00	5.044E+00	5.026E+00
Th-228	äDOSE(j)		5.226E+00	5.222E+00	5.210E+00	5.200E+00	5.084E+00	5.057E+00	5.051E+00	5.050E+00	5.044E+00	5.026E+00
Th-230	Th-230	1.000E+00	3.333E-02	3.333E-02	3.333E-02	3.332E-02	3.332E-02	3.331E-02	3.330E-02	3.329E-02	3.319E-02	3.286E-02
Th-230	U-234	1.000E+00	1.553E-07	4.539E-07	7.896E-07	1.042E-06	4.800E-06	8.162E-06	1.415E-05	1.844E-05	3.511E-05	3.861E-05
Th-230	U-238	9.999E-01	1.501E-13	1.012E-12	3.000E-12	5.214E-12	1.136E-10	3.394E-10	1.088E-09	1.945E-09	9.674E-09	1.425E-08
Th-230	äDOSE(j)		3.333E-02	3.333E-02	3.333E-02	3.333E-02	3.332E-02	3.332E-02	3.331E-02	3.331E-02	3.322E-02	3.290E-02
Ra-226	Th-230	1.000E+00	1.496E-03	4.509E-03	7.922E-03	1.050E-02	4.964E-02	8.612E-02	1.551E-01	2.086E-01	4.885E-01	6.364E-01
Ra-226	U-234	1.000E+00	4.448E-09	3.135E-08	9.446E-08	1.652E-07	3.696E-06	1.120E-05	3.684E-05	6.747E-05	4.007E-04	7.376E-04
Ra-226	U-238	9.999E-01	3.130E-15	4.736E-14	2.398E-13	5.509E-13	5.865E-11	3.141E-10	1.985E-09	5.119E-09	8.607E-08	2.655E-07
Ra-226	äDOSE(j)		1.496E-03	4.509E-03	7.922E-03	1.050E-02	4.965E-02	8.613E-02	1.551E-01	2.087E-01	4.889E-01	6.372E-01
Pb-210	Th-230	1.000E+00	5.606E-06	3.436E-05	9.759E-05	1.664E-04	3.184E-03	8.668E-03	2.361E-02	3.765E-02	1.203E-01	1.651E-01
Pb-210	U-234	1.000E+00	1.340E-11	1.735E-10	8.178E-10	1.824E-09	1.671E-07	8.205E-07	4.331E-06	9.816E-06	9.336E-05	1.913E-04
Pb-210	U-238	9.999E-01	7.987E-18	2.115E-16	1.630E-15	4.734E-15	2.056E-12	1.814E-11	3.915E-10	1.386E-09	2.103E-08	7.132E-08
Pb-210	äDOSE(j)		5.606E-06	3.436E-05	9.759E-05	1.664E-04	3.184E-03	8.669E-03	2.361E-02	3.766E-02	1.204E-01	1.653E-01
Th-232	Th-232	1.000E+00	1.634E-01	1.634E-01	1.634E-01	1.634E-01	1.634E-01	1.634E-01	1.634E-01	1.633E-01	1.632E-01	1.626E-01
U-234	U-234	1.000E+00	2.690E-02	2.669E-02	2.646E-02	2.629E-02	2.369E-02	2.137E-02	4.254E-02	3.649E-02	9.735E-03	1.868E-04
U-234	U-238	9.999E-01	3.808E-08	1.135E-07	1.978E-07	2.608E-07	1.145E-06	1.848E-06	7.055E-06	8.597E-06	8.297E-06	5.305E-07
U-234	äDOSE(j)		2.690E-02	2.669E-02	2.646E-02	2.629E-02	2.369E-02	2.137E-02	4.254E-02	3.650E-02	9.744E-03	1.873E-04
U-235	U-235	1.000E+00	4.121E-01	4.090E-01	4.054E-01	4.028E-01	3.630E-01	3.274E-01	2.881E-01	2.397E-01	4.794E-02	3.575E-04
Pa-231	U-235	1.000E+00	3.029E-05	9.268E-05	1.628E-04	2.154E-04	9.621E-04	1.572E-03	2.495E-03	3.003E-03	2.509E-03	9.312E-05
Ac-227	U-235	1.000E+00	2.989E-07	1.943E-06	5.618E-06	9.614E-06	1.718E-04	4.300E-04	9.914E-04	1.383E-03	1.521E-03	9.788E-05
U-238	U-238	5.400E-05	1.301E-06	1.291E-06	1.280E-06	1.271E-06	1.146E-06	1.034E-06	2.065E-06	1.772E-06	4.733E-07	9.110E-09
U-238	U-238	9.999E-01	1.020E-01	1.012E-01	1.003E-01	9.968E-02	8.984E-02	8.103E-02	8.940E-02	7.523E-02	1.691E-02	2.135E-04
U-238	äDOSE(j)		1.020E-01	1.012E-01	1.003E-01	9.968E-02	8.984E-02	8.103E-02	8.940E-02	7.523E-02	1.691E-02	2.135E-04

THF(i) is the thread fraction of the parent nuclide.

Summary : GUTERL Resident Basic Terrestrial 042909 1520hrs - 10,000 m2 DW turned off 20 m
File : C:\RESRAD_FAMILY\RESRAD\6.5\USERFILES\GUTERL RESIDENT BASIC TERRESTRIAL_FS.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	2.137E+00	3.000E+00	1.655E+01	3.000E+01	5.800E+01	8.260E+01	3.000E+02	1.000E+03
Ra-228	Ra-228	1.000E+00	1.000E+00	8.827E-01	7.659E-01	6.877E-01	1.268E-01	2.367E-02	7.193E-04	3.341E-05	5.531E-17	0.000E+00
Ra-228	Th-232	1.000E+00	0.000E+00	1.133E-01	2.261E-01	3.017E-01	8.435E-01	9.431E-01	9.652E-01	9.657E-01	9.647E-01	9.614E-01
Ra-228	äS(j):		1.000E+00	9.960E-01	9.921E-01	9.894E-01	9.703E-01	9.668E-01	9.659E-01	9.657E-01	9.647E-01	9.614E-01
Th-228	Ra-228	1.000E+00	0.000E+00	2.847E-01	4.651E-01	5.346E-01	1.896E-01	3.608E-02	1.097E-03	5.096E-05	8.436E-17	0.000E+00
Th-228	Th-228	1.000E+00	1.000E+00	6.961E-01	4.610E-01	3.372E-01	2.488E-03	1.903E-05	7.472E-10	1.006E-13	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.862E-02	7.139E-02	1.238E-01	7.804E-01	9.311E-01	9.648E-01	9.657E-01	9.647E-01	9.614E-01
Th-228	äS(j):		1.000E+00	9.993E-01	9.975E-01	9.956E-01	9.726E-01	9.672E-01	9.659E-01	9.657E-01	9.647E-01	9.614E-01
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.998E-01	9.996E-01	9.992E-01	9.988E-01	9.958E-01	9.861E-01
Th-230	U-234	1.000E+00	0.000E+00	8.967E-06	1.908E-05	2.670E-05	1.399E-04	2.412E-04	4.212E-04	5.504E-04	1.053E-03	1.159E-03
Th-230	U-238	9.999E-01	0.000E+00	1.269E-11	5.764E-11	1.131E-10	3.212E-09	9.863E-09	3.208E-08	5.769E-08	2.897E-07	4.275E-07
Th-230	äS(j):		1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.996E-01	9.994E-01	9.969E-01	9.873E-01
Ra-226	Th-230	1.000E+00	0.000E+00	4.322E-04	9.212E-04	1.291E-03	6.899E-03	1.213E-02	2.201E-02	2.968E-02	6.978E-02	9.098E-02
Ra-226	U-234	1.000E+00	0.000E+00	1.942E-09	8.827E-09	1.733E-08	4.991E-07	1.553E-06	5.188E-06	9.550E-06	5.719E-05	1.054E-04
Ra-226	U-238	9.999E-01	0.000E+00	1.833E-15	1.779E-14	4.901E-14	7.690E-12	4.285E-11	2.698E-10	6.915E-10	1.218E-08	3.783E-08
Ra-226	äS(j):		0.000E+00	4.322E-04	9.212E-04	1.291E-03	6.900E-03	1.213E-02	2.201E-02	2.969E-02	6.983E-02	9.109E-02
Pb-210	Th-230	1.000E+00	0.000E+00	6.647E-06	2.991E-05	5.831E-05	1.501E-03	4.216E-03	1.169E-02	1.875E-02	6.041E-02	8.297E-02
Pb-210	U-234	1.000E+00	0.000E+00	1.997E-11	1.924E-10	5.269E-10	7.594E-08	3.910E-07	2.123E-06	4.853E-06	4.678E-05	9.593E-05
Pb-210	U-238	9.999E-01	0.000E+00	1.416E-17	2.918E-16	1.123E-15	9.010E-13	8.471E-12	8.978E-11	2.932E-10	9.324E-09	3.427E-08
Pb-210	äS(j):		0.000E+00	6.647E-06	2.991E-05	5.831E-05	1.501E-03	4.216E-03	1.169E-02	1.876E-02	6.045E-02	8.306E-02
Th-232	Th-232	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01	9.997E-01	9.996E-01	9.985E-01	9.951E-01
U-234	U-234	1.000E+00	1.000E+00	9.924E-01	9.837E-01	9.772E-01	8.808E-01	7.944E-01	6.408E-01	5.306E-01	1.001E-01	4.656E-04
U-234	U-238	9.999E-01	0.000E+00	2.813E-06	5.959E-06	8.311E-06	4.132E-05	6.756E-05	1.054E-04	1.243E-04	8.516E-05	1.322E-06
U-234	äS(j):		1.000E+00	9.924E-01	9.837E-01	9.773E-01	8.808E-01	7.945E-01	6.409E-01	5.307E-01	1.002E-01	4.669E-04
U-235	U-235	1.000E+00	1.000E+00	9.924E-01	9.837E-01	9.773E-01	8.808E-01	7.945E-01	6.409E-01	5.307E-01	1.002E-01	4.669E-04
Pa-231	U-235	1.000E+00	0.000E+00	2.101E-05	4.456E-05	6.219E-05	3.129E-04	5.176E-04	8.274E-04	9.971E-04	8.337E-04	2.652E-05
Ac-227	U-235	1.000E+00	0.000E+00	3.301E-07	1.474E-06	2.855E-06	6.698E-05	1.724E-04	4.039E-04	5.645E-04	6.110E-04	2.059E-05
U-238	U-238	5.400E-05	5.400E-05	5.359E-05	5.312E-05	5.277E-05	4.756E-05	4.290E-05	3.461E-05	2.866E-05	5.410E-06	2.521E-08
U-238	U-238	9.999E-01	9.999E-01	9.923E-01	9.837E-01	9.772E-01	8.807E-01	7.944E-01	6.409E-01	5.307E-01	1.002E-01	4.669E-04
U-238	äS(j):		1.000E+00	9.924E-01	9.837E-01	9.773E-01	8.808E-01	7.945E-01	6.409E-01	5.307E-01	1.002E-01	4.669E-04

THF(i) is the thread fraction of the parent nuclide.

RESCALC.EXE execution time = 4.06 seconds

APPENDIX H

RESRAD-BUILD: Buildings

Building Surface Derived Concentration Guideline Levels and Derived Concentration Guideline Level Equivalents for Measurement

Former Guterl Specialty Steel Corporation

FUSRAP Site

October 22, 2014

1.0 Introduction

Derived Concentration Guideline Levels (DCGLs) for building surfaces and the DCGL Equivalents for particulate radiation measurements were calculated for the Guterl FUSRAP Project.

2.0 Methodology

The calculation of DCGLs for Guterl buildings were performed using the "RESRAD-BUILD, Version 3.5" computer code developed by the Environmental Assessment Division of Argonne National Laboratory. This widely used program calculates radiological doses to human receptors in buildings contaminated with radioactive material.

Doses were calculated for use as unit dose factors for each of the project radioactive materials of concern (ROCs); ^{234}U, ^{235}U, ^{238}U, ^{230}Th, ^{232}Th, and ^{226}Ra. Existing ratios of these nuclides at Guterl Steel were derived from data from the *Guterl Remedial Investigation (RI) Report* using only significantly elevated "soils in buildings" data. Based on these ratios, provided in Table 1, appropriate weighting was given to the contributions of each of the individual radioactive materials to particulate measurement of surface contamination.

Table 1: Radionuclide Distribution Relative Activity

Radionuclide	^{234}U	^{235}U	^{238}U	^{230}Th	^{232}Th	^{226}Ra	Total
Relative Activity	0.48	0.03	0.48	0.0003	0.010	0.0002	1.000

*Data from the Remedial Investigation Report Former Guterl Specialty Steel Corporation; Tables 3-9, 3-10, and 6-3.

Alpha and beta decay scheme particulate emissions were calculated for each of the ROCs and are provided in Table 2. Since beta measurement is preferred over other radiations for direct surface contamination measurement, due mainly to the physical properties of the emissions and self-absorption issues associated with direct measurement of alpha particles, DCGL equivalents for direct measurement were developed for surface beta emission rates, i.e. betas/minute/100 cm^2. For removable activity DCGLs having similar units of emissions/minute/100 cm^2 for both alpha and beta radiations were developed because, on a smear, alpha contamination is more easily measured (lower self-absorption) than on building surfaces.

Table 2: Alpha and Beta Emissions per Disintegration

Radionuclide	α/d	β/d
^{234}U	1	0
^{235}U	1	1
^{238}U	1	2
^{230}Th	1	0
$^{232}Th+D$	7	3
^{226}Ra	1	0

Notes:
D= Daughters
d= disintegrations

The main contribution to dose and particulate emissions for DCGL and DCGL Equivalent for Measurement development is due to the uranium nuclides, which constitute the majority of activity found at the site. Contributions from the remaining ROCs were much less significant.

Three potential critical groups were analyzed, as in the RI Risk Assessment, the on-site worker, the construction worker and the juvenile trespasser. The on-site worker is modeled here as an office worker or assembly line worker working an 8-hour day for a year. The construction worker is modeled in a 3-month renovation scenario and the juvenile trespasser is occasionally present at the site for a limited duration during the year. The project DCLGs and DCGL Equivalent for Measurement represent the most restrictive contamination levels for any of these potential critical groups. Exposure pathways in RESRSAD-BUILD included:

1. External exposure to radiactive materials and submersion in airborne radioactive particulates.
2. Inhalation of airborne radioactive particulates and radon decay products.
3. Ingestion of radioactive materials from the source and building surfaces.

Dose modeling and nuclide intake unit dose factors used ICRP 60 methodology. The single receptor was placed in the center of an area of surface contamination and dose was calculated at a height of 1 meter above the surface. A single room, area 36 m^2, was assumed since many "small" rooms are present at the site within the relatively large production buildings. Various input parameters were chosen for the code including a combination of default RESRAD-BUILD and site-specific parameters along with the rationale for use are provided in Table 3. For removable contamination DCGL the removable fraction was assumed to be 1.

Table 3: Buildings Input Parameters for DCGLs

	Guterl Buildings Input Parameters for DCGL						
	Parameter	Units	OW	CW	JT	RESRAD Default	Rationale and assumptions used
Time	Exposure duration	days	365	90	10	365	RESRAD-Build default value for year long dose assessment is 365 days; 30 days assumed for CW for building renovation; assumed 10 d/yr for JT
	Indoor fraction		0.23	0.351	0.42	0.5	RESRAD-BUILD User's Manual Ver 3, Section J.1.2; Assumed OW- 2000 hr/8760 hr/yr = 0.23; CW - 8.4 hr/d spent working for 90 days = 0.351 ; JT - 10 hr/d for 10 d/yr = 0.42
	Evaluation time	days	0	0	0		Beginning time for the exposure duration. Maximun dose at time = 0
	Time integration		17	17	17	17	RESRAD-Build default value
Building	Number of rooms		1	1	1	1	A single room is modeled to approximate small room in large building
	Deposition velocity	m/s	0.01	0.01	0.01	0.01	RESRAD-Build default value
	Resuspension rate	1/s	5.00E-07	5.00E-07	5.00E-07	5.00E-07	RESRAD-Build default value
	Building exchange rate	1/h	1	1	1	0.8	If building was renovated 1 exchange/hr is reasonable. Juvenile trespasser in building conservatively estimated for current condition
	Room area	m^2	36	36	36	36	RESRAD-Build default value
	Room height	m	3.05	3.05	3.05	2.5	Estimated to be 10 feet for a small room
	Shielding thickness	cm	0	0	0		Surface contamination - no shielding assumed
Receptor	Number of receptors		1	1	1	1	RESRAD-Build default value
	Room number		1	1	1	1	RESRAD-Build default value
	Time fraction		1	1	1	1	RESRAD-Build default value and maxium exposure fraction
	Breathing rate	m^3/d	33.6	38.4	33.6	18	NUREG/CR-5512 Vol 1 Sec 6.7.2 & Table 6.23 & RESRAD-BUILD User's Manual, Ver 3 (Section J.3.5); 33.6 m3/d (1.4 m^3/hr), 38.4 m^3/d (1.6 m^3/hr)
	Ingestion rate - indirect	m^2/h	1.00E-04	1.00E-04	1.00E-04	1.00E-04	RESRAD-Build default value
	Location x,y,z	m	5,5,1	5,5,1	5,5,1	1,1,1	Location variables place receptor in center of contaminated area
Source	Source number		1	1	1	1	Single source assumed
	Room number		1	1	1	1	Single room assumed
	Type area, volume, etc		area	area	area		Circular area with no thickness assumed for modeling surface contamination
	Direction		Z	Z	Z	X	Receptor is standing on contaminated surface
	Location x,y,z	m	5,5,0	5,5,0	5,5,0	0,0,0	Location variables place receptor in center of contaminated area
	Area	m^2	36	36	36	36	RESRAD-Build default value; area source is equal to area of room
	Air release fraction		0.357	0.1	0.357	0.1	RESRAD-Build default value
	Direct ingestion	1/h	0.00E+00	0.00E+00	3.06E-06	0.00E+00	Source and receptor co-located; RESRAD-BUILD User's Manual Ver 3, Table 3.1
	Removable fraction		0.1	0.1	0.1	0.5	NRC NUREG-1757 - 10% activity assumed removable; RESRAD-BUILD User's Manual Ver 3, Figure J.14 DOE most likely value. For removable contamination this factor was changed to 1.
	Lifetime (time of source removal)	days	10,000	90	10,000	365	RESRAD-BUILD User's Manual Ver 3, Section J.4.10 most likely value 10,000 (27.4 yr); entire area source removed during 90 day renovation for CW
	Radon release fraction		0.9	0.9	0.9	0.1	Source is a thin layer of contamination
	Contamination	dpm/m^2	100	100	100	>0	Calculated unit dose based on this arbitrary value
	Source erosion rate	cm/d	NR	NR	NR	2.40E-08	Does not apply to area source
	Radon effective diffusion coefficient		NR	NR	NR	2.00E-06	Does not apply to area source
	Radon emanation fraction		NR	NR	NR	0.2	Does not apply to area source
Notes:	OW = On-site (office) worker; CW = Construction worker; JT = Juvenile trespasser						

3.0 Results

Data sheets presenting the DCGLs, for each direct measurement worker scenario, and for the removable contamination (limited by the construction worker) are included in Table 4. The print outs from RESRAD-BUILD computer runs are provided as in Appendix A. The calculated DCGLs are listed in Table 6. Table 7 converts the calculated surface DCGLs to DCGL Equivalent for Measurement for beta activity measurement assuming a 2 π geometry (50% reduction of surface betas) and a beta backscatter factor (increase in the "forward" direction of the percent of betas emitted in the "downward direction") assumed to be 20% (estimated from backscatter graphs) or a backscatter factor of 1.2. The backscatter of alphas is much less than that for betas and the assumed alpha backscatter factor is 1.0 . Appendices include the printouts from the RESRAD-BUILD runs.

The critical group is determined from the above methodology to be the construction worker.

Table 4: DCGLs for Direct Measurement Worker Scenarios and for Removable Contamination (Limited by the Construction Worker)

Construction Worker

Derived Surface Activity Limits										
Nuclide	RESRAD-Build Result from Nuclide Detail of Doses at 100 dpm	Col C for 1 dpm	Inverse of Col D	RESRAD-Build Calculated Unit Dose Factor	UDF x 25 mrem	Activity Weighted Dose to Source Ratio	Activity Weighted Effective β/d	Activity Weighted Effective α/d	Total Beta Limit for 25 mrem/yr	Total Alpha Limit for 25 mrem/yr
	mrem/ 100 dpm/m^2	mrem/ dpm/m^2	dpm/m^2 /mrem	dpm/100 cm^2 /mrem	dpm/100 cm^2 /25 mrem	mrem/ dpm/100 cm^2	β/d	α/d	β/min/100 cm^2 /25 mrem	α/min/100 cm^2 /25 mrem
U238+D	9.83E-03	9.83E-05	1.02E+04	1.02E+02	2.54E+03	4.72E-03	0.96	0.48	2.44E+03	1.22E+03
U235+D	1.02E-02	1.02E-04	9.80E+03	9.80E+01	2.45E+03	3.06E-04	0.03	0.03	7.35E+01	7.35E+01
U234	1.10E-02	1.10E-04	9.09E+03	9.09E+01	2.27E+03	5.28E-03	0.00	0.48	0.00E+00	1.09E+03
Th230	2.71E-02	2.71E-04	3.69E+03	3.69E+01	9.23E+02	8.13E-06	0.00	0.00	0.00E+00	2.77E-01
Ra226	1.18E-03	1.18E-05	8.47E+04	8.47E+02	2.12E+04	2.36E-07	0.00	0.00	0.00E+00	4.24E+00
Th232	1.59E+00	1.59E-02	6.29E+01	6.29E-01	1.57E+01	1.51E-02	0.03	0.07	4.48E-01	1.05E+00
Sum							1.02	1.06	**2515**	**2391**

On-site Worker

Derived Surface Activity Limits										
Nuclide	RESRAD-Build Result from Nuclide Detail of Doses at 100 dpm	Col C for 1 dpm	Inverse of Col D	RESRAD-Build Calculated Unit Dose Factor	UDF x 25 mrem	Activity Weighted Dose to Source Ratio	Activity Weighted Effective β/d	Activity Weighted Effective α/d	Total Beta Limit for 25 mrem/yr	Total Alpha Limit for 25 mrem/yr
	mrem/ 100 dpm/m^2	mrem/ dpm/m^2	dpm/m^2 /mrem	dpm/100 cm^2 /mrem	dpm/100 cm^2 /25 mrem	mrem/ dpm/100 cm^2	β/d	α/d	β/min/100 cm^2 /25 mrem	α/min/100 cm^2 /25 mrem
U238+D	7.72E-04	7.72E-06	1.30E+05	1.30E+03	3.24E+04	3.71E-04	0.96	0.48	3.11E+04	1.55E+04
U235+D	8.12E-04	8.12E-06	1.23E+05	1.23E+03	3.08E+04	2.44E-05	0.03	0.03	9.24E+02	9.24E+02
U234	8.21E-04	8.21E-06	1.22E+05	1.22E+03	3.05E+04	3.94E-04	0.00	0.48	0.00E+00	1.46E+04
Th230	2.03E-03	2.03E-05	4.93E+04	4.93E+02	1.23E+04	6.09E-07	0.00	0.00	0.00E+00	3.69E+00
Ra226	9.80E-04	9.80E-06	1.02E+05	1.02E+03	2.55E+04	1.96E-07	0.00	0.00	0.00E+00	5.10E+00
Th232	1.90E-02	1.90E-04	5.26E+03	5.26E+01	1.32E+03	1.81E-04	0.03	0.07	3.75E+01	8.75E+01
Sum							1.02	1.06	**32049**	**31180**

Juvenile Trespasser

Derived Surface Activity Limits										
Nuclide	RESRAD-Build Result from Nuclide Detail of Doses at 100 dpm	Col C for 1 dpm	Inverse of Col D	RESRAD-Build Calculated Unit Dose Factor	UDF x 25 mrem	Activity Weighted Dose to Source Ratio	Activity Weighted Effective β/d	Activity Weighted Effective α/d	Total Beta Limit for 25 mrem/yr	Total Alpha Limit for 25 mrem/yr
	mrem/ 100 dpm/m^2	mrem/ dpm/m^2	dpm/m^2 /mrem	dpm/100 cm^2 /mrem	dpm/100 cm^2 /25 mrem	mrem/ dpm/100 cm^2	β/d	α/d	β/min/100 cm^2 /25 mrem	α/min/100 cm^2 /25 mrem
U238+D	3.86E-05	3.86E-07	2.59E+06	2.59E+04	6.48E+05	1.85E-05	0.96	0.48	6.22E+05	3.11E+05
U235+D	4.06E-05	4.06E-07	2.46E+06	2.46E+04	6.16E+05	1.22E-06	0.03	0.03	1.85E+04	1.85E+04
U234	4.11E-05	4.11E-07	2.43E+06	2.43E+04	6.08E+05	1.97E-05	0.00	0.48	0.00E+00	2.92E+05
Th230	1.01E-04	1.01E-06	9.90E+05	9.90E+03	2.48E+05	3.03E-08	0.00	0.00	0.00E+00	7.43E+01
Ra226	4.91E-05	4.91E-07	2.04E+06	2.04E+04	5.09E+05	9.82E-09	0.00	0.00	0.00E+00	1.02E+02
Th232	1.03E-03	1.03E-05	9.71E+04	9.71E+02	2.43E+04	9.79E-06	0.03	0.07	6.92E+02	1.61E+03
Sum							1.02	1.06	**640926**	**623115**

Removable Contamination based on Construction Worker (limiting receptor)

Derived Surface Activity Limits										
Nuclide	RESRAD-Build Result from Nuclide Detail of Doses at 100 dpm	Col C for 1 dpm	Inverse of Col D	RESRAD-Build Calculated Unit Dose Factor	UDF x 25 mrem	Activity Weighted Dose to Source Ratio	Activity Weighted Effective β/d	Activity Weighted Effective α/d	Total Beta Limit for 25 mrem/yr	Total Alpha Limit for 25 mrem/yr
	mrem/ 100 dpm/m^2	mrem/ dpm/m^2	dpm/m^2 /mrem	dpm/100 cm^2 /mrem	dpm/100 cm^2 /25 mrem	mrem/ dpm/100 cm^2	β/d	α/d	β/min/100 cm^2 /25 mrem	α/min/100 cm^2 /25 mrem
U238+D	9.82E-02	9.82E-04	1.02E+03	1.02E+01	2.55E+02	4.71E-02	0.96	0.48	2.44E+02	1.22E+02
U235+D	1.02E-01	1.02E-03	9.80E+02	9.80E+00	2.45E+02	3.06E-03	0.03	0.03	7.35E+00	7.35E+00
U234	1.10E-01	1.10E-03	9.09E+02	9.09E+00	2.27E+02	5.28E-02	0.00	0.48	0.00E+00	1.09E+02
Th230	2.71E-01	2.71E-03	3.69E+02	3.69E+00	9.23E+01	8.13E-05	0.00	0.00	0.00E+00	2.77E-02
Ra226	8.72E-03	8.72E-05	1.15E+04	1.15E+02	2.87E+03	1.74E-06	0.00	0.00	0.00E+00	5.73E-01
Th232	1.59E+00	1.59E-02	6.29E+01	6.29E-01	1.57E+01	1.51E-02	0.03	0.07	4.48E-01	1.05E+00
Sum							1.02	1.06	**252**	**240**

Table 5: DCGLs Presented as Total and Removable Alpha and Beta Emissions for Buildings (for 25mrem/yr)

Total Beta Level for (β/min/100 cm^2)	Total Alpha Level for (α/min/100 cm^2)	Removable Beta Level (β/min/100 $cm^{2)}$	Removable Alpha for (α/min/100 cm^2)
2515	2391	252	240

Table 6: DCGLs Equivalents for Measurement for Buildings (for 25 mrem/yr)

Total Beta Level (β/min/100 cm^2)	Total Alpha Level (α/min/100 cm^2)
1509	1195

Notes:

1. Backscatter factor is assumed to be 1.2. (Graph "%backscatter vs. atomic" "Principles Radioisotope Methodology" 3rd Ed. P. 131 for range expected X of media and energies of beta particles 20& backscattering is appropriate and the backscatter factor (BF) would be 1.2)
2. Graph
3. It is expected that half the surface betas will be mitted in the direction of the detector and a reading higher by the BF will be due to backscattered betas from the surface.
4. It is expected that half the surface alphas will be emitted in the direction of the detector and no significant backscatter will occur.
5. Predominantly ^{238}U betas at 0.188MeV @.73/d and 2.28 MeV @.99/d

For comparison purposes the surface contamination limits from USACE EM-385-1-80 were recalculated to units of betas/minute/100 cm^2 for removable, total, and maximum limits, using the same nuclide ratios assumed above and are provided in Table 7. These values are provided only for comparison to the values calculated by RESRAD-BUILD above.

Table 7: Regulatory Surface Contamination Limits

	EM-385-1-80 Limit dpm/100 cm^2			β Limit based on EM-385-1-80 βpm/100 cm^2		
Nuclide	Removable	Total	Maximum	Removable	Total	Maximum
U238	480	2400	7200	960	4800	14400
U235	30	150	450	30	150	450
U234	480	2400	7200	0	0	0
Th230	0.3	1.5	4.5	0	0	0
Ra226	0.2	1	3	0	0	0
Th232	9.5	47.5	142.5	28.5	142.5	427.5
Sum	1000	5000	15000	1019	5093	15278

Appendix A

RESRAD-BUILD Computer Outputs

Construction Worker

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCW.bld

RESRAD-BUILD Table of Contents

RESRAD-BUILD Input Parameters..... 2
Building Information..... 3
Source Information..... 4
For time = 0.00E+00 yr
Time Specific Parameters..... 5
Receptor-Source Dose Summary..... 6
Dose by Pathway Detail..... 7
Dose by Nuclide Detail..... 8
Full Summary..... 9

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCW.bld

RESRAD-BUILD Input Parameters

Number of Sources : 1
Number of Receptors: 1
Total Time : 9.000000E+01 days
Fraction Inside : 3.510000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	5.000	5.000	1.000	1.000	3.84E+01	1.00E-04

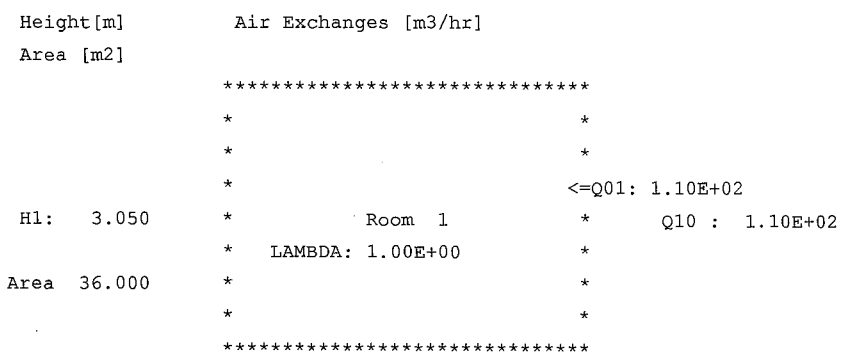
Receptor-Source Shielding Relationship

Receptor	Source	Density [g/cm3]	Thickness [cm]	Material
1	1	2.40E+00	0.00E+00	Concrete

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCW.bld

Building Information

Building Air Exchange Rate: 1.00E+00 1/hr



Deposition velocity: 1.00E-02 [m/s] Resuspension Rate: 5.00E-07 [1/s]

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCW.bld

Source Information

Source: 1

Location:: Room : 1 x: 5.00 y: 5.00 z: 0.00[m]

Geometry:: Type: Area Area:3.60E+01 [m2] Direction: z

Pathway ::

Direct Ingestion Rate: 0.000E+00 [1/hr]

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 9.000E+01 [day]

Radon Release Fraction: 9.000E-01

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: ICRP 60)

Nuclide	Concentration [dpm/m2]	Ingestion [mrem/dpm]	Inhalation [mrem/dpm]	Submersion [mrem/yr/ (dpm/m3)]
U-238	1.000E+02	1.210E-04	5.317E-02	7.191E-05
U-235	1.000E+02	1.204E-04	5.541E-02	4.063E-04
U-234	1.000E+02	1.275E-04	5.946E-02	4.014E-07
PA-231	0.000E+00	4.775E-03	5.766E-01	9.049E-05
TH-232	1.000E+02	1.230E-03	7.387E-01	4.588E-07
TH-230	1.000E+02	2.468E-04	1.468E-01	9.155E-07
TH-228	1.000E+02	3.642E-04	1.556E-01	4.224E-03
AC-227	0.000E+00	6.665E-03	3.029E+00	9.734E-04
RA-228	1.000E+02	6.496E-04	2.287E-03	2.515E-03
RA-226	1.000E+02	5.950E-04	3.871E-03	4.663E-03
PB-210	0.000E+00	2.422E-03	6.214E-03	4.698E-06

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCW.bld
Evaluation Time: 0.00000000E+00 years

Assessment for Time: 1
Time =0.00E+00 yr

Source Information

Source: 1
Location:: Room : 1 x: 5.00 y: 5.00 z: 0.00 [m]
Geometry:: Type: Area Area:3.60E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 9.000E+01 [day]

Contamination::	Nuclide	Concentration [dpm/m2]
	U-238	1.000E+02
	U-235	1.000E+02
	U-234	1.000E+02
	PA-231	0.000E+00
	TH-232	1.000E+02
	TH-230	1.000E+02
	TH-228	1.000E+02
	AC-227	0.000E+00
	RA-228	1.000E+02
	RA-226	1.000E+02
	PB-210	0.000E+00

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCW.bld
Evaluation Time: 0.00000000E+00 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

	Source 1	Total
Receptor 1	2.22E-01	2.22E-01
Total	2.22E-01	2.22E-01

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCW.bld
Evaluation Time: 0.00000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.46E-04	1.29E-05	1.42E-07	2.18E-01	3.04E-03	7.65E-04
Total	4.46E-04	1.29E-05	1.42E-07	2.18E-01	3.04E-03	7.65E-04

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCW.bld
Evaluation Time: 0.00000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor 1	Total
U-238	9.83E-03	9.83E-03
U-234	3.76E-09	3.76E-09
TH-230	6.80E-15	6.80E-15
RA-226	7.88E-21	7.88E-21
PB-210	1.73E-23	1.73E-23
U-235	1.02E-02	1.02E-02
PA-231	2.80E-07	2.80E-07
AC-227	3.71E-09	3.71E-09
U-234	1.10E-02	1.10E-02
TH-230	2.95E-08	2.95E-08
RA-226	4.54E-14	4.54E-14
PB-210	1.24E-16	1.24E-16
TH-232	1.36E-01	1.36E-01
TH-228	1.08E-05	1.08E-05
RA-228	9.00E-06	9.00E-06
TH-230	2.71E-02	2.71E-02
RA-226	6.20E-08	6.20E-08
PB-210	2.25E-10	2.25E-10
TH-228	2.46E-02	2.46E-02
TH-228	1.09E-03	1.09E-03
RA-228	6.14E-04	6.14E-04
RA-226	1.18E-03	1.18E-03
PB-210	6.36E-06	6.36E-06

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCW.bld
Full Summary

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

	Evaluation Time [yr] 0.00E+00
1	2.22E-01

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

	Evaluation Time [yr] 0.00E+00
1	9.01E-01

On-site Worker

Title : Guterl building DCGL On-site Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlOW.bld

RESRAD-BUILD Table of Contents

RESRAD-BUILD Input Parameters..... 2
Building Information..... 3
Source Information..... 4
For time = 0.00E+00 yr
Time Specific Parameters..... 5
Receptor-Source Dose Summary..... 6
Dose by Pathway Detail..... 7
Dose by Nuclide Detail..... 8
Full Summary..... 9

RESRAD-BUILD Input Parameters

Number of Sources : 1
Number of Receptors: 1
Total Time : 3.650000E+02 days
Fraction Inside : 2.300000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	5.000	5.000	1.000	1.000	3.36E+01	1.00E-04

Receptor-Source Shielding Relationship

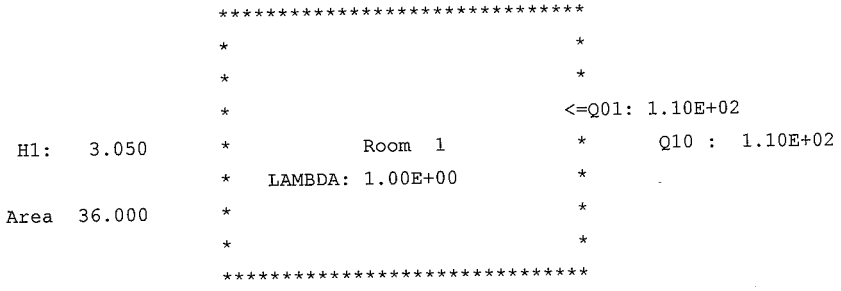
Receptor	Source	Density [g/cm3]	Thickness [cm]	Material
1	1	2.40E+00	0.00E+00	Concrete

Title : Guterl building DCGL On-site Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlOW.bld

Building Information

Building Air Exchange Rate: 1.00E+00 1/hr

Height[m] Air Exchanges [m3/hr]
Area [m2]



Deposition velocity: 1.00E-02 [m/s] Resuspension Rate: 5.00E-07 [1/s]

Source Information

Source: 1

Location:: Room : 1 x: 5.00 y: 5.00 z: 0.00[m]
Geometry:: Type: Area Area:3.60E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 3.570E-01
Removable fraction: 1.000E-01
Time to Remove: 1.000E+04 [day]

Radon Release Fraction: 9.000E-01

Contamination::

Nuclide	Concentration	Dose Conversion Factor (Library: ICRP 60)		
	[dpm/m2]	Ingestion [mrem/dpm]	Inhalation [mrem/dpm]	Submersion [mrem/yr/ (dpm/m3)]
U-238	1.000E+02	1.210E-04	5.317E-02	7.191E-05
U-235	1.000E+02	1.204E-04	5.541E-02	4.063E-04
U-234	1.000E+02	1.275E-04	5.946E-02	4.014E-07
PA-231	0.000E+00	4.775E-03	5.766E-01	9.049E-05
TH-232	1.000E+02	1.230E-03	7.387E-01	4.588E-07
TH-230	1.000E+02	2.468E-04	1.468E-01	9.155E-07
TH-228	1.000E+02	3.642E-04	1.556E-01	4.224E-03
AC-227	0.000E+00	6.665E-03	3.029E+00	9.734E-04
RA-228	1.000E+02	6.496E-04	2.287E-03	2.515E-03
RA-226	1.000E+02	5.950E-04	3.871E-03	4.663E-03
PB-210	0.000E+00	2.422E-03	6.214E-03	4.698E-06

Title : Guterl building DCGL On-site Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlOW.bld
Evaluation Time: 0.00000000E+00 years

Assessment for Time: 1
Time =0.00E+00 yr

Source Information

Source: 1
Location:: Room : 1 x: 5.00 y: 5.00 z: 0.00 [m]
Geometry:: Type: Area Area:3.60E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 3.570E-01
Removable fraction: 1.000E-01
Time to Remove: 1.000E+04 [day]

Contamination::	Nuclide	Concentration [dpm/m2]
	U-238	1.000E+02
	U-235	1.000E+02
	U-234	1.000E+02
	PA-231	0.000E+00
	TH-232	1.000E+02
	TH-230	1.000E+02
	TH-228	1.000E+02
	AC-227	0.000E+00
	RA-228	1.000E+02
	RA-226	1.000E+02
	PB-210	0.000E+00

Title : Guterl building DCGL On-site Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlOW.bld
Evaluation Time: 0.00000000E+00 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

	Source 1	Total
Receptor 1	2.61E-02	2.61E-02
Total	2.61E-02	2.61E-02

Title : Guterl building DCGL On-site Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlOW.bld
Evaluation Time: 0.00000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.25E-03	1.10E-06	1.21E-08	1.63E-02	8.49E-03	6.58E-05
Total	1.25E-03	1.10E-06	1.21E-08	1.63E-02	8.49E-03	6.58E-05

Title : Guterl building DCGL On-site Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlOW.bld
Evaluation Time: 0.00000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor 1	Total
U-238	7.72E-04	7.72E-04
U-234	1.16E-09	1.16E-09
TH-230	8.58E-15	8.58E-15
RA-226	4.49E-19	4.49E-19
PB-210	3.91E-22	3.91E-22
U-235	8.12E-04	8.12E-04
PA-231	8.49E-08	8.49E-08
AC-227	4.55E-09	4.55E-09
U-234	8.21E-04	8.21E-04
TH-230	9.10E-09	9.10E-09
RA-226	6.35E-13	6.35E-13
PB-210	6.89E-16	6.89E-16
TH-232	1.02E-02	1.02E-02
TH-228	6.56E-05	6.56E-05
RA-228	1.81E-05	1.81E-05
TH-230	2.03E-03	2.03E-03
RA-226	2.12E-07	2.12E-07
PB-210	3.06E-10	3.06E-10
TH-228	8.52E-03	8.52E-03
TH-228	1.57E-03	1.57E-03
RA-228	2.95E-04	2.95E-04
RA-226	9.80E-04	9.80E-04
PB-210	2.12E-06	2.12E-06

Title : Guterl building DCGL On-site Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlOW.bld
Full Summary

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

	Evaluation Time [yr] 0.00E+00
1	2.61E-02

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

	Evaluation Time [yr] 0.00E+00
1	2.61E-02

Juvenile Trespasser

Title : Guterl building DCGL Juvenile Trespasser
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlJT.bld

RESRAD-BUILD Table of Contents

RESRAD-BUILD Input Parameters..... 2
Building Information..... 3
Source Information..... 4
For time = 0.00E+00 yr
Time Specific Parameters..... 5
Receptor-Source Dose Summary..... 6
Dose by Pathway Detail..... 7
Dose by Nuclide Detail..... 8
Full Summary..... 9

RESRAD-BUILD Input Parameters

Number of Sources : 1
Number of Receptors: 1
Total Time : 1.000000E+01 days
Fraction Inside : 4.200000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	5.000	5.000	1.000	1.000	3.36E+01	1.00E-04

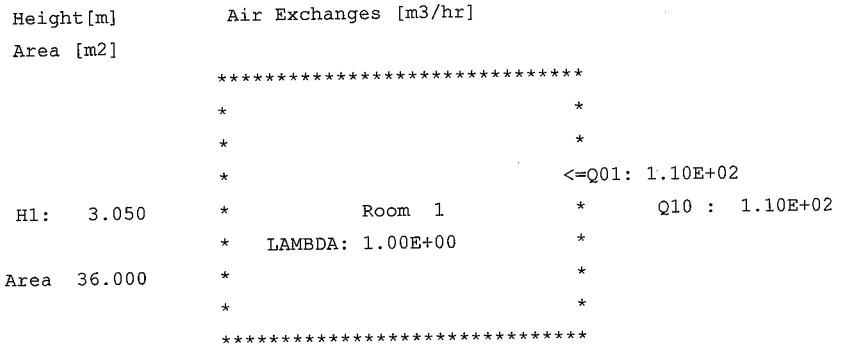
Receptor-Source Shielding Relationship

Receptor	Source	Density [g/cm3]	Thickness [cm]	Material
1	1	2.40E+00	0.00E+00	Concrete

Title : Guterl building DCGL Juvenile Trespasser
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlJT.bld

Building Information

Building Air Exchange Rate: 1.00E+00 1/hr



Deposition velocity: 1.00E-02 [m/s] Resuspension Rate: 5.00E-07 [1/s]

Source Information

Source: 1

Location:: Room : 1 x: 5.00 y: 5.00 z: 0.00[m]
Geometry:: Type: Area Area:3.60E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 3.570E-01
Removable fraction: 1.000E-01
Time to Remove: 1.000E+04 [day]

Radon Release Fraction: 9.000E-01

Contamination::

Nuclide	Concentration	Dose Conversion Factor (Library: ICRP 60)		
	[dpm/m2]	Ingestion [mrem/dpm]	Inhalation [mrem/dpm]	Submersion [mrem/yr/(dpm/m3)]
U-238	1.000E+02	1.210E-04	5.317E-02	7.191E-05
U-235	1.000E+02	1.204E-04	5.541E-02	4.063E-04
U-234	1.000E+02	1.275E-04	5.946E-02	4.014E-07
PA-231	0.000E+00	4.775E-03	5.766E-01	9.049E-05
TH-232	1.000E+02	1.230E-03	7.387E-01	4.588E-07
TH-230	1.000E+02	2.468E-04	1.468E-01	9.155E-07
TH-228	1.000E+02	3.642E-04	1.556E-01	4.224E-03
AC-227	0.000E+00	6.665E-03	3.029E+00	9.734E-04
RA-228	1.000E+02	6.496E-04	2.287E-03	2.515E-03
RA-226	1.000E+02	5.950E-04	3.871E-03	4.663E-03
PB-210	0.000E+00	2.422E-03	6.214E-03	4.698E-06

Title : Guterl building DCGL Juvenile Trespasser
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlJT.bld
Evaluation Time: 0.00000000E+00 years

Assessment for Time: 1
Time =0.00E+00 yr

Source Information

Source: 1
Location:: Room : 1 x: 5.00 y: 5.00 z: 0.00 [m]
Geometry:: Type: Area Area:3.60E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 3.570E-01
Removable fraction: 1.000E-01
Time to Remove: 1.000E+04 [day]

Contamination::	Nuclide	Concentration [dpm/m2]
	U-238	1.000E+02
	U-235	1.000E+02
	U-234	1.000E+02
	PA-231	0.000E+00
	TH-232	1.000E+02
	TH-230	1.000E+02
	TH-228	1.000E+02
	AC-227	0.000E+00
	RA-228	1.000E+02
	RA-226	1.000E+02
	PB-210	0.000E+00

Title : Guterl building DCGL Juvenile Trespasser
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlJT.bld
Evaluation Time: 0.00000000E+00 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

	Source 1	Total
Receptor 1	1.31E-03	1.31E-03
Total	1.31E-03	1.31E-03

Title : Guterl building DCGL Juvenile Trespasser
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlJT.bld
Evaluation Time: 0.00000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	6.25E-05	5.52E-08	6.06E-10	8.14E-04	4.25E-04	3.26E-06
Total	6.25E-05	5.52E-08	6.06E-10	8.14E-04	4.25E-04	3.26E-06

Title : Guterl building DCGL Juvenile Trespasser
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlJT.bld
Evaluation Time: 0.00000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor 1	Total
U-238	3.86E-05	3.86E-05
U-234	1.59E-12	1.59E-12
TH-230	3.22E-19	3.22E-19
RA-226	4.63E-25	4.63E-25
PB-210	1.12E-29	1.12E-29
U-235	4.06E-05	4.06E-05
PA-231	1.17E-10	1.17E-10
AC-227	1.74E-13	1.74E-13
U-234	4.11E-05	4.11E-05
TH-230	1.25E-11	1.25E-11
RA-226	2.39E-17	2.39E-17
PB-210	7.20E-22	7.20E-22
TH-232	5.10E-04	5.10E-04
TH-228	2.77E-09	2.77E-09
RA-228	2.58E-08	2.58E-08
TH-230	1.01E-04	1.01E-04
RA-226	2.91E-10	2.91E-10
PB-210	1.17E-14	1.17E-14
TH-228	5.06E-04	5.06E-04
TH-228	2.52E-06	2.52E-06
RA-228	1.56E-05	1.56E-05
RA-226	4.91E-05	4.91E-05
PB-210	2.95E-09	2.95E-09

Title : Guterl building DCGL Juvenile Trespasser
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlJT.bld
Full Summary

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

	Evaluation Time [yr] 0.00E+00
1	1.31E-03

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

	Evaluation Time [yr] 0.00E+00
1	4.77E-02

Construction Worker Removable

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCWrmvbl.bld

RESRAD-BUILD Table of Contents

RESRAD-BUILD Input Parameters..... 2
Building Information..... 3
Source Information..... 4
For time = 0.00E+00 yr
Time Specific Parameters..... 5
Receptor-Source Dose Summary..... 6
Dose by Pathway Detail..... 7
Dose by Nuclide Detail..... 8
Full Summary..... 9

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCWrmvbl.bld

RESRAD-BUILD Input Parameters

Number of Sources : 1
Number of Receptors: 1
Total Time : 9.000000E+01 days
Fraction Inside : 3.510000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	5.000	5.000	1.000	1.000	3.84E+01	1.00E-04

Receptor-Source Shielding Relationship

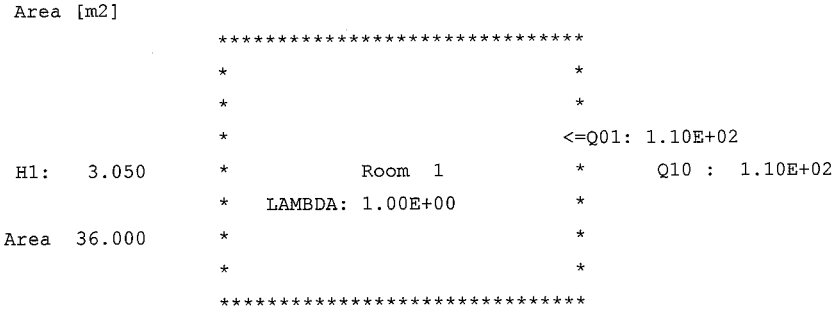
Receptor	Source	Density [g/cm3]	Thickness [cm]	Material
1	1	2.40E+00	0.00E+00	Concrete

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCWrmvbl.bld

Building Information

Building Air Exchange Rate: 1.00E+00 1/hr

Height[m] Air Exchanges [m3/hr]
Area [m2]



Deposition velocity: 1.00E-02 [m/s] Resuspension Rate: 5.00E-07 [1/s]

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCWrmvbl.bld

Source Information

Source: 1

Location:: Room : 1 x: 5.00 y: 5.00 z: 0.00[m]
Geometry:: Type: Area Area:3.60E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E+00
Time to Remove: 9.000E+01 [day]

Radon Release Fraction: 9.000E-01

Contamination::

Nuclide	Concentration	Dose Conversion Factor (Library: ICRP 60)		
	[dpm/m2]	Ingestion [mrem/dpm]	Inhalation [mrem/dpm]	Submersion [mrem/yr/ (dpm/m3)]
U-238	1.000E+02	1.210E-04	5.317E-02	7.191E-05
U-235	1.000E+02	1.204E-04	5.541E-02	4.063E-04
U-234	1.000E+02	1.275E-04	5.946E-02	4.014E-07
PA-231	0.000E+00	4.775E-03	5.766E-01	9.049E-05
TH-232	1.000E+02	1.230E-03	7.387E-01	4.588E-07
TH-230	1.000E+02	2.468E-04	1.468E-01	9.155E-07
TH-228	1.000E+02	3.642E-04	1.556E-01	4.224E-03
AC-227	0.000E+00	6.665E-03	3.029E+00	9.734E-04
RA-228	1.000E+02	6.496E-04	2.287E-03	2.515E-03
RA-226	1.000E+02	5.950E-04	3.871E-03	4.663E-03
PB-210	0.000E+00	2.422E-03	6.214E-03	4.698E-06

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCWrmvbl.bld
Evaluation Time: 0.00000000E+00 years

Assessment for Time: 1
Time =0.00E+00 yr

Source Information

Source: 1
Location:: Room : 1 x: 5.00 y: 5.00 z: 0.00 [m]
Geometry:: Type: Area Area:3.60E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E+00
Time to Remove: 9.000E+01 [day]

Contamination::	Nuclide	Concentration [dpm/m2]
	U-238	1.000E+02
	U-235	1.000E+02
	U-234	1.000E+02
	PA-231	0.000E+00
	TH-232	1.000E+02
	TH-230	1.000E+02
	TH-228	1.000E+02
	AC-227	0.000E+00
	RA-228	1.000E+02
	RA-226	1.000E+02
	PB-210	0.000E+00

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCWrmvbl.bld
Evaluation Time: 0.00000000E+00 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

	Source 1	Total
Receptor 1	2.19E+00	2.19E+00
Total	2.19E+00	2.19E+00

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCWrmvbl.bld
Evaluation Time: 0.00000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.35E-04	1.29E-04	1.42E-06	2.18E+00	1.60E-03	7.65E-03
Total	2.35E-04	1.29E-04	1.42E-06	2.18E+00	1.60E-03	7.65E-03

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCWrmvbl.bld
Evaluation Time: 0.00000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor 1	Total
U-238	9.82E-02	9.82E-02
U-234	2.55E-08	2.55E-08
TH-230	3.49E-14	3.49E-14
RA-226	2.37E-20	2.37E-20
PB-210	8.54E-23	8.54E-23
U-235	1.02E-01	1.02E-01
PA-231	2.80E-06	2.80E-06
AC-227	3.71E-08	3.71E-08
U-234	1.10E-01	1.10E-01
TH-230	2.00E-07	2.00E-07
RA-226	1.72E-13	1.72E-13
PB-210	7.45E-16	7.45E-16
TH-232	1.36E+00	1.36E+00
TH-228	4.94E-05	4.94E-05
RA-228	5.22E-05	5.22E-05
TH-230	2.71E-01	2.71E-01
RA-226	3.10E-07	3.10E-07
PB-210	1.70E-09	1.70E-09
TH-228	2.22E-01	2.22E-01
TH-228	6.62E-03	6.62E-03
RA-228	5.26E-03	5.26E-03
RA-226	8.72E-03	8.72E-03
PB-210	6.35E-05	6.35E-05

Title : Guterl building DCGL Construction Worker
Input File : C:\Program Files\RESRAD_Family\BUILD\3.5\Guterl\gutlCWrmvbl.bld
Full Summary

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

	Evaluation Time [yr]
	0.00E+00
1	2.19E+00

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

	Evaluation Time [yr]
	0.00E+00
1	8.88E+00

APPENDIX I

Contaminated Soil Volume Estimate
Guterl FUSRAP Site

1.0 Estimated Volume of Material Requiring Remediation

The USACE Buffalo District developed estimates of FUSRAP-contaminated soil at the Guterl Site for use in the detailed analysis of alternatives. This estimation was used to develop concepts for excavation footprints and associated *in situ* contaminated soil volumes. This supports cost estimates developed during the detailed analysis of alternatives.

1.1 Methodology

The USACE Buffalo District used a method developed by Argonne National Laboratory to estimate contaminated soil volumes at the Guterl Site. This method, known as the Bayesian Approaches to Adaptive Spatial Sampling (BAASS), utilizes both "soft" and "hard" data to generate a probability that a given area of a site will exceed a targeted cleanup objective or threshold (ANL, 2005). Soft data includes anomalies identified during a historical aerial photograph analysis, a non-intrusive geophysical survey, gamma walkover surveys, anecdotal information, and historical site/process knowledge. This information is used to create an initial conceptual site model (ICSM). Hard data can be defined as the results of laboratory analysis of collected soil samples, and is applied in BAASS to update the ICSM. The results of the BAASS model are then exported to ArcGIS (a Geographic Information System [GIS] software suite produced by Esri). The ArcGIS software was used to convert the BAASS output into spatial extents that represent areas that were greater than or equal to a certain probability of soil contamination. Each spatial extent represents a two-dimensional area with a probability that soil contained within the boundaries exceeded the preliminary remediation goals (PRGs). Table I-1 describes the relationship between the BAASS probability level and the potential for soil contamination.

Table I-1: BAASS Probability Description

Confidence Level	BAASS Probability	Description
90%	0.1	90% confidence the area includes all soil that exceeds PRGs (largest extent)
80%	0.2	80% confidence the area includes all soil that exceeds PRGs
50%	0.5	50% confidence the area includes all soil that exceeds PRGs
20%	0.8	20% confidence the area includes all soil that exceeds PRGs
10%	0.9	10% confidence the area includes all soil that exceeds PRGs (smallest extent)

The BAASS software simulation described above addressed only the lateral extent (i.e., the spatial area) of contaminated soil based on the ICSM and site characterization data. To calculate the *in situ* volume of contaminated soil, a three-dimensional model using the spatial extent modeled by the BAASS program and the maximum depth of contamination derived from the site characterization data was created. This process is described in more detail in the following sections.

1.1.1 Initial Conceptual Site Model

An analysis using BAASS requires developing an ICSM for the site. The ICSM captures the initial probabilities of contamination for an area. It presents an understanding, absent of sampling data, of where contamination is likely to be found. The contamination probability is captured by a set of grid points overlain on the area of interest. The probability of contamination in an ICSM can and often does vary from grid point to grid point. In the case of the Guterl Site, a 3-meter (m) (10-foot [ft]) grid spacing was used.

Information available for the Guterl Site for constructing the ICSM included a series of historical aerial photographs dating from 1938 through 2008 (USAGC, 2009), and surficial gamma walkover survey data. The historical aerial photographs were particularly valuable for identifying the extent of historically disturbed areas. Based on available soft information, individual grid nodes were assigned one of the following initial contamination probabilities: 0.001, 0.05, 0.40, 0.50, or 0.70. The ICSM for the Guterl Site is shown in Figure I-1.
In general, the following rules were followed in setting the initial contamination probabilities in the ICSM:

- **0.70:** Soil beneath buildings 6 and 8
- **0.50:** Area between older railroad tracks (1963 and earlier) and newer (circa 1966) railroad tracks, which was disturbed during the rail spur realignment
- **0.40:** Excised area and hotspots from gamma walkover survey (most gamma walkover hotspots were superseded because they were also between the railroad tracks)
- **0.05:** Remaining soil within the site boundary not previously assigned
- **0.001:** Grid points that were outside of the site boundary

1.1.2 Data Evaluation

The data used to generate the volume estimate were compiled from a 1999 radiological survey and the 2007 USACE remedial investigation (RI). The Oak Ridge Institute for Science and Education (ORISE) completed the 1999 survey on behalf of the United States Bankruptcy Court for the Western District of Pennsylvania (ORISE, 1999). The USACE published the data in the 2010 RI report (USACE, 2010). Only soil samples were considered for the BAASS calculations, utilizing the Thorium-232 (^{232}Th) and Uranium-238 (^{238}U) sample results. A subset of samples was analyzed by both off-site alpha spectrometry and on-site gamma spectrometry. For this relatively small subset of samples, only the off-site alpha spectrometry results were used during the analysis.

To ensure a more conservative approach in the volume estimate, where multiple samples were collected at various depths from a single location, the maximum result value from each location was used regardless of the depth at which it occurred. The resulting values were then compared to two different preliminary remediation goal (PRG) scenarios for the Guterl Site to determine the hit value needed by the BAASS model. The two PRG scenarios for the Guterl Site are the construction worker PRG (PRG-CW) and the groundwater protection PRG (PRG-GW).

For the construction worker scenario, the PRG-CW[1] is defined as 23 pCi/g for ^{238}U and 6.6 pCi/g for ^{232}Th. In this case, a sum-of-ratios (SOR) was calculated based on the PRG-CW. For sample locations with an SOR score above 1, a hit value of 1 was assigned, while for sample locations that had an SOR score between 0.99 and 0.5, a hit value of 0.5 was assigned, and for sample locations that had an SOR score below 0.5 a hit value of 0 was assigned.
The data, both above and below the SOR for the PRG-CW are shown in Figure I-2.

For the groundwater protection scenario, the PRG-GW[1] is defined as 3.7 pCi/g (the activity equivalent of the 11 mg/kg) for ^{238}U and 5.1 pCi/g for ^{232}Th. The ^{232}Th results above the PRG were collocated with ^{238}U exceedances, so only the ^{238}U data were used for this scenario. For sample locations with a ^{238}U concentration greater than (or equal to) 3.7 pCi/g, a hit value of 1 was assigned, while those sample locations that had a ^{238}U concentration less than 3.7 pCi/g were assigned a hit value of 0. The ^{238}U data, both above and below the PRG-GW are shown in Figure I-3.

1.1.3 Bayesian Approaches to Adaptive Spatial Sampling

In addition to the ICSM, BAASS requires three additional key parameters: a variogram function, the range for the variogram selected, and a search neighborhood. A variogram characterizes the degree of spatial dependence of a dataset. The variogram functional form combined with its range captures beliefs about the spatial autocorrelation present. The search neighborhood determines which sampling locations can contribute to the updating process at any particular grid node. The variogram functional form and range, in conjunction with the spatial pattern of sampled locations, determines how much weight each sampled location has in estimating the probability of contamination at a grid node. Bayesian updating (updating the probability estimate for a hypothesis as additional evidence is acquired) is used to merge the ICSM probabilities with those obtained from the indicator kriging (a method of approximating a function from a set of evaluations at a finite set of points). For the Guterl Site, 30 m (100 ft) was used for both the radius of the search neighborhood and for the range of the variogram. The functional form of the variogram was set to exponential. Finally, the sample locations and their associated results and hit values are entered into the BAASS software.

After updating, areas distant from sampled locations generally have contamination probabilities that reflect the ICSM, while areas where sampled locations are dense have probabilities that reflect the results of sampling.

1.1.4 Lateral Extents

The output from BAASS was an updated probability of contamination for each grid node, resulting from updating the ICSM with the hard data. The data were converted to a point file and projected onto the site base map. Using ArcGIS, the grid nodes could then be displayed such that the footprint for any given BAASS probability would be shown. For example, all points

[1] PRG values are incremental to background.

with a BAASS probability ≥ 0.5 may be displayed as colored dots, while all others are not displayed. This would show the footprint for the area of the site with a probability of contamination of 0.5 or greater. For the purposes of developing the contaminated soil footprints and volume estimates for this feasibility study, the BAASS probability level of 0.5 was used. To arrive at the final footprints, the grid nodes were combined into one or more polygons, and the edges were conservatively smoothed out. For the PRG-GW scenario, the footprint extended slightly below three of the buildings on the western half of the site. Since there is no known contamination underneath these buildings and historical knowledge does not support the existence of contamination under these buildings, the BAASS model output was modified to exclude any areas under these buildings. The 50 percent probability footprints, for both PRGs, are shown in Figures I-2 and I-3.

1.1.5 Three-Dimensional Volume Modeling

To generate contamination soil volumes for the two PRG scenarios, three-dimensional modeling was conducted using ArcGIS Spatial Analyst and 3D Analyst Extensions. The selected probability level contour identified by USACE (0.5 probability) was used as the basis for the initial *in situ* contaminated soil volume (i.e., prior to excavation). The volume of contaminated soils was calculated by determining the bottom surface of the contaminated soil and thus the thickness of contamination.

For the construction worker scenario, the bottom of contaminated soil for each soil sample location was determined by identifying the maximum depth at which a sample exceeded the SOR of 1 occurred. For the groundwater protection scenario the bottom of contaminated soil for each soil sample location was determined by identifying the maximum depth at which a ^{238}U concentration greater than 3.7 pCi/g occurred.

The depth to bedrock at the Guterl Site is relatively shallow (Figure I-3).If the determined maximum depth of contamination was within 0.3 m (1 ft) of the modeled bedrock surface depth, the bedrock surface depth was used as the maximum depth of contamination. In a few locations, the determined maximum contamination depth exceeded the modeled bedrock surface depth. At these locations the depth determined from the sample results was used and it was not truncated at the modeled bedrock surface.

After the maximum depths of contamination were determined for each sample location, these values were used to generate a three-dimensional surface utilizing ArcGIS 3D Analyst to represent the simulated bottom of the soil contamination. The volume of contaminated soil for each area of excavation was then generated by calculating, within ArcGIS, the thickness between the bottom of contamination and the soil surface.

Following the calculation of the *in situ* contaminated soil volume, engineering aspects of soil excavation, including safety sloping/benching (where required), were considered in order to develop an in situ total excavation volume. The primary guidance used in the development of the *in situ* total excavation volumes was the requirement from the USACE Safety and Health

Requirements Manual for a two-to-one horizontal to vertical side slope for excavations greater than 1.5 m (5 ft) in depth (USACE 2008). The majority of areas do not require side slopes or benching because the excavation depths are 1.5 m (5 ft) or less. For the areas with contamination below 1.5 m (5 ft) in depth, it was determined that due to their geographic location and the contouring algorithm, they would already meet the slope requirements, and thus no additional benching would be necessary.

2.0 Results

The contamination footprints derived from the 50percentconfidence (0.5 probability) contours show several distinct areas of contamination, as shown in Figures I-2 and I-3. Upon applying the three dimensional modeling, a surface depicting the contamination depth within the footprint is obtained. This surface is shown in Figure I-4 for the construction worker scenario and Figure I-5 for the groundwater protection scenario.

When the volume of each area is summed, the result yields an estimate of approximately 3,800 cubic meters (5,000 cubic yards) for the construction worker scenario, and 44,000 cubic meters (58,000 cubic yards) for the groundwater protection scenario, of in situ contaminated soil.

The final soil volumes resulting from this process represent the estimate of the *in situ* volume of contaminated soil generated for potential feasibility study remedial alternatives that involve soil excavation.

3.0 References

Argonne National Laboratory (ANL). 2005. *Bayesian Approaches for Adaptive Spatial Sampling (BAASS) Version 1.0: Users' Guide*, prepared by R. Johnson, D. LePoire, T. Klett, A. Huttenga, and J. Quinn. September.

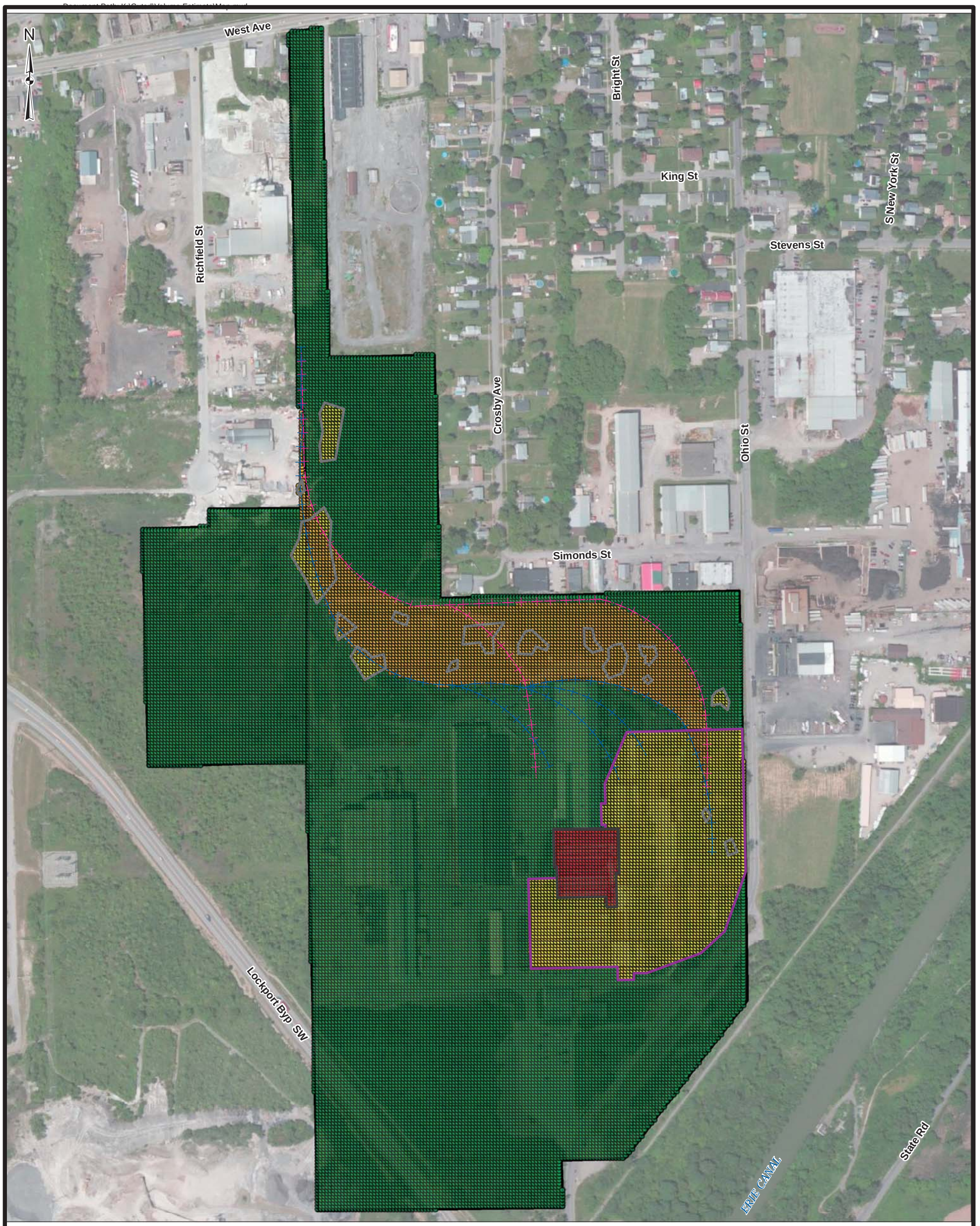
Oak Ridge Institute for Science and Education (ORISE), Environmental Survey and Site Assessment Program (ESSAP). 1999. *Radiological Survey of the Guterl Specialty Steel Corporation, Lockport, New York* (T. J. Vitkus for the United States Bankruptcy Court for the Western District of Pennsylvania.) December.

United States Army Corps of Engineers (USACE). 2008. *Safety and Health Requirements Manual*, EM 385-1-1. September.

USACE. 2010. *Remedial Investigation Report, Guterl Specialty Steel Site, Lockport, New York*. Volume 1: Text and Tables. Prepared by Earth Tech/AECOM Inc. for USACE Buffalo District. July.

United States Army Geospatial Center (USAGC). 2009. *Guterl Specialty Steel Corporation, Lockport, NY; Examination of Historical Photography*, Final Report. September.

Figures



Legend

- Buildings 6 and 8
- GuterlExcisedBoundary
- GW Hotspots
- RR Tracks (1963 and earlier)
- RR Tracks (circa 1966)

Initial Conceptual Site Model

Assigned Probability of Contamination

- 0.05
- 0.4
- 0.5
- 0.7

0 150 300 600 Feet

US Army Corps of Engineers® Buffalo District

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
BUFFALO, NY

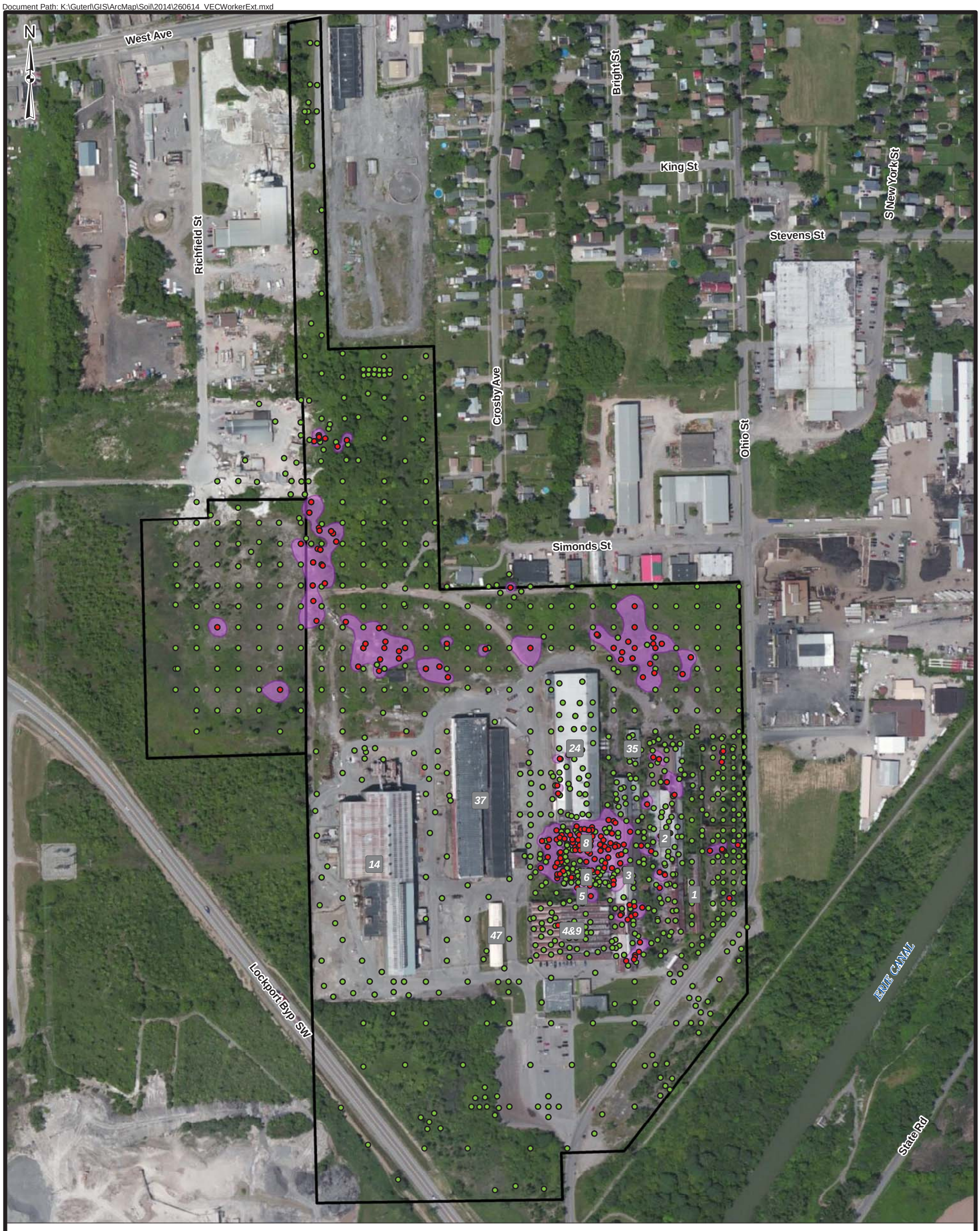
INITIAL CONCEPTUAL SITE MODEL

Document Name: Map.mxd
Drawn By: h5tdepml
Date Saved: 08 Nov 2013
Time Saved: 2:08:46 PM

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

FIGURE I-1

Document Path: K:\Guterl\GIS\ArcMap\Soil\2014\260614_VECWorkerExt.mxd



Legend

Sum of Ratio

- SOR < 1
- SOR > 1
- Estimated Extent of Contaminated Soil
- Site Boundary

0 150 300 600 Feet

US Army Corps of Engineers Buffalo District

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
BUFFALO, NY

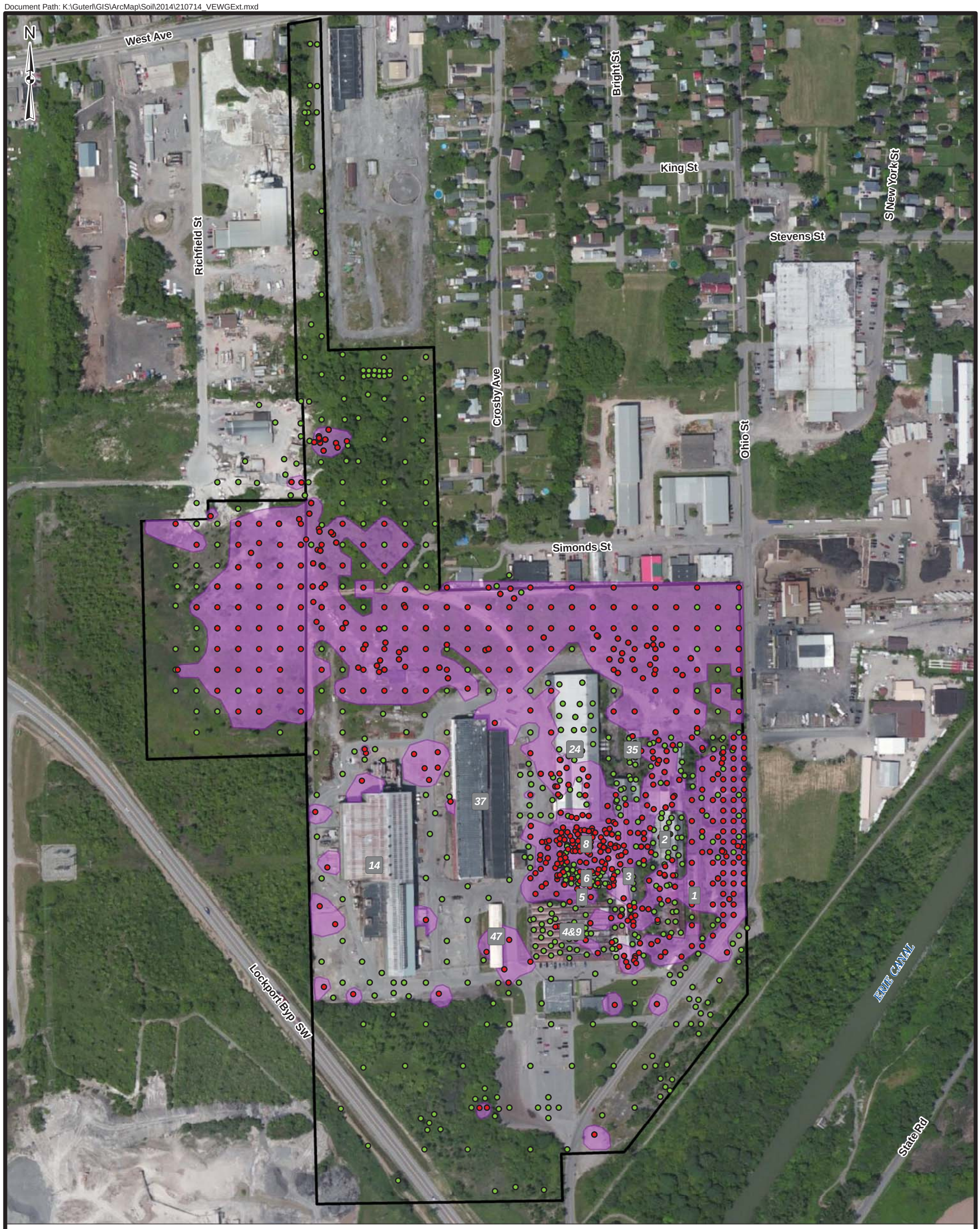
VOLUME ESTIMATE - 50% PROBABILITY FOOTPRINT AND SOR COMPARED TO THE PRG FOR CONSTRUCTION WORKER

Document Name: 260614_VECWorkerExt.mxd
Drawn By: H5TDESPM
Date Saved: 21 Jul 2014
Time Saved: 10:31:09 AM

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

FIGURE I-2

Document Path: K:\Guterl\GIS\ArcMap\Soil\2014\210714_VEWGExt.mxd



Legend

U-238 Concentrations in Soil

- < 3.7 pci/g
- > 3.7 pci/g
- Estimated Extent of U-238 in Soil
- Site Boundary

0 150 300 600 Feet

US Army Corps of Engineers
Buffalo District

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
BUFFALO, NY

VOLUME ESTIMATE - 50% PROBABILITY FOOTPRINT
AND SOIL URANIUM CONCENTRATIONS COMPARED TO THE PRG FOR GROUNDWATER PROTECTION

Document Name: 210714_VEWGExt.mxd
Drawn By: H5TDESPM
Date Saved: 21 Jul 2014
Time Saved: 10:31:44 AM

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

FIGURE I-3

Document Path: K:\Guterl\GIS\ArcMap\Soil\2014\260614_VECWorkerDepth.mxd

Legend

Depth of Contaminated Soils (ft bgs)

- <= 1
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- 5 - 6
- 6 - 7
- 7 - 8
- 8 - 9
- > 9

Site Boundary

Total Volume - 5,013.1 yd³

0 150 300 600 Feet

US Army Corps of Engineers Buffalo District

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
BUFFALO, NY

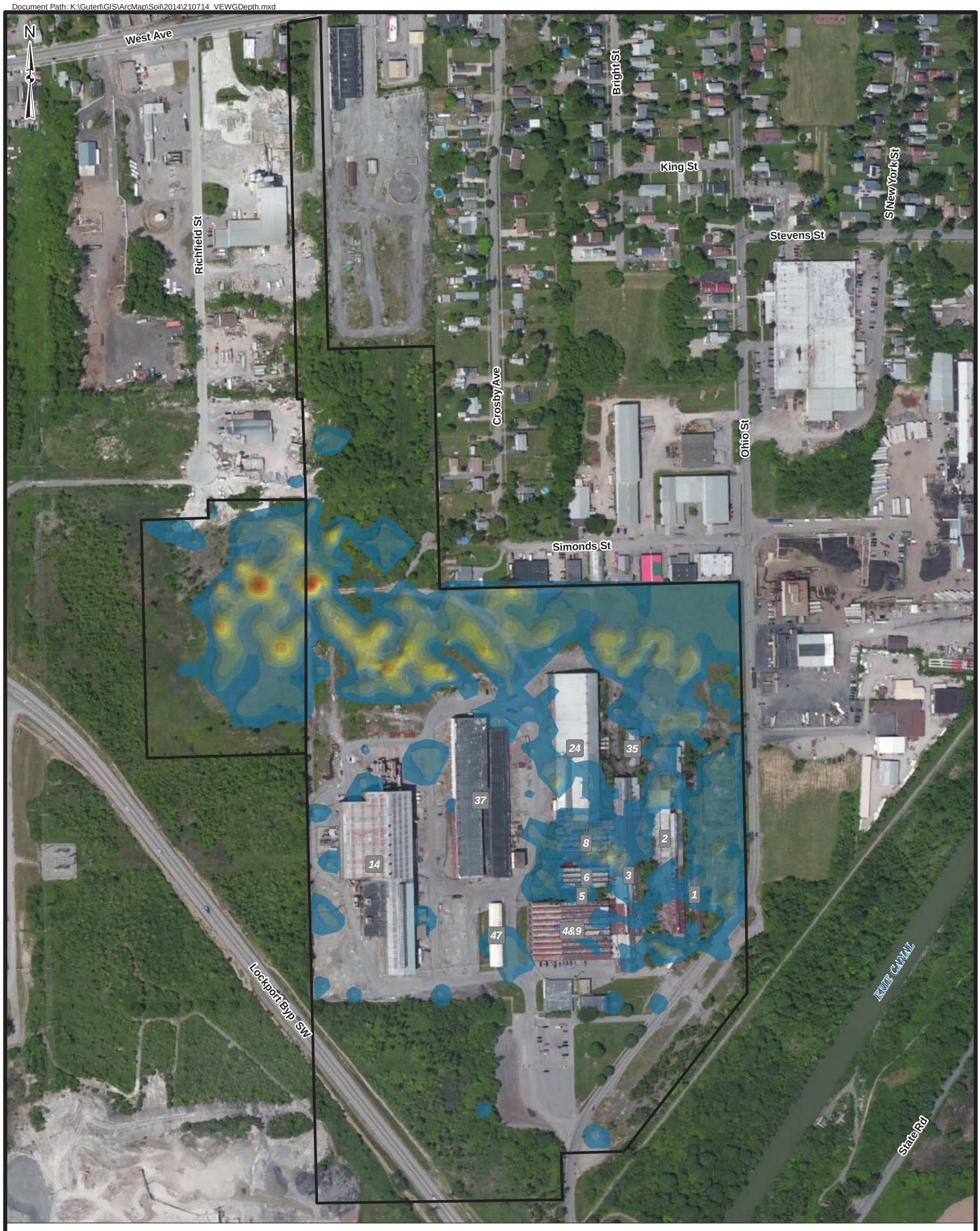
ALTERNATIVE S2
COMPLETE SOIL REMOVAL TO THE CONSTRUCTION WORKER PRG AND OFF-SITE DISPOSAL

Document Name: 260614_VECWorkerDepth.mxd
Drawn By: H5TDESPM
Date Saved: 21 Jul 2014
Time Saved: 10:33:05 AM

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

FIGURE I-4

Document Path: K:\Guterl\GIS\ArcMap\Soil\2014\210714_VEWGDepth.mxd



Legend

Depth of Contaminated Soils (ft bgs)

- <= 1
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- 5 - 6
- 6 - 7
- 7 - 8
- 8 - 9
- > 9

Site Boundary

Total Volume - 57,611.15 yd³

0 150 300 600 Feet

US Army Corps of Engineers
Buffalo District

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
BUFFALO, NY

ALTERNATIVE S3
COMPLETE SOIL REMOVAL TO THE GROUNDWATER PROTECTION PRG AND OFF-SITE DISPOSAL

Document Name: 210714_VEWGDepth.mxd
Drawn By: H5TDESPM
Date Saved: 21 Jul 2014
Time Saved: 10:44:23 AM

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

FIGURE I-5

APPENDIX J

Site-Wide Alternative Cost Estimates

Feasibility Study Cost Comparison Estimates For The Remedial Alternatives at The Former Guterl Specialty Steel Corporation

Formerly Utilized Sites Remedial Action Program Site, Lockport, NY

THIS PAGE INTENTIONALLY LEFT BLANK

CONTENTS

ATTACHMENTS……J-iii
TABLES…….....J-v
ABBREVIATIONS AND ACRONYMS…….J-v

J. INTRODUCTION……...…….J-1
J.1 GENERAL COST INFORMATION……J-1
J.1.1 Estimate Scope…….…….J-1
J.1.2 Schedule…….....J-2
J.1.3 Estimating Methodology……...…J-3
J.1.4 Cost Elements…….……..J-4

J.2 REMEDIAL ALTERNATIVE COST SUMMARY…….…...……J-6

J.3 BASIS OF COST ESTIMATE…….……J-7
J.3.1 Capital Cost Components…….……J-7
J.3.2 Operation and Maintenance Cost Components……..….J-21

J.4 REFERENCES…….……..J-29

ATTACHMENTS

ATTACHMENT J-1: Feasibility Study Comparison Estimate Site-Wide Alternative 2
…….……...…Att. J-1-1

ATTACHMENT J-2: Feasibility Study Comparison Estimate Site-Wide Alternative 3
……...……...……..Att. J-2-1

ATTACHMENT J-3: Feasibility Study Comparison Estimate Site-Wide Alternative 4
……...…….Att. J-3-1

THIS PAGE INTENTIONALLY LEFT BLANK

TABLES

J-1 Remediation Timeframes for Remedial Alternatives……...….J-2
J-2 Summary of Remedial Alternative Costs…….……J-6

ABBREVIATIONS AND ACRONYMS

BCY	bank cubic yard
CW	construction worker
DCGL	derived concentration guideline level
DoD	Department of Defense
ELAP	Environmental Laboratory Accreditation Program
FS	feasibility study
FSCE	feasibility study comparison estimate
FY	fiscal year
FUSRAP	Formerly Utilized Sites Remedial Action Program
FYRs	five-year reviews
GW	groundwater
HDPE	high-density polyethylene
HEPA	high-efficiency particulate arrestance
ICP-MS	inductively-coupled plasma mass spectroscopy
LCY	loose cubic yards
LF	linear feet
LUCs	land use controls
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MCL	maximum contaminant level
O&M	operation and maintenance
PACM	presumed asbestos-containing material
POTW	publicly owned treatment works
PPE	personal protective equipment
PRG	preliminary remediation goal
PRGs	preliminary remediation goals
%	percent
RCRA	Resource Conservation and Recovery Act
S&A	supervision and administration
SF	square foot
USACE	U.S. Army Corps of Engineers
VOCs	volatile organic compounds

THIS PAGE INTENTIONALLY LEFT BLANK

J.1 INTRODUCTION

This appendix provides information regarding the development of the feasibility study comparison estimates (FSCE) for the remedial alternatives included in the Former Guterl Specialty Steel Corporation Formerly Utilized Sites Remedial Action Program (FUSRAP) Site Feasibility Study (FS) Report, herein referred to as the FS Report. These cost estimates are intended to form a basis for comparing remedial alternatives and to support remedy selection. The costs used in this analysis are based on existing U.S. Army Corps of Engineers (USACE) contracts, vendor quotes, estimating reference manuals, and engineering estimates. Costs were estimated for comparison purposes only and are believed to be accurate within a range of -30 to +50 percent (%).

The format for the cost estimate is based on guidance from the *Guide to Developing and Documenting Cost Estimates During a Feasibility Study* (USACE/USEPA 2000). Section J.1 provides the general organization of the cost estimates, the project schedules, and estimating methodology. Section J.2 summarizes costs for each alternative in Fiscal Year (FY) 2020 dollars. Section J.3 provides the scope of work, detailed assumptions, and basis of estimate for each alternative. Attachments J-1, J-2 and J-3 provide the detailed backup information for the cost estimates for Alternatives 2, 3 and 4, respectively. The no action alternative (Alternative 1) has no costs associated with it.

J.2 GENERAL COST INFORMATION

J.2.1 Estimate Scope

The FS Report developed four alternatives for remediating soil, buildings and groundwater at the Former Guterl Specialty Steel Corporation FUSRAP site. The alternatives are:

Site-Wide Alternative 1: No Action. Under this alternative, no action would be taken for building materials or contents, soil, or groundwater/seeps impacted at the site. The No Action alternative contains no costs.

Site-Wide Alternative 2: Dismantlement and Off-Site Disposal of Buildings 1, 2, 3, 4/9, 5, 6, 8, 24, and 35; Complete Soil Removal to the Soil Preliminary Remediation Goals (PRG)-Groundwater (GW) and Off-Site Disposal; Monitored Natural Attenuation with Environmental Monitoring.

Site-Wide Alternative 3: Dismantlement and Off-Site Disposal of Buildings 1, 2, 3, 4/9, 5, 6, 8, 24, and 35; Complete Soil Removal to the Soil PRG-GW and Off-Site Disposal; Groundwater

Recovery Using Vertical Extraction Wells and a Rubblized Trench with Ex Situ Treatment, with Environmental Monitoring.

Site-Wide Alternative 4: Decontamination of Building 1; Dismantlement and Off-Site Disposal of Buildings 2, 3, 4/9, 5, 6, 8, and 24; Complete Soil Removal to the Soil PRG-Construction Worker (CW) and Off-Site Disposal; Monitored Natural Attenuation with Environmental Monitoring.

For each alternative (except Alternative 1) The FSCE includes (1) capital costs, including both direct and indirect costs; (2) annual operation and maintenance (O&M) costs; and (3) net present values of O&M costs. The detailed estimates presenting the non-discounted cost for each alternative are included as Attachments J-1, J-2, and J-3.

J.2.2 Schedule

The anticipated time required to implement a remedial alternative at the site varies with each alternative ranging from approximately 32 years inclusive of the design phase (Alternative 3) to 1,000+ years (No Action Alternative – limit of groundwater modeling). The timeframe for fieldwork for each alternative has been calculated using similar project experience and engineering judgment. The timeframe for fieldwork for Alternatives 2, 3, and 4 assumes that the dismantlement of Building 24 and the remediation of underlying soils will not be conducted at the time of the site-wide remedial action. For estimating purposes it is assumed that Building 24 will become available and authorized for dismantlement in year 30, and that Building 24 dismantlement and remediation of underlying soils will be conducted at that time.

For Alternative 2 the site-wide groundwater model was used to estimate the timeframe to achieve the maximum contaminant level (MCL) for uranium of 30 µg/L if soils above the soil PRG-GW are removed. The model predicted MCL exceedances in shallow groundwater until year 50 and until year 120 in the deep groundwater. For Alternative 3 the site-wide groundwater model was used to develop a conceptual design for a groundwater extraction system using a rubblized trench and vertical wells to capture the uranium plume. Removing soils above the soil PRG-GW would promote the reduction of uranium to less than the MCL of 30 µg/L in 30 years or less. For Alternative 4 a MNA program would be implemented at the site to address impacted groundwater once impacted soils are remediated to the PRG-CW. The MNA program is estimated to continue for 660 years based upon predicted MCL exceedances in the shallow groundwater until Year 430, and in the deep groundwater until approximately Year 660. The remediation and O&M time periods for each alternative are presented in Table J-1.

Table J-1. Remediation Timeframes for Remedial Alternatives

Alternative	Remedial Alternative Timeframe for Planning and Design (years)	Remedial Alternative Timeframe for Fieldwork (years)	O&M Timeframe (years)
1. No Action	0	0	0
2. Deferred Dismantlement of Building 24; Dismantlement and Off-Site Disposal of Buildings 1, 2, 3, 4/9, 5, 6, 8, and 35; Complete Soil Removal to the Soil PRG-GW and Off-Site Disposal; Monitored Natural Attenuation with Environmental Monitoring	1.0	2.7	120
3. Deferred Dismantlement of Building 24; Dismantlement and Off-Site Disposal of Buildings 1, 2, 3, 4/9, 5, 6, 8, and 35; Complete Soil Removal to the PRG-GW and Off-Site Disposal; Groundwater Recovery Using Vertical Wells and a Rubblized Trench with Ex Situ Treatment, with Environmental Monitoring	1.0	3.0	30
4. Decontamination of Building 1; Dismantlement and Off-Site Disposal of Buildings 2, 3, 4/9, 5, 6, 8, and 24; Complete Soil Removal to the Soil PRG-Construction Worker (CW) and Off-Site Disposal; Monitored Natural Attenuation with Environmental Monitoring	1.0	2.1	660

J.2.3 Estimating Methodology

The methodology used in the development of the FSCEs is a combination of the quantity take-off method and the bottom up method. In quantity take-off estimating costs are calculated based on unit cost multiplied by quantity or other input parameters. Unit cost data used in the relationship are primarily drawn from existing USACE contracts, vendor quotes, *RSMeans Construction Cost Data Manuals*, or engineering estimates. Quantity take-off estimating is useful for estimating the cost of common, well defined activities, (e.g., waste transportation and disposal) for which historical cost information exists. In bottom up estimating each task is broken down into smaller components. Individual estimates are developed to determine what specifically is needed to meet the requirements of each of these smaller components of the work.

The estimates for the smaller individual components are then aggregated to develop a larger estimate for the entire task as a whole. Bottom up estimating is useful for estimating the cost of unique or project-specific activities (e.g., radiological monitoring and sampling). Engineering and construction expertise was used to develop timing, manpower, and equipment requirements. The FSCEs were formatted using the *Hazardous, Toxic and Radioactive Waste Remedial Action and Operation and Maintenance Work Breakdown Structures* (USACE, et al, Feb 1996). Microcomputer Aided Cost Estimating System (MCACES) 2nd Generation (MII) Version 4.4 estimating software was used in the compilation of the cost estimates for the remedial alternatives.

J.2.4 Cost Elements

Federal construction programs have traditionally distinguished between capital and O&M costs. The remedial alternatives for this FS Report consist of those activities required to prevent or mitigate the migration of waste into the environment. An alternative may include activities considered to be O&M in situations where construction alone will not achieve the health and environmental protection criteria.

Each evaluated alternative has a remediation schedule with an estimated duration. The post-closure or O&M phase occurs after completion of the remediation and includes those activities necessary to confirm closure or to monitor and maintain controls on releases of hazardous waste into the environment. In addition, where unlimited use and unrestricted exposure are not achieved, five-year reviews (FYRs) will be conducted to ensure protectiveness of the selected remedy.

J.2.4.1 Capital Costs

Capital costs are those expenditures that are required to construct a remedial action. They are exclusive of costs required to operate or maintain the action throughout its lifetime. Capital costs consist primarily of expenditures initially incurred to build or install the remedial action (e.g., construction of a groundwater treatment system and related site work).

<u>Direct Capital Costs</u>

Direct capital costs include equipment, labor, and material necessary for implementing the remedial alternative. These include costs for:

- Mobilization;
- Monitoring, sampling, testing, and analysis;
- Site work;
- Surface water collection/controls;

- Soil collection/containment;
- Structure removal;
- Waste transportation/disposal;
- Site restoration;
- Engineering, supervision, management, and administration; and
- Demobilization and construction closeout.

Indirect Capital Costs

Indirect capital costs are those expenditures not incurred as part of the actual remediation but are ancillary to direct or construction costs. Indirect capital costs may include engineering, supervision, management, administration, financial, and other services necessary to implement a remedial action. In the FSCEs for this FS Report these costs are estimated as direct costs using bottom up estimating. Indirect costs may also include contractor and other markups, and these costs are handled as such in the remedial alternative cost estimates for this FS Report. These costs include:

- Home office overhead;
- Bond;
- Profit; and
- Contingency.

J.2.4.2 O&M Costs

O&M costs are those post-remediation costs necessary for monitoring and otherwise ensuring that hazardous waste will not migrate into the environment, including operation and maintenance of treatment systems installed as part of the remedial action construction. O&M costs can consist of direct and indirect costs. O&M costs may include:

- Mobilization;
- Monitoring, sampling, testing, and analysis;
- Maintaining LUCs;
- Operating, maintaining and removing treatment systems installed as part of the remedial action;
- Waste transportation/disposal;
- Site restoration;
- Engineering, supervision, management, and administration;
- Demobilization and project closeout;
- Home office overhead;
- Bond;

- Profit; and
- Contingency.

J.3 REMEDIAL ALTERNATIVE COST SUMMARY

Table J-2 provides a cost breakdown of capital costs and O&M costs for each alternative using a present value analysis (with discounting at 3.21%) and without discounting. The costs have been presented in Fiscal Year 2020 dollars. The present value analysis is a method to evaluate expenditures, either capital or O&M, that occur over different time periods. Present value calculations allow for cost comparisons of different remedial alternatives that are implemented over different timeframes by turning all future dollar expenditures into current dollar value. This single common value, referred to as present value, is the amount needed to be set aside at an initial point in time (base year) to assure that funds will be available in the future as needed. This process involves four basic steps: (1) define the period of analysis, (2) calculate the cash outflows (payments) for each year of the project, (3) select a discount rate to use in the present value calculation, and (4) calculate present value using standard economic formulae. The remedial alternatives' O&M costs were evaluated using year-0 to year-120 (Alternative 2), year-0 to year-30 (Alternative 3), and year-0 to year-660 (Alternative 4) periods of analysis. A 3.21% discount factor was used in present value calculations based on guidance received from USACE Huntsville Center – Programs & Planning Branch to use the "Historical *Consumer Price Index, All Urban Consumers (CPI-U), U.S. city average, for All Items*" average annual percentage change from 1913 to present (Source www.bls.gov). The capital costs have not been discounted due to their relatively short implementation duration. The detailed cost estimates for Alternative 2, Alternative 3, and Alternative 4 are included in Attachments J-1, J-2 and J-3, respectively.

125,920,912**Table J-2. Summary of Remedial Alternative Costs**

Remedial Alt.	Cost Category	Base Cost Estimate	Contingency Cost	Subtotal Cost	Alternative Total Cost
Non-discounted Operation & Maintenance Costs ($)					
2	Capital (Design/Const.)	125,920,912	54,967,358	180,888,271	197,599,149
	O&M	15,363,529	1,347,350	16,710,878	
3	Capital (Design/Const.)	131,967,162	57,322,415	189,289,577	214,385,659
	O&M	22,696,115	2,399,968	25,096,083	
4	Capital (Design/Const.)	74,230,669	30,182,935	104,413,605	186,061,317
	O&M	75,068,356	6,579,357	81,647,713	
Discounted Operation & Maintenance Costs[i] ($)					
2	Capital (Design/Const.)	125,920,912	54,967,358	180,888,271	186,055,615
	O&M	4,750,717	416,628	5,167,345	
3	Capital (Design/Const.)	131,967,162	57,322,415	189,289,577	205,551,983
	O&M	14,708,276	1,554,130	16,262,406	
4	Capital (Design/Const.)	74,230,669	30,182,935	104,413,605	109,662,912
	O&M	4,826,306	423,001	5,249,307	

$ - Fiscal Year 2020 U.S. dollars.
[i]O&M costs are discounted 3.21%.

J.4 BASIS OF COST ESTIMATE

The following sections summarize the cost components further detailed in the cost estimates in Attachments J-1, J-2, and J-3. Capital and O&M costs are presented separately.

J.4.1 Capital Cost Components

Capital cost components for the evaluated alternatives (excluding Alternative 1 – No Action) include, at a minimum:

- Mobilization and preparatory work (including project implementation plans);
- Monitoring, sampling, testing, and analysis;
- Site work;
- Surface water collection/controls;
- Soil collection/containment;
- Site water treatment;
- Structure removal;
- Waste transportation/disposal;
- Site restoration;

- Demobilization;
- Supervision and management;
- Engineering, surveying and quality control;
- Traffic control and security;
- Health & safety;
- Temporary construction facilities;
- Deferred Building 24 remedial action;
- Project administration and construction management;
- Home office overhead;
- Bond;
- Profit;
- Contingency; and
- Project closeout.

J.4.1.1 Mobilization and Preparatory Work

All alternatives (except Alternative 1 – No Action) include mobilization and preparatory work costs. Mobilization of equipment and facilities during remedial action is the transport, initial assembly and setup of construction equipment prior to project startup. Work associated with mobilization includes preparation of equipment for transport, equipment transportation and setup, drivers and equipment operators. Setup/construct temporary facilities during remedial action includes procurement, setup, and construction of office trailers, storage areas, fencing, access roads, site water treatment system, decontamination facilities, staging areas and other temporary facilities. Submittals/implementation plans includes the development of all necessary designs and work plans, including, but not limited to:

- Spill control plan;
- Erosion and sedimentation plan;
- Environmental protection plan;
- Site safety and health plan;
- Air monitoring plan;
- General site work plan;
- Construction quality control plan;
- Material handling/transportation/disposal plan;
- Sampling and analysis plan;
- Demolition plan;
- Radiation protection plan; and
- Site restoration plan

Each of these designs/plans will be prepared by competent project technical personnel and subject matter experts. A draft of each plan will undergo an internal independent technical review prior to submittal to the USACE. USACE and other stakeholder review comments will be addressed, responses formulated, and resolutions incorporated into the final design/plans.

J.4.1.2 Monitoring, Sampling, Testing, and Analysis

All alternatives (except Alternative 1 – No Action) include monitoring, sampling, testing and analysis costs. These activities will include:

- Meteorological monitoring - procurement, setup, testing, and operation of meteorological station(s) to measure and record wind, precipitation, and barometric pressure as well as other parameters.
- Radiation monitoring – measurement and recording of personal and area radiation levels during mobilization, structure and material decontamination, structure dismantlement, soils excavation, material handling, equipment/personnel decontamination, and demobilization.
- Air monitoring and sampling – installation and operation of six (6) site perimeter, and one (1) off-site background, air monitoring stations. Air filters from these stations will be counted weekly for gross alpha/gross beta and a monthly composite of the filters from each location will be sent to an off-site laboratory for radiological analysis. Installation and operation of three (3) work area air monitoring stations. Air filters from these stations will be counted daily for gross alpha/gross beta and a weekly composite of the filters from each location will be sent to an off-site laboratory for radiological analysis.
- Sampling surface water/liquid waste – collection of one (1) weekly site surface water sample, five (5) weekly site excavation/groundwater samples, and five (5) weekly site water treatment system effluent samples for radiological and chemical analysis at the on-site laboratory. Assume one (1) sample in ten will be sent to an off-site laboratory for quality assurance.
- Sampling soil – collection of Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) post–excavation confirmatory soil samples for radiological analysis at the on-site laboratory. Assume one sample in ten will be sent to an off-site laboratory for quality assurance. Collection of off-site unclassified fill and topsoil samples for radiological and chemical analysis at the on-site laboratory. Assume one (1) sample in ten will be sent to an off-site laboratory for quality assurance.
- Sampling radioactive contaminated media – collection of impacted soil samples for radiological and chemical waste acceptance analysis at the on-site laboratory. Assume one (1) sample in ten will be sent to an off-site laboratory for quality assurance.
- Laboratory chemical analysis – off-site chemical analysis of surface water, liquid waste, site water treatment system effluent, impacted soils, and off-site unclassified fill and topsoil samples at a frequency of one (1) sample in ten for quality assurance.

- Radioactive waste analysis – off-site radiological analysis (thorium, uranium) of site perimeter, background, and work area air monitoring filters. Off-site radiological analysis (radium, thorium, uranium) of surface water, liquid waste, site water treatment system effluent, impacted soils, post–excavation confirmatory soil samples. and off-site unclassified fill and topsoil samples at a frequency of one (1) sample in ten for quality assurance
- Geotechnical testing – off-site sieve analysis, Atterberg limits, and Proctor compaction for off-site unclassified fill to be used as backfill. On-site in place soil density testing of placed and compacted backfill by nuclear method.
- On-site laboratory facilities – mobilization, set-up, rental/ownership, certification/approval, equipment, labor, operation (during construction), and demobilization of a temporary, on-site radiological and chemical laboratory capable of attaining Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP) certification. The radiochemistry methods include gamma spectroscopy, alpha spectroscopy, inductively-coupled plasma mass spectroscopy (ICP-MS), and gross alpha/beta analysis. The non-radiochemistry analysis includes ICP-MS for Resource Conservation and Recovery Act (RCRA) metals, pH, conductivity, total dissolved solids, total solids, and turbidity. The latter are the typical analyses that need to be performed to insure liquid effluent discharges are compliant with the local publicly owned treatment works (POTW) and/or site-specific discharge criteria/permits.

In addition, Alternative 3 includes the following alternative-specific monitoring, sampling, testing and analysis costs:

- Radiation monitoring – radiological monitoring of incoming gravel and concrete for construction of the concrete floor slab and tank foundation at the groundwater treatment building; radiological monitoring during the installation of monitoring wells and groundwater extraction wells.
- Monitoring wells – supply and installation of ten (10) shallow and four (4) deep monitoring wells. It is assumed that: shallow wells are 10-ft deep; deep wells are 60-ft deep; and all wells are 4-inch diameter.
- Concrete inspection and testing – construction inspection and materials testing during construction of the concrete floor slab and tank foundation at the groundwater treatment building.

J.4.1.3 Site Work

All alternatives (except Alternative 1 – No Action) include site work costs. These activities will include:

- Fence demolition - assume approximately 500 linear feet (LF) of chain-link fencing, and two (2) 14-foot wide fence gates will require demolition prior to impacted soils excavation.

- Clearing and grubbing - acreage for the PRG-GW is 26.6 acres (FS Report Figure 4-4), with a small percentage of this acreage extending under existing buildings, including Building 24. Therefore, for Alternatives 2 and 3 assume that approximately 23.2 acres of area will be cleared and grubbed. Affected acreage for the PRG-CW is approximately 4.22 acres, with approximately one acres extending under the buildings. Therefore, for Alternative 4 assume that approximately 3.22 acres will be cleared and grubbed. From inspection of aerial photography of the site, assume that 90% of the site will require clearing of dense brush, and 10% of the site will require cutting & chipping of light trees to 6" in diameter.
- Roads/Parking/Curbs/Walks – construction of temporary aggregate access and haul roads may be required during performance of the remedial action.

J.4.1.4 Surface Water Collection/Controls

All alternatives (except Alternative 1 – No Action) include surface water collection/controls costs. These activities consist of weekly inspections of, and required repairs to, temporary site erosion and sedimentation controls (silt fence/hay bales) during construction.

J.4.1.5 Soil Collection/Containment

All alternatives (except Alternative 1 – No Action) include impacted soil collection/containment. These activities will include excavating impacted soils, hauling impacted soils from excavation to lined interim stockpile pad, stockpiling impacted soils, and loading impacted soils for transportation and off-site disposal as follows:

- Excavation – per FS Report Table 4-4, estimated *in situ* volume of contaminated soil material above the soil PRG-GW is 58,000 bank cubic yards (BCY). Subtracting the estimated *in situ* volume of soil above the soil PRG-GW located under Building 24 (591 BCY) results in an estimated *in situ* volume for excavation of 57,409 BCY (Alternatives 2 and 3).
- Excavation – per FS Report Table 4-4, estimated *in situ* volume of contaminated soil material above the soil PRG-CW is 5,000 BCY. Subtracting the estimated *in situ* volume of soil above the PRG-CW located under Building 24 (10 BCY) results in an estimated *in situ* volume for excavation of 4,990 BCY (Alternative 4).
- Based on similar FUSRAP projects, an average excavation rate of 25 BCY/hour is assumed, utilizing an excavation crew consisting of a hydraulic excavator with equipment operator, dewatering pump with equipment operator, and one (1) laborer.
- Hauling - per FS Report Table 4-4, the estimated *ex situ* volume of contaminated soil material above the soil PRG-GW is determined by applying a 30 percent bulking factor to the estimated *in situ* volume.
- The estimated *ex situ* volume of contaminated soil material above the soil PRG-GW, net of the material under Building 24, is 74,632 loose cubic yards (LCY).

- The estimated ex situ volume of contaminated soil material above the PRG-CW, net of the material under Building 24, is 6,487 LCY.
- Based on matching the assumed excavation rate (25 BCY/hour), an average on-site material hauling rate of 32.5 LCY/hour is assumed, utilizing a hauling crew consisting of two (2) off-road articulated dump trucks with truck drivers.
- Stockpiling – based on matching the assumed on-site material hauling rate of 32.5 LCY/hour, an average stockpiling rate of 32.5 LCY/hour is assumed, utilizing a stockpiling crew consisting of a crawler dozer with equipment operator and one (1) laborer.
- Loading from stockpile – impacted soils will be loaded from the interim stockpile pad into lined intermodal containers for transportation and off-site disposal at an average rate of 32.5 LCY/hour utilizing a crew consisting of a 1.75 CY wheeled front-end loader with equipment operator and two (2) laborers.

J.4.1.6 Site Water Treatment

All alternatives (except Alternative 1 – No Action) include on-site treatment of site waters. These activities will include:

- Site water treatment plant start-up and performance testing – assume start-up and performance testing of the site water treatment plant can be accomplished in 20 working days utilizing a crew consisting of a site water treatment plant manager, a site water treatment plant technician, a plumber (1/2 time) and an electrician (1/2 time).
- Site water treatment plant operation – assume the site water treatment plant can be operated during construction by a crew consisting of a site water treatment plant manager and a site water treatment plant technician dedicated full time. Assume operating costs will include purchase and disposal of consumables such as filter bags, carbon, and ion exchange resins.

J.4.1.7 Structure Removal

All alternatives (except Alternative 1 – No Action) include structure removal costs. These activities will include:

- Decontamination – limited building contents and structure decontamination may include: grinding and/or scabbling to remove fixed contamination on concrete, stone, or brick surfaces; media blasting to remove fixed contamination on metal surfaces; and high-efficiency particulate arrestance (HEPA) vacuuming to collect removable contamination on building contents and in the interior of each building.
- Dismantlement – following removal of presumed asbestos-containing material (PACM), miscellaneous equipment and debris, each building will be dismantled using standard and specialty heavy equipment. Dust control will be accomplished by water spraying/misting during all phases of dismantlement and material handling. Building structural materials (i.e.,

steel, concrete) will be segregated, sized, and loaded into intermodal/roll-off containers or dump trailers for removal from the site.

J.4.1.8 Waste Transportation/Disposal

All alternatives (except Alternative 1 – No Action) include waste transportation/disposal costs. These activities will include:

- Container handling – a crew consisting of a roll-off truck with driver and two (2) laborers will prepare, move and stage waste containers on-site to facilitate the loading of impacted soils, PACM, miscellaneous equipment and debris, and building structural materials for removal from the site.
- Transportation to disposal facility – a properly licensed subcontracted transportation company will haul intermodal containers, dump trailers, or other manner of conveyance loaded with impacted soils, PACM, miscellaneous equipment and debris, and building structural materials from the project site to an appropriate off-site disposal or recycling facility.
- Disposal fees and taxes – charges associates with the disposal of impacted soils, PACM, impacted miscellaneous equipment and debris, and impacted building structural materials from the project site at an appropriate off-site disposal facility. Also included here is the estimated market value of miscellaneous equipment and building structural materials from the project site that meet the criteria for recycling.

J.4.1.9 Site Restoration

All alternatives (except Alternative 1 – No Action) include waste transportation/disposal costs. These activities will include:

- Earthwork – the excavation resulting from the removal of 57,409 BCY contaminated soil material above the soil PRG-GW (Alternatives 2 and 3) will be backfilled with imported, suitable fill. Imported fill will be delivered from off-site to the excavation, dumped, spread and compacted using standard heavy construction equipment. A 6-inch thick layer of imported topsoil will be spread over an approximately 23.2-acre area disturbed during the remedial action.
- Earthwork – the excavation resulting from the removal of 4,990 BCY contaminated soil material above the soil PRG-CW (Alternative 4) will be backfilled with imported, suitable fill. Imported fill will be delivered from off-site to the excavation, dumped, spread and compacted using standard heavy construction equipment. A 6-inch thick layer of imported topsoil will be spread over an approximately 3.2-acre area disturbed during the remedial action.

- Fencing – assume replacement of approximately 500 linear feet (LF) of chain-link fencing, and two (2) 14-foot wide fence gates that were removed to facilitate impacted soils excavation.
- Revegetation – assume vegetation will be established over an approximately 23.2-acre (Alternatives 2 and 3) area of newly placed topsoil by application of seed, fertilizer, and mulch.
- Revegetation – assume vegetation will be established over an approximately 3.2-acre (Alternative 4) area of newly placed topsoil by application of seed, fertilizer, and mulch.

J.4.1.10 Demobilization

All alternatives (except Alternative 1 – No Action) include demobilization and submittal preparation costs. Demobilization of equipment and facilities following remedial action is the dismantlement and transport of construction equipment at project completion. Work associated with demobilization includes equipment decontamination, preparation of equipment for transport, equipment transportation, drivers and equipment operators. Removal of temporary facilities following remedial action includes dismantlement and removal of office trailers, storage areas, fencing, access roads, site water treatment system, decontamination facilities, staging areas and other temporary facilities. Submittals include a construction documentation report.

J.4.1.11 General Requirements

J.4.1.11.1 Supervision and Management

All alternatives (except Alternative 1 – No Action) include supervision and management costs. These activities will include:

- Program Manager – assume a Program Manager located in the contractor's home office will be dedicated to the project 25% of the time (i.e., 10 hours/week) during the remedial action.
- Project Manager – assume a Project Manager located in the contractor's home office will be dedicated to the project 50% of the time (i.e., 20 hours/week) during the remedial action. The Project Manager will visit the project site for two (2) days, every other month, during the remedial action.
- Site Superintendent – a Site Superintendent located at the project site will be dedicated to the project 100% of the time (i.e., 40 hours/week) during the remedial action.
- Vehicles, travel and per diem – the Project Manager will incur travel expenses and require a vehicle (local travel at the site) and per diem during the bimonthly site visits. The Site Superintendent will require a site vehicle (pick-up truck) and per diem full-time during the remedial action. The Site Superintendent will incur travel expenses for one (1) weekend trip home each month during the remedial action.

J.4.1.11.2 Administration Job Office

All alternatives (except Alternative 1 – No Action) include administrative job office costs. These activities will include:

- Clerk/Typist/Receptionist – assume a Clerk/Typist/Receptionist located at the project site will be dedicated to the project 100% of the time (i.e., 40 hours/week) during the remedial action. The Clerk/Typist/Receptionist is a local hire and will not require a vehicle, travel or per diem.
- Computer Technician – assume a Computer Technician located at the project site will be dedicated to the project 50% of the time (i.e., 20 hours/week) during the remedial action. The Computer Technician is a local hire and will not require a vehicle, travel or per diem.
- Office Supplies – assume ten reams of copier/printer paper per month.

J.4.1.11.3 Engineering, Survey and Quality Control

All alternatives (except Alternative 1 – No Action) include engineering, surveying, and quality control costs. These activities will include:

- Civil Engineer – a Civil Engineer located at the project site will be dedicated to the project 100% of the time (i.e., 40 hours/week) during the remedial action. The Civil Engineer is a local hire and will not require a vehicle, travel or per diem.
- Surveyors – a survey crew consisting of one (1) Land Surveyor III, one (1) Land Surveyor I, a vehicle (truck), and survey instruments/equipment will be dedicated to the project 25% of the time (i.e., 10 hours/week) during the remedial action. The survey crew is a local hire and will not require travel or per diem.
- Waste Manager – a Waste Manager located at the project site will be dedicated to the project 100% of the time (i.e., 40 hours/week) during the remedial action. The Waste Manager is a local hire and will not require a vehicle, travel or per diem.
- Quality Control Manager - a Quality Control Manager located at the project site will be dedicated to the project 100% of the time (i.e., 40 hours/week) during the remedial action.
- Chemical Quality Control Manager (Data Acquisition Manager) – a Chemical Quality Control Manager (Data Acquisition Manager) located at the project site will be dedicated to the project 100% of the time (i.e., 40 hours/week) during the remedial action.
- Vehicles, travel and per diem - the Quality Control Manager and Chemical Quality Control Manager (Data Acquisition Manager) will each require a vehicle (automobile) and per diem full-time during the remedial action. Also, the Quality Control Manager and Chemical Quality Control Manager (Data Acquisition Manager) will each incur travel expenses for one (1) weekend trip home each month during the remedial action.

J.4.1.11.4 Traffic Control and Security

All alternatives (except Alternative 1 – No Action) include traffic control and security costs. These activities will include:

- Water truck – a 3,000-gallon water truck with truck driver will be operated on site 100% of the time during the remedial action for dust control.
- Watchmen/guards – a watchman/guard will be stationed at the project main access gate during normal working hours (i.e., 40 hours/week). Assume the watchman/guard is a local hire.

J.4.1.11.5 Health and Safety

All alternatives (except Alternative 1 – No Action) include health and safety costs. These activities will include:

- Safety & Health Manager – a Safety & Health Manager located at the contractor's home office will be dedicated to the project 50% of the time (i.e., 20 hours/week) during the remedial action. The Safety & Health Manager will visit the project site for two (2) days each month during the remedial action.
- Radiation Safety Officer - a Radiation Safety Officer located at the project site will be dedicated to the project 100% of the time (i.e., 40 hours/week) during the remedial action.
- Site Safety & Health Officer – a Site Safety & Health Officer located at the project site will be dedicated to the project 100% of the time (i.e., 40 hours/week) during the remedial action.
- Health and safety training – all site workers will complete site-specific health and safety training and radiation safety training.
- Health and safety medical exams – all site workers will participate in a medical surveillance program including an entry physical prior to starting work at the site, and an exit physical at the termination of working at the site.
- Personal protective equipment – all site workers will be provided appropriate personal protective equipment (PPE) commensurate with anticipated hazards. PPE may include hard hats, safety glasses, gloves, chemical resistant suits and respirators.
- Vehicles and per diem - the Safety & Health Manager will incur travel expenses and require a vehicle (local travel at the site) and per diem during the monthly site visits. The Radiation Safety Officer and Site Safety & Health Officer will each require a site vehicle (pick-up truck) and per diem full-time during the remedial action. The Radiation Safety Officer and Site Safety & Health Officer will each incur travel expenses for one (1) weekend trip home each month during the remedial action.

J.4.1.11.6 Temporary Construction Facilities

All alternatives (except Alternative 1 – No Action) include temporary construction facilities costs. These activities will include:

- Temporary construction facilities ownership – ownership or rental for field office trailers, facilities, and related items for temporary construction facilities for remedial action work.
- Temporary construction facilities operation – janitorial services for weekly cleaning and restocking temporary construction facilities. Also, purchase, deliver, spreading and compaction of gravel for haul road maintenance.
- Project utilities – usage of temporary project utilities (i.e., telephone, electrical, water, and internet) during remedial action work.

J.4.1.12 Alternative 3 Unique Features

In addition, Alternative 3 includes the following unique capital cost components:

- Development of groundwater extraction/treatment system design;
- Installation of monitoring and extraction wells;
- Construction of rubblized trench; and
- Construction of groundwater treatment system.

J.4.1.12.1 Development of Groundwater Extraction/Treatment System Design

Alternative 3 includes design of the groundwater extraction system, and preparation of plans and specifications for system construction. These designs/plans will be prepared by competent project technical personnel and subject matter experts. A draft of each design/plan will undergo an internal independent technical review prior to submittal to the USACE. USACE and other stakeholder review comments will be addressed, responses formulated, and resolutions incorporated into the final design/plans.

J.4.1.12.2 Installation of Monitoring and Extraction Wells

Alternative 3 includes supply and installation of ten (10) shallow and four (4) deep monitoring wells. It is assumed that the shallow monitoring wells are 10-ft deep and the deep monitoring wells are 60-ft deep. All monitoring wells are assumed to be 4-inch diameter. Alternative 3 also includes supply and installation of seven (7) shallow and three (3) deep extraction wells. It is assumed that the shallow extraction wells are 10-ft deep and the deep extraction wells are 60-ft deep. All extraction wells are assumed to be 4-inch diameter. As part of the design process, pumping tests would be performed in the shallow and deep aquifer near the proposed extraction well locations in the northwest portion of the Site and in the vicinity of the proposed extraction

wells near the southern property boundary to better characterize the aquifer and capture zones in the areas of the proposed extraction wells.

J.4.1.12.3 Construction of Rubblized Trench

Alternative 3 includes installation of a 600-ft long, 24-ft deep, 10-ft wide blast-fractured bedrock trench located near the southern property boundary. A test trench would be blasted as part of the pumping test program to provide data on the change in permeability in the blast zone during the pumping test. Assume the equivalent of a 50 ft x 24 ft x 10 ft test trench section will be blasted/rubblized. It is assumed that six (6), 12-inch diameter extraction sumps will be installed to a depth of 30 feet into the rubblized trench. It is assumed that approximately 1,500 lf of 3-inch/6-inch diameter high-density polyethylene (HDPE) double wall underground laterals and transfer piping will be installed from the rubblized trench and deep extraction wells to a groundwater treatment facility, to be centrally located on the project site.

J.4.1.12.4 Construction of Groundwater Treatment System

FS Report Section 4.3.3.3 Groundwater Treatment indicates that it is expected that ion exchange using a regeneration process will be selected as the groundwater treatment technology at the Guterl site. Assume that the groundwater treatment system will be housed in a 4,000 SF pre-engineered steel building. Assume the building will be constructed on a 6-inch thick, reinforced concrete slab underlain by a 12-inch compacted gravel fill layer. Groundwater treatment process equipment will include various tankage, ion exchange/demineralization equipment, pumps, controls, piping and valves.

J.4.1.13 Deferred Building 24 Remedial Action

All alternatives (except Alternative 1 – No Action) include deferred Building 24 remedial action costs. Soils beneath Building 24 are impacted above derived concentration guideline levels (DCGLs) but this contamination is not addressed under FUSRAP because Building 24 is an occupied building. Dismantlement of Building 24 is required to access contaminated soil above the PRG-GW/CW. FUSRAP-related contaminated soil underneath Building 24 is determined to be inaccessible, according to USACE Engineering Regulation, ER 200-1-4. Inaccessible contamination is defined as "FUSRAP eligible contaminants, as defined by paragraph 6.b.(2)(b) of this regulation, that have been determined by USACE in coordination with the support agency and land owner, to be inaccessible because the contamination is located under an active road, bridge, building, rail line, utility line, permanent structure or other physical obstruction that prevents taking a response action at the present time." The contamination is located underneath an active building used by the property owner. Dismantlement of Building 24 will be deferred until a later date when the building is no longer actively used. Abandonment of the building will allow for dismantlement and therefore, access to underlying contaminated soil.

For purposes of cost estimation, it is assumed that Building 24 will become unoccupied and therefor accessible for remediation in year 30. It is further assumed that in year 30 Building 24 will be at the end of its service life and will have no real estate market value. The present value of remediating Building 24 in year 30 was calculated using a discount rate of 3.21% based on guidance provided by Huntsville Center – Programs & Planning Branch to use the "Historical *Consumer Price Index, All Urban Consumers (CPI-U), U.S. city average, for All Items*" average annual percentage change from 1913 to present (Source www.bls.gov).

Deferred remediation of Building 24 in year 30 as a stand-alone remedial action will require mobilization, utilization and demobilization of all necessary support activities, similar to those needed during the site-wide remedial action (e.g., equipment mobilization / decontamination / demobilization, environmental monitoring, erosion & sedimentation controls, site water management, temporary facilities, project management, supervision, engineering, health & safety, etc.). Cost efficiencies may be realized by remediating Building 24 as part of the site-wide remedial action. The non-discounted estimated cost for deferred Building 24 remediation as a stand-alone effort is approximately $35.5 million dollars, including contingency. The non-discounted estimated cost for remediating Building 24 as part of the site-wide remedial action is approximately $21.7 million dollars, including contingency and real estate acquisition costs. The discounted (i.e., present value) estimated cost for deferred Building 24 remediation in year 30 is approximately $13.8 million dollars, including contingency. This discounted cost is included in the base and contingency costs for Alternatives 2, 3 and 4.

J.4.1.14 Home Office Overhead

All alternatives (except Alternative 1 – No Action) include home office overhead costs. Home office overhead is part of the contactor's overall cost of doing business, as shared by the project. Home office overhead has been included as a 15% markup (indirect cost) on capital and O&M costs for the prime contractor and for the health physics subcontractor. It should be noted that job office expenses have been itemized (bottom up estimate) as a direct cost for both the remedial construction (capital) and O&M project phases.

J.4.1.15 Bond

All alternatives (except Alternative 1 – No Action) include bond costs. A 1% markup (indirect cost) for prime contractor payment and performance bond has been applied.

J.4.1.16 Profit

All alternatives (except Alternative 1 – No Action) include contractor profit. An 8% markup (indirect cost) for prime contractor profit has been applied to the total cost. A 10% profit has

been applied to work performed by the health physics subcontractor. Profit for other subcontractors is included in the unit costs for each subcontracted item.

J.4.1.17 Contingency

All alternatives (except Alternative 1 – No Action) include contingency. Contingency is monies added to the estimated direct and indirect construction costs to cover unknowns, unforeseen uncertainties, and/or unanticipated conditions that are not possible to adequately evaluate or determine from the data on hand at the time the cost estimate is prepared. Contingencies relate to the uncertainties of the current know and defined project scope and are not a prediction of future project scope or schedule changes.

The appropriate contingency to apply to the estimated construction cost was determined by performing an Abbreviated Risk Analysis (ARA) on the project utilizing the Excel-based ARA template. The process for identifying contingency dollars in the ARA included the following steps:

1. Input the estimated project costs into the ARA template.
2. Identify and record project risks associated with each alternative using a multidisciplinary team of professionals.
3. Categorize the risks based on (1) the likelihood of occurrence, ranging from "unlikely" to "very likely"; and (2) the potential impact of the occurrence, ranging from "negligible" to "critical".
4. Apply the resulting contingency percentages to the corresponding estimated project costs.

The primary risks identified for Alternative 2 remedial action were related to the estimated waste transportation and disposal costs. These costs are based on volumes derived from site modeling (impacted soils) and assumed disposal determinations. Variations in waste quantities and/or disposal determinations will likely have a significant impact on project cost. Alternative 2 remedial action cost estimate assumes that a significant amount of the miscellaneous equipment, debris, and building structural materials to be removed from the site will be recycled. Disposal of these materials, if required rather than recycling, would also likely have a significant impact on project cost. The overall project contingency resulting from the ARA for Alternative 2 remedial action was approximately 43.7 %.

Variations in the estimated waste transportation and disposal costs were also identified as primary risks for the Alternative 3 remedial action. A concern was also raised that the potential exists for iron fouling of screens in the rubblized trench sumps and extraction wells that could impede water collection. Additional measures (e.g., acid metering pumps) may be required during installation of the rubblized trench and extraction wells to minimize this effect. The overall project contingency resulting from the ARA for Alternative 3 remedial action was approximately 43.4%.

Variations in the estimated waste transportation and disposal costs were also identified as primary risks for the Alternative 4 remedial action. The overall project contingency resulting from the ARA for Alternative 4 remedial action was approximately 40.7%.

Estimated contingencies have been applied to the cost estimate for each alternative and are included in Table J-2 and Attachments J-1, J-2, and J-3.

J.4.1.18 USACE Cost Components

J.4.1.18.1 Project Administration and Construction Management

All alternatives (except Alternative 1 – No Action) include project administration and construction management costs. USACE supervision and administration (S&A) and construction management costs are estimated at $125,000/month during remedial action, and for 12 months prior to remedial action (design/work plan preparation and review), and for six (6) months following remedial action (construction documentation report preparation and review). The estimated monthly cost is based on the actual level of effort required for these activities on past USACE Buffalo District FUSRAP projects.

J.4.1.18.2 Project Closeout

All alternatives (except Alternative 1 – No Action) include project closeout costs. USACE project closeout costs are estimated at $500,000/year, for two (2) years following completion of the remedial action based on the actual level of effort required for these activities on past USACE Buffalo District FUSRAP projects.

J.4.2 Operation and Maintenance Cost Components

Operation and maintenance cost components for the evaluated alternatives (excluding Alternative 1 – No Action) include, at a minimum:

- Mobilization and preparatory work (including project implementation plans);
- Engineering LUCs;
- Monitoring, sampling, testing, and analysis;
- General requirements;
- Project administration and construction management;
- Home office overhead;
- Bond;
- Profit; and
- Contingency.

J.4.2.1 Mobilization and Preparatory Work (including project implementation plans)

All alternatives (except Alternative 1 – No Action) include mobilization and preparatory work costs. These activities will include the development of all necessary designs and work plans, including a Site Safety and Health Plan and a Performance and Compliance Monitoring Plan. Each of these designs/plans will be prepared by competent project technical personnel and subject matter experts. A draft of each plan will undergo an internal independent technical review prior to submittal to the USACE. USACE and other stakeholder review comments will be addressed, responses formulated, and resolutions incorporated into the final design/plans.

J.4.2.2 Land Use Controls (LUCs)

All alternatives (except Alternative 1 – No Action) include LUCs costs. LUCs would be necessary to prevent human exposure to contaminated media (soil, buildings and groundwater) during remedial action. This activity includes the following engineering controls necessary to prevent human expose to contaminated media:

- Annual site inspections - performance of an annual inspection of the site to confirm that land-use controls implemented at the site remain in place. Site inspections will be performed until the impacted groundwater has been naturally attenuated to achieve the maximum contaminant level (MCL) for uranium (Alternative 2 – 120 years; Alternative 3 – 30 years; Alternative 4 – 660 years).
- Maintain site security fencing and signage – replacement of approximately 100 LF of site perimeter security fencing and approximately 10 warning signs, every five (5) years (Alternative 2 – 120 years; Alternative 3 – 30 years; Alternative 4 – 660 years).

J.4.2.3 Monitoring, Sampling, Testing, and Analysis

All alternatives (except Alternative 1 – No Action) include monitoring, sampling, testing and analysis costs. These activities will include:

- Radiation monitoring - monitoring of the work area during decommissioning of faulty site groundwater monitoring and extraction wells, and the installation of replacement groundwater monitoring and extraction wells and pumps.
- Monitoring wells – replace two (2) monitoring wells every five (5) years, decommission all monitoring wells at the end of the O&M period (Alternative 2 – 120 years; Alternative 3 – 30 years; Alternative 4 – 660 years).

- Groundwater sampling and analysis – under Alternative 2 collect groundwater samples from the indicated locations at the indicated frequencies, and analyze samples for volatile organic compounds (VOCs) and uranium:
    - Five (5) groundwater seep locations along the Erie Canal, annually for 120 years.
    - 16 shallow and 10 deep monitoring wells: semi-annually for years 1 – 3; annually for years 4 – 30; and every 5 years for years 35 – 120.
- Groundwater sampling and analysis – under Alternative 3 collect groundwater samples from the indicated locations at the indicated frequencies, and analyze samples for VOCs and uranium:
    - Five (5) groundwater seep locations along the Erie Canal, annually for 30 years.
    - 26 shallow and 14 deep monitoring wells, five (5) trench extraction sumps, and groundwater treatment system influent and effluent: semi-annually for years 1 – 3; annually for years 4 and 5; and every 5 years for years 10 – 30.
- Groundwater sampling and analysis – under Alternative 4 collect groundwater samples from the indicated locations at the indicated frequencies, and analyze for VOCs and uranium:
    - Five (5) groundwater seep locations along the Erie Canal, annually for 660 years.
    - 16 shallow and 10 deep monitoring sells: semi-annually for years 1 – 3; annually for years 4 – 30; and every 5 years for years 35 – 660.
- Five-year reviews (FYRs) - performance of a five-year review process that analyzes the implementation and effectiveness of the site remedy. Because the alternatives would result in uranium remaining in groundwater and potentially seeping to the Erie Canal, CERCLA requires that the Site be reviewed at least once every five years to ensure the protectiveness of the remedy. The components of the five-year review process are:
    - Preparation of Work Plan
    - Community Involvement and Notification
    - Documents Review
    - Data Review and Analysis
    - Site Inspection
    - Interviews
    - Protectiveness Determination
    - Preparation of Five-Year CERCLA Review Report
    - Status Meetings and Progress Reports

A five-year review will be performed every five (5) years during the O&M period (Alternative 2 – 120 years; Alternative 3 – 30 years, Alternative 4 – 660 years), beginning in year 5.

J.4.2.4 Disposal (Commercial)

All alternatives (except Alternative 1 – No Action) include waste disposal costs. These activities will include:

- Alternative 2: Transportation and off-site disposal of:
  - Drill cuttings and well materials from replacement of 2 monitoring wells every 5 years, during years 5 – 115.
  - Drill cuttings and well materials from decommissioning 16 shallow and 10 deep monitoring wells at the end of year 120.
- Alternative 3: Transportation and off-site disposal of:
  - Spent ion resin from operation of the groundwater treatment facility, annually for 30 years.
  - Drill cuttings and well materials from replacement of 2 monitoring wells every 5 years, during years 5 – 25.
  - Drill cuttings and well materials from replacement of 2 extraction wells every 5 years during years 5 – 25.
  - Drill cuttings and well materials from decommissioning 26 shallow and 14 deep monitoring wells at the end of year 30.
  - Drill cuttings and well materials from decommissioning of 7 shallow and 3 deep extraction wells, and 5 groundwater extraction trench sumps, at the end of year 30.
  - Groundwater Treatment Facility equipment and building contents at the end of year 30.
  - Groundwater Treatment Facility building structural and foundation materials at the end of year 30.
- Alternative 4: Transportation and off-site disposal of:
  - Drill cuttings and well materials from replacement of 2 monitoring wells every 5 years, during years 5 – 655.
  - Drill cuttings and well materials from decommissioning 16 shallow and 10 deep monitoring wells at the end of year 660.

J.4.2.5 Demobilization

Alternative 3 includes the decontamination, dismantlement and transport of groundwater treatment facility demolition equipment at O&M period completion. Work associated with demobilization includes preparation of equipment for transport, equipment transportation, drivers and equipment operators. Submittals include a construction documentation report.

J.4.2.6 General Requirements

All alternatives (except Alternative 1 – No Action) include general requirements costs. These activities will include:

J.4.2.6.1 Supervision and Management

- Project Manager (Alternative 2) - will work on the project: 160 hours during year 1; 80 hours per year during years 2 - 30; 40 hours per year during years 31 - 120; and an additional 40 hours every 5 years during years 5 - 120.
- Project Manager (Alternative 3) - will work on the project: 80 hours per year during years 1 - 30; an additional 80 hours every 5 years during years 5 – 25; and an additional 120 hours during year 30.
- Project Manager (Alternative 4) – will work on the project: 160 hours during year 1; 80 hours per year during years 2 – 30; 40 hours per year during years 31 – 660; and an additional 40 hours every 5 years, during years 5 – 660.

J.4.2.6.2 Engineering, Survey, and Quality Control

- Hydrogeologist (Alternative 2) - will work on the project: 80 hours for year 1; 40 hours per year during years 2 - 30; 24 hours per year during years 31 - 120, plus an additional 40 hours, every 5 years, during years 5 - 120.
- Hydrogeologist (Alternative 3) - will work on the project: 120 hours per year on the project during years 1 - 30; an additional 120 hours, every 5 years during years 5 – 25; and an additional 120 hours during Year 30.
- Hydrogeologist (Alternative 4) - will work on the project: 80 hours for year 1; 40 hours per year during years 2 - 30; 24 hours per year during years 31 - 660, plus an additional 40 hours, every 5 years, during years 5 - 660.

J.4.2.6.3 Health and Safety

- Site Safety & Health Officer (Alternative 2) - will work on the project 40 hours during year 1; 40 hours per year during years 2 - 30; 16 hours per year during years 31 - 120, plus an additional 40 hours, every 5 years, during years 5 - 120.
- Site Safety & Health Officer (Alternative 3) - will work on the project: 120 hours per year during years 1 - 30; an additional 80 hours, every 5 years during years 5 – 25; and 120 hours during year 30.
- Site Safety & Health Officer (Alternative 4) - will work on the project 40 hours during year 1; 40 hours per year during years 2 - 30; 16 hours per year during years 31 - 660, plus an additional 40 hours, every 5 years, during years 5 - 660.

J.4.2.7 Alternative 3 Unique Features

In addition, Alternative 3 includes the following O&M cost components:

- Replace groundwater extraction pumps and wells, decommission all at end of O&M period;

- Operate and maintain groundwater treatment facility;
- Transport and dispose groundwater treatment facility effluent and spent consumables;
- Transport and dispose monitoring and extraction well materials; and
- Demolish, transport and dispose groundwater treatment facility equipment and structure.

J.4.2.7.1 Replace Groundwater Extraction Pumps/Wells, Decommission at end O&M Period

Seven (7) shallow and three (3) deep groundwater extraction wells are to have been installed during the remedial action. It is assumed that the shallow wells are 10-ft deep, the deep wells are 60-ft deep, and all wells are 4-inch diameter. Per the FS Report, assume that two (2) extraction wells will be replaced every five 5 years during years 5 - 25. Replacement wells will be installed within approximately 50 feet of the removed well. Assume seven (7) shallow extraction wells and three (3) deep extraction wells will be decommissioned at the end of year 30. Assume that five (5) groundwater extraction pumps will be replaced every five (5) years. Assume replacement of four (4) shallow extraction well pumps and one (1) deep extraction well pump every five (5) years during years 5 - 25.

J.4.2.7.2 Operate and Maintain Groundwater Treatment Facility

Assume the groundwater treatment facility can be operated during the O&M period (30 years) by a crew consisting of a site water treatment plant manager and a site water treatment plant technician dedicated full time. Assume operating costs will include purchase of consumables such as ion exchange resins.

J.4.2.7.3 Transport/Dispose Groundwater Treatment Facility Effluent & Spent Consumables

Following treatment, groundwater treatment facility effluent would be discharged to the industrial sewer line, which connects to the City of Lockport POTW, in accordance with approved acceptance criteria. Groundwater treatment facility spent ion exchange resin and other consumables would be transported off-site to an appropriate disposal facility.

J.4.2.7.4 Transport and Dispose Extraction Well Materials

This activity includes transportation and off-site disposal of drill cuttings (soil), well construction materials, pumps, piping and controls generated during the periodic replacement during the O&M period, and final decommissioning of seven (7) shallow and three (3) deep groundwater extraction wells.

J.4.2.7.5 Demolish/Transport/Dispose Groundwater Treatment Facility Equipment/Structure

This activity includes removal of groundwater treatment equipment, and the demolition of the groundwater treatment facility at the end of the O&M period (year 30). This activity also

includes transportation and off-site disposal of removed groundwater treatment equipment and groundwater treatment facility demolition debris.

J.4.2.8 Home Office Overhead

Home office overhead is part of the contractor's overall cost of doing business, as shared by the project. Home office overhead has been included as a 15% markup (indirect cost) on capital and O&M costs for the prime contractor and for the health physics subcontractor. It should be noted that job office expenses have been itemized (bottom up estimate) as a direct cost for both the remedial construction (capital) and O&M project phases.

J.4.2.9 Bond

A 1% markup (indirect cost) for prime contractor payment and performance bond has been applied to the total cost.

J.4.2.10 Profit

An 8% markup (indirect cost) for prime contractor profit has been applied to the total cost. A 10% profit has been applied to work performed by the health physics subcontractor. Profit for other subcontractors is included in the unit costs for each subcontracted item.

J.4.2.11 Contingency

Contingency is monies added to the estimated direct and indirect construction costs to cover unknowns, unforeseen uncertainties, and/or unanticipated conditions that are not possible to adequately evaluate or determine from the data on hand at the time the cost estimate is prepared. Contingencies relate to the uncertainties of the current know and defined project scope and are not a prediction of future project scope or schedule changes.

The appropriate contingency to apply to the estimated construction cost was determined by performing an Abbreviated Risk Analysis (ARA) on the project utilizing the Excel-based ARA template. The process for identifying contingency dollars in the ARA included the following steps:

1. Input the estimated project costs into the ARA template.
2. Identify and record project risks associated with each alternative using a multidisciplinary team of professionals.
3. Categorize the risks based on (1) the likelihood of occurrence, ranging from "unlikely" to "very likely"; and (2) the potential impact of the occurrence, ranging from "negligible" to "critical".
4. Apply the resulting contingency percentages to the corresponding estimated project costs.

The primary risks identified for Alternative 2 operations and maintenance were: extended duration of the operations and maintenance period required to achieve the groundwater MCL for uranium, additional sampling and analysis required, and uncertainty regarding application of land use controls. The overall project contingency resulting from the ARA for Alternative 2 operations and maintenance was approximately 8.8%.

Extended duration of the operations and maintenance period required to achieve the groundwater MCL for uranium, and additional sampling and analysis required were also identified as primary risks for the Alternative 3 operations and maintenance. Additionally, a concern was raised that the potential exists for iron fouling of screens in the rubblized trench sumps and extraction wells that could impede water collection. Additional measures (e.g., acid metering pumps) may be required during operations and maintenance to minimize this effect. The overall project contingency resulting from the ARA for Alternative 3 operations and maintenance was approximately 10.6%.

Extended duration of the operations and maintenance period required to achieve the groundwater MCL for uranium, and additional sampling and analysis required were also identified as primary risks for the Alternative 4 operations and maintenance. The overall project contingency resulting from the ARA for Alternative 4 operations and maintenance was approximately 8.8%.

Estimated contingencies have been applied to the operations and maintenance cost estimate for each alternative and are included in Table J-2 and Attachments J-1, J-2, and J-3.

J.4.2.12 USACE Cost Components

All alternatives (except Alternative 1 – No Action) include project administration and construction management costs during the O&M period. USACE supervision and administration (S&A) and construction management costs are estimated at $50,000/year during the O&M period, based on the anticipated level of effort required for these activities.

J.5 REFERENCES

USACE, 26 March 1993. *ER 1110-1-1300, Cost Engineering Policy and General Requirements*

USACE, 30 December 2016. *ER 1110-3-1301*, *Environmental Remediation and Removal Programs Cost Engineering*

USACE, 30 June 2016. *ER 1110-2-1302, Civil Works Cost Engineering*

USACE, 26 June 1992. *ER 1165-2-132, Hazardous, Toxic, and Radioactive Waste (HTRW) Guidance for Civil Works Projects*

USACE, et al 2000. *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study*

USACE, et al 1996. *Hazardous, Toxic and Radioactive Waste Remedial Action Work Breakdown Structure*

USACE, et al 1996. *Hazardous, Toxic and Radioactive Waste Operation and Maintenance Work Breakdown Structure*

ATTACHMENT J-1

FEASIBILITY STUDY COMPARISON ESTIMATE

SITE-WIDE ALTERNATIVE 2 – DISMANTLEMENT AND OFF-SITE DISPOSAL OF BUILDINGS 1, 2, 3, 4/9, 5, 6, 8, 24, AND 35; COMPLETE SOIL REMOVAL TO THE SOIL PRG-GW AND OFF-SITE DISPOSAL; MONITORED NATURAL ATTENUATION WITH ENVIRONMENTAL MONITORING

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-wide Alternative 2
Feasibility Study Comparison Estimate Summary

SITE-WIDE ALTERNATIVE 2 REMEDIAL ACTION (FSCE FY20-2)

Feature of Work			Estimated Cost
Mobilization and Preparatory Work			$ 920,660
Monitoring, Sampling, Testing,and Analysis			$ 13,387,371
Site Work			$ 125,612
Surface Water Collection and Control			$ 219,037
Solids Collection and Containment			$ 8,755,366
Liquids / Sediments / Sludges Collection and Containment			$ 986,978
Drums / Tanks / Structures / Miscellaneous Demolition and Removal			$ 9,270,406
Disposal (Commercial)			$ 57,719,368
Site Restoration			$ 3,624,924
Demobilization			$ 579,890
General Requirements			$ 12,548,554
		Subtotal	$ 108,138,168
Planning, Engineering, & Design / Procurement (Assume 1% of construction)			$ 1,081,382
Supervision & Administration / Construction Management			$ 6,125,000
Remedial Action Closeout			$ 1,000,000
Design & Construction		*Subtotal*	$ 116,344,550
Contingency	43.7%		$ 50,787,057
Design, Construction & Contingency		*Subtotal*	$ 167,131,607
Deferred Building 24 Remedial Action (Non-discounted)			$ 24,731,958
Contingency (Non-discounted)	43.7%		$ 10,796,066
Deferred Building 24 Remedial Action, Incl. Contingency (Non-discounted)			$ 35,528,024
Deferred Building 24 Remedial Action (Present Value: Year 30, i = 3.21%)			$ 9,576,363
Contingency (Present Value: Year 30, i = 3.21%)	43.7%		$ 4,180,301
Deferred Building 24 Remedial Action, Incl. Contingency (Present Value: Year 30, i = 3.21%)		*Subtotal*	$ 13,756,664
Site-wide Alternative 2 Remedial Action (Capital)		*Total*	*$ 180,888,271*
For Informational Purposes Only, Not a Component of Alternative 2:			
Building 24 Remedial Action Concurrent With Site-wide Remedial Action			*$ 14,437,107*
Contingency	*43.7%*		*$ 6,302,127*
		Subtotal	*$ 20,739,234*
Real Estate Estimated Fair Market Value			*$ 907,000*
Real Estate Contingency	*10%*		*$ 90,700*
Building 24 Remedial Action Concurrent with Site-Wide Remedial Action (Non-discounted)		*Total*	*$ 21,736,934*

SITE-WIDE ALTERNATIVE 2 OPERATION & MAINTENANCE (FSCE FY20-2) (Non-discounted)

Feature of Work			Estimated Cost
Mobilization and Preparatory Work ($/year, average)			$ 7,557
Monitoring, Sampling, Testing,and Analysis ($/year, average)			$ 56,112
Disposal (Commercial)($/year, average)			$ 855
General Requirements ($/year, average)			$ 12,733
		Subtotal	$ 77,257
Planning, Engineering, & Design / Procurement (Assume 1% of construction)($/year, average)			$ 773
Supervision & Administration / Construction Management ($/year, average)			$ 50,000
		Subtotal	$ 128,029
Contingency ($/year, average)	8.8%		$ 11,228
Annual Operation & Maintenance Cost ($/year, average)			$ 139,257
Operation & Maintenance Period (years)			120
Site-wide Alternative 2 Operation & Maintenance (Non-discounted)		*Total*	*$ 16,710,878*

SITE-WIDE ALTERNATIVE 2 OPERATION & MAINTENANCE (FSCE FY20-2) (Discounted)

Feature of Work			Estimated Cost
Mobilization and Preparatory Work (Present Value: 120 Years, i = 3.21%)			$ 356,918
Monitoring, Sampling, Testing,and Analysis (Present Value: 120 Years, i = 3.21%)			$ 2,319,207
Disposal (Commercial) (Present Value: 120 Years, i = 3.21%)			$ 21,788
General Requirements (Present Value: 120 Years, i = 3.21%)			$ 499,729
		Subtotal	$ 3,197,642
Planning, Engineering, & Design / Procurement (Assume 1% of construction)			$ 31,976
Supervision & Administration / Construction Management (Present Value: 120 Years, i = 3.21%)			$ 1,521,099
		Subtotal	$ 4,750,717
Contingency	8.8%		$ 416,628
Site-wide Alternative 2 Operation & Maintenance (Discounted)		*Total*	*$ 5,167,345*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 2
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
SITE-WIDE ALTERNATIVE 2 REMEDIAL ACTION FSCE (FY20-2)					
Mobilization and Preparatory Work					
Mobilize Construction Equipment					
Vehicle loads (small to large)	38.0	ea	$1,476.59	$56,110	*38 loads / pieces on flatbed transport*
Submittals / Implementation Plans					
Spill Control Plan	1.0	ea	$13,871.16	$13,871	*Draft, ITR, agency review, response and final*
Erosion and Sedimentation Control Plan	1.0	ea	$21,826.11	$21,826	*Draft, ITR, agency review, response and final*
Environmental Protection Plan	1.0	ea	$21,826.11	$21,826	*Draft, ITR, agency review, response and final*
Site Safety and Health Plan (SSHP)	1.0	ea	$38,017.67	$38,018	*Draft, ITR, agency review, response and final*
Air Monitoring Plan	1.0	ea	$23,106.12	$23,106	*Draft, ITR, agency review, response and final*
General Site Work Plan	1.0	ea	$49,723.07	$49,723	*Draft, ITR, agency review, response and final*
Construction Quality Control Plan	1.0	ea	$32,486.51	$32,487	*Draft, ITR, agency review, response and final*
Material Handling / Transportation / Disposal Plan	1.0	ea	$26,400.46	$26,400	*Draft, ITR, agency review, response and final*
Sampling and Analysis Plan	1.0	ea	$64,440.38	$64,440	*Draft, ITR, agency review, response and final*
Demolition Plan	1.0	ea	$28,830.50	$28,831	*Draft, ITR, agency review, response and final*
Radiation Protection Plan	1.0	ea	$41,127.27	$41,127	*Draft, ITR, agency review, response and final*
Site Restoration Plan	1.0	ea	$27,049.34	$27,049	*Draft, ITR, agency review, response and final*
Setup / Construct Temporary Facilities					
Office Trailers	5.0	ea	$8,074.53	$40,373	*Trailers: (1) dbl-wide contractor, (1) dbl-wide operations, (1) health physics trailer*
Storage Facilities	2.0	ea	$1,636.57	$3,273	*(2) 40' x 8' storage containers*
Decontamination Facilities for Personnel	2.0	ea	$11,405.68	$22,811	*(2) 24' x 8' decontamination trailers, (2) 4,000 gal tanks (potable, grey)*
Decontamination Facilities for Construction Equipment / Vehicles	1,000.0	sf	$28.56	$28,558	*20 's 50' lined asphalt construction equipment decontamination pad (includes site prep and decontamination equip)*
Lunch / Break Trailer (Craft Labor)	1.0	ea	$15,725.10	$15,725	*(1) dbl-wide crew break trailer (includes hook-ups, tables and chairs)*
Toilets	5.0	ea	$134.12	$671	*(5) portable toilets*
Government Trailers (USACE Office)	1.0	ea	$6,889.82	$6,890	*(1) single-wide trailer for USACE personnel (incl. hook-ups, furniture)*
Guard Houses	1.0	ea	$5,452.42	$5,452	*20' x 8' trailer at site entrance for security guard (incl. hook-ups, furniture)*
Truck Scales	1.0	ea	$49,890.02	$49,890	*60' x 10' 50 ton portable truck scale (incl. electric hookup)*
Wastewater Holding Tanks	1.0	ls	$172,305.77	$172,306	*Sand filtration and carbon absorption system for site water treatment*
Security Fencing	1,000.0	lf	$62.09	$62,088	*Install 1000lf of 8' chain link fencing around project site*
Signs	1.0	ls	$5,091.16	$5,091	*Project sign, safety sign, bulletin board, and (20) warning signs*
Erosion Control	5,000.0	lf	$5.55	$27,765	*Install 5,000lf of silt fencing and 1,000lf of hay bales for erosion control*
Interim Stockpile Pad	2,500.0	sf	$13.98	$34,953	*50' x 50' lined asphalt stockpile pad (includes site prep)*
Monitoring, Sampling, Testing, and Analysis					
Meteorological Monitoring	2.0	ea	$4,540.59	$9,081	*(2) meteorological stations with power*
Radiation Monitoring	1.0	ls	$2,798,683.88	$2,798,684	*Includes baseline radiological survey, radiological monitoring of building decontamination / dismantlement, impacted soils excavation, and incoming/outgoing materials*
Air Monitoring and Sampling	31.0	mo	$29,612.39	$917,984	*Perimeter (six locations and one off-site background) and work area (two locations) air monitoring at project site*
Sampling Surface Water / Groundwater / Liquid Waste	31.0	mo	$1,889.84	$58,585	*Sampling site surface water, excavation water, and site water treatment effluent*
Sampling Soil and Sediment	1.0	ls	$90,744.53	$90,745	*Post-excavation confirmatory soil sampling, off-site unclassified fill and topsoil sampling*
Sampling Radioactive Contaminated Media	1.0	ls	$570,897.99	$570,898	*Sampling impacted soils, building contents and building debris for waste acceptance criteria analysis*
Laboratory Chemical Analysis	1.0	ls	$372,294.31	$372,294	*Off-site quality assurance chemical analysis of one sample in ten for: site surface water, excavation water, site water treament effluent, impacted soils waste acceptance, and off-site unclassified fill and topsoil*
Radioactive Waste Analysis	1.0	ls	$1,248,141.51	$1,248,142	*Off-site radiological analysis of perimeter and work area air monitoring samples. Off-site quality assurance radiological analysis of one sample in ten for: site surface water, excavation water, site water treatment effluent, post-excavation confirmatory soil samples, impacted soils for waste acceptance, offsite unclassified fill and topsoil samples.*
Geotechnical Testing	1.0	ls	$108,503.57	$108,504	*Off-site classification testing of off-site unclassified fill, nuclear density testing of placed and compacted off-site unclassified fill (excavation backfill)*
On-Site Laboratory Facilities	31.0	mo	$232,659.86	$7,212,456	*Mobilization, rental, operation, and demobilization of temporary on-site ELAP certified radiological and chemical analysis laboratory*
Site Work					
Demolition	500.0	lf	$6.51	$3,254	*Demolition of 500 lf of chain-link fencing and two 14-ft wide gates*
Clearing and Grubbing	23.2	acre	$1,885.04	$43,733	*Clearing and grubbing 23.2 acres of brush, stumps and light trees*
Roads/Parking/Curbs/Walks	50,000.0	sf	$1.57	$78,625	*Construction of 2,500 LF of 20-ft wide x 1-ft thick aggregate haul road(s)*
Surface Water Collection and Control					
Sediment Barriers	31.0	mo	$7,065.72	$219,037	*Weekly inspection and repair of silt fencing and hay bales*
Solids Collection and Containment					
Contaminated Soil Collection	57,409.0	BCY	$152.51	$8,755,366	*Excavation, on-site hauling, stockpiling and loading for disposal*
Liquids / Sediments / Sludge Collection and Containment					
Waste water treatment plant (WWTP) startup and performance testing	1.0	ls	$33,319.15	$33,319	*Includes startup process and testing for site water treatment plant*
Treatment Plant Operation	31.0	mo	$30,763.20	$953,659	*Operation of site water treatment plant*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 2
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
Drums / Tanks / Structures / Miscellaneous Demolition and Removal					
Decontamination					
Decontamination - Building 1	12,480.0	sf	$2.05	$25,586	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 2	79,710.0	sf	$2.05	$163,356	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 3	61,140.0	sf	$2.05	$125,271	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 4/9	48,240.0	sf	$2.05	$98,862	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 5	4,500.0	sf	$2.04	$9,195	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 6	14,180.0	sf	$2.05	$29,043	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 8	28,300.0	sf	$2.05	$57,968	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 35	5,660.0	sf	$2.05	$11,594	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Dismantlement					
Dismantlement - Building 1	8,800.0	sf	$37.25	$327,840	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 2	68,900.0	sf	$33.56	$2,312,021	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 3	67,400.0	sf	$32.25	$2,173,521	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 4/9	47,400.0	sf	$34.91	$1,654,709	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 5	3,800.0	sf	$36.32	$138,030	*Removal of misc. equipment and mechanical structure dismantlement*
Dismantlement - Building 6	15,100.0	sf	$45.86	$692,413	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 8	27,900.0	sf	$46.72	$1,303,476	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 35	3,280.0	sf	$44.98	$147,522	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Disposal (Commercial)					
Container Handling	1.0	ls	$1,092,020.57	$1,092,021	*On-site handling of Containers for building debris, impacted soils, decon pad and interim stockpile pad material*
Transportation to Storage/Disposal Facility	279,805.0	ton	$139.93	$39,152,824	*Transportation of waste to approved disposal facilities. Transportation of building structural materials to approved recycling facilities.*
Disposal Fees and Taxes	279,805.0	ton	$62.45	$17,474,523	*Fees/taxes for disposal of waste at approved disposal facilities. Market value of recycled building structural materials.*
Site Restoration					
Earthwork	57,409.0	cy	$56.44	$3,240,213	*Includes purchase, delivery, spreading, and compaction of off-site unclassified fill. Includes purchase, delivery and spreading of off-site topsoil.*
Permanent Features	500.0	lf	$82.88	$41,442	*Replacing 500lf of chain-link fencing; includes (2) 14ft wide gates*
Revegetation and Planting	23.2	acre	$14,796.03	$343,268	*Seeding, fertilizing and mulching of 23.2 acres post construction*
Demobilization					
Removal of Temporary Facilities					
Office Trailers	5.0	ea	$2,197.57	$10,988	*Trailers: (1) dbl-wide contractor, (1) dbl-wide operations, (1) health physics trailer*
Storage Facilities	2.0	ea	$1,636.57	$3,273	*(2) 40' x 8' storage containers*
Decontamination Facilities for Personnel	2.0	ea	$13,418.23	$26,836	*(2) 24' x 8' decontamination trailers, (2) 4,000 gal tanks (potable, grey) - trailers and tanks will be decontaminated prior to removal from the site*
Decontamination Facilities for Construction Equipment / Vehicles	80.0	lcy	$77.31	$6,185	*Removal of 20 'x 50' lined asphalt construction equipment decontamination pad*
Lunch / Break Trailer (Craft Labor)	1.0	ea	$4,317.43	$4,317	*Removal of (1) dbl-wide crew break trailer*
Toilets	5.0	ea	$134.12	$671	*Removal of (5) portable toilets*
Government Trailers (USACE Office)	1.0	ea	$2,353.01	$2,353	*Removal of single-wide trailer for USACE personnel*
Guard Houses	1.0	ea	$2,140.31	$2,140	*Removal of 20' x 8' trailer at site entrance for security guard*
Truck Scales	1.0	ea	$7,672.74	$7,673	*Removal of 60' x 10' 50 ton portable truck scale - scale will be decontaminated prior to removal from site*
Wastewater Holding Tanks - Wastewater Treatment Plant (WWTP)	1.0	ls	$29,335.63	$29,336	*Removal of sand filtration and carbon absorption system for site water treatment*
Erosion Control	1.0	ls	$10,369.94	$10,370	*Removal of all erosion control measures*
Interim Stockpile Pad	120.0	lcy	$77.31	$9,277	*Excavation and removal of 50' x 50' lined asphalt stockpile pad*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 2
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
Final Decontamination					
Remove Media and Decontaminate WWTP Equipment	1.0	ls	$37,807.72	$37,808	*Remove, transport and dispose of site water treatment media. Tanks and equipment will be decontaminated prior to removal from site*
Decontaminate Construction Equipment	29.0	ea	$10,081.86	$292,374	*Decontamination of construction equipment prior to removal from the site*
Demobilize Construction Equipment					
Vehicle loads (small to large)	38.0	ea	$1,476.59	$56,110	*38 loads / pieces on flatbed transport*
Submittals					
Construction Documentation Report	1.0	ea	$80,178.27	$80,178	*Draft, ITR, agency review, response and final*
General Requirements					
Supervision and Management					
Program Manager	31.0	mo	$5,321.35	$164,962	*Program Manager dedicated 25% to project, located at home office*
Project Manager	31.0	mo	$9,454.70	$293,096	*Project Manager dedicated 50% to project, located at home office, visits project site every other month for two days each trip*
Site Superintendent	31.0	mo	$17,847.17	$553,262	*Site Superintendent dedicated 100% to project, located at project site, one weekend trip home each month*
Vehicles, Travel and Per Diem	31.0	mo	$13,278.88	$411,645	*Vehicles, travel, and per diem for Project Manager and Site Superintendent*
Administration Job Office					
Clerk/Typist/Receptionist	31.0	mo	$7,241.03	$224,472	*Clerk/Typist/Receptionist dedicated 100% to project, located at project site, local hire*
Computer Technician	31.0	mo	$4,830.44	$149,744	*Computer Technician dedicated 50% to project, located at project site, local hire*
Office Supplies	31.0	mo	$78.58	$2,436	*Ten reams of copier/printer paper per month*
Engineering, Surveying, and Quality Control					
Civil Engineer	31.0	mo	$17,594.47	$545,429	*Civil Engineer dedicated 100% to project, located at project site, local hire*
Surveyors	31.0	mo	$7,257.10	$224,970	*Survey crew consisting of Surveyor III and Surveyor I, working average of 25% on project, includes survey instruments and truck*
Waste Manager	31.0	mo	$17,083.65	$529,593	*Waste Manager dedicated 100% to project, located at project site, local hire*
Quality Control Manager	31.0	mo	$17,001.15	$527,036	*Quality Control Manager dedicated 100% to project, located at project site, one weekend trip home each month*
Data Acquisition Manager	31.0	mo	$25,356.15	$786,041	*Data Acquisition Manager dedicated 100% to project, located at project site, one weekend trip home each month*
Vehicles, Travel and Per Diem	31.0	mo	$19,523.71	$605,235	*Vehicles, travel, and per diem for Quality Control Manager and Data Acquisition Manager*
First Aid, Fire Protection, Traffic Control and Security					
Water Truck and Driver	31.0	mo	$25,156.96	$779,866	*3,000 gallon water truck and truck driver operated 40 hours/week*
Guard	31.0	mo	$5,138.69	$159,299	*Guard at entrance gate 40 hours/week, local hire*
Health & Safety					
Safety & Health Manager	31.0	mo	$8,153.67	$252,764	*Safety & Health Manager dedicated 50% to project, located at home office, visits project site every other month for two days each trip*
Radiation Safety Officer	31.0	mo	$28,714.63	$890,154	*Radiation Safety Officer dedicated 100% to project, located at project site, one weekend trip home each month*
Site Safety & Health Officer	31.0	mo	$19,546.90	$605,954	*Site Safety & Health Officer dedicated 100% to project, located at project site, one weekend trip home each month*
Health & Safety Training	3.0	yr	$56,712.44	$170,137	*Radiation safety and site-specific safety training for all site workers*
Health & Safety Medical Exams	1.0	ls	$135,536.79	$135,537	*Entry and exit medial physicals/drug screening for all site workers*
Personal Protective Equipmnt	1.0	ls	$2,772,472.97	$2,772,473	*Protective clothing, respirators, supplied air, etc.*
Vehicles, Travel and Per Diem	31.0	mo	$29,779.61	$923,168	*Vehicles, travel, and per diem for Safety & Health Manager, Radiation Safety Officer, and Site Safety & Health Officer*
Temporary Construction Facilities - Ownership					
Office Trailers	31.0	mo	$2,370.85	$73,496	*Monthly rental: (1) dbl-wide contractor trailer, (1) dbl-wide operations trailer, (1) health physics trailer*
Warehouse and Storage Trailers	31.0	mo	$292.63	$9,072	*Monthly rental: (2) 40' x 8' storage containers*
Guard House	31.0	mo	$261.47	$8,106	*Monthly rental: 20' x 8' trailer at site entrance for security guard*
Portable Toilets	31.0	mo	$134.12	$4,158	*Monthly rental: (5) portable toilets*
Personnel Decontamination Facilities	31.0	mo	$10,131.95	$314,090	*Monthly rental: (2) 24' x 8' decontamination trailers, (2) 4,000 gal tanks (potable,*
Break Trailers	31.0	mo	$948.34	$29,399	*Monthly rental: (1) dbl-wide crew break trailer*
Government Trailers	31.0	mo	$474.17	$14,699	*Monthly rental: (1) single-wide trailer for USACE personnel*
Temporary Construction Facilities - Operation					
Janitors and Cleaning Services	31.0	mo	$4,631.82	$143,586	*Weekly cleaning 11 trailers*
Haul Road Maintenance	31.0	mo	$1,066.16	$33,051	*Provide,spread and compact 25 LCY of gravel/month to maintain haul road*
Project Utilities					
Telephone	31.0	mo	$4,305.50	$133,470	*Monthly site telephone usage charge*
Electrical	31.0	mo	$1,403.91	$43,521	*Monthly site electrical usage charge*
Water	31.0	mo	$270.70	$8,392	*Monthly site water usage charge*
Internet	31.0	mo	$846.55	$26,243	*Monthly site internet usage charge*
Supervision & Administration (S&A) Construction Management					
USACE Labor & Contracts	49.0	mo	$125,000.00	$6,125,000	*$125,000 labor cost per month during remediation*
FISCAL / FINANCIAL CLOSEOUT ACTIVITIES					
USACE Labor & Contracts	2.0	yr	$500,000.00	$1,000,000	*$500,000 labor cost per year for two year closeout period at end of RA*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 2
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
Deferred Building 24 Remedial Action (Present Value) - Performed as a stand-alone project in Year 30 (discount 3.21%)					
Mobilization and Preparatory Work					
Mobilize Construction Equipment	38.0	ea	$571.74	$21,726	*38 loads / pieces on flatbed transport*
Submittals / Implementation Plans	1.0	ls	$150,508.78	$150,509	*Draft, ITR, agency review, response and final submittals of the following plans: Spill Control, Erosion and Sedimentation Control, Environmental Protection, Site safety and Health, Air Monitoring, General Site Work, Construction Quality Control, Material Handling/Transportation/Disposal, Sampling and Analysis, Demolition, Radiation Protection, Site Restoration*
Setup / Construct Temporary Facilities	1.0	ls	$184,250.20	$184,250	*Mobilization and setup of the following temporary facilities: office trailers, storage facilities, personnel decontamination facility, construction equipment/vehicle decontamination facility, break trailer, portable toilets, USACE office trailer, guard trailer, site water treatment system, security fencing, project signs, erosion control*
Monitoring, Sampling, Testing, and Analysis					
Meteorological Monitoring	1.0	ls	$3,516.28	$3,516	*(2) meteorological stations with power*
Radiation Monitoring	1.0	ls	$170,047.54	$170,048	*Includes baseline radiological survey, radiological monitoring of building decontamination / dismantlement, impacted soils excavation, and incoming/outgoing materials*
Air Monitoring and Sampling	13.0	mo	$12,152.54	$157,983	*Perimeter (six locations and one off-site background) and work area (three locations) air monitoring at project site*
Sampling Surface Water / Groundwater / Liquid Waste	13.0	mo	$730.57	$9,497	*Sampling site surface water, excavation water, and site water treatment effluent*
Sampling Soil and Sediment	1.0	ls	$2,107.77	$2,108	*Post-excavation confirmatory soil sampling, off-site unclassified fill and topsoil sampling*
Sampling Radioactive Contaminated Media	1.0	ls	$35,306.42	$35,306	*Sampling impacted soils, building contents and building debris for waste acceptance criteria analysis*
Laboratory Chemical Analysis	1.0	ls	$34,925.13	$34,925	*Off-site chemical analysis of samples for: site surface water, excavation water, site water treament effluent, impacted soils waste acceptance, and off-site unclassified fill and topsoil*
Radioactive Waste Analysis	1.0	ls	$105,637.71	$105,638	*Off-site radiological analysis of perimeter and work area air monitoring samples. Off-site radiological analysis of samples for: site surface water, excavation water, site water treatment effluent, post-excavation confirmatory soil samples, impacted soils for waste acceptance, offsite unclassified fill and topsoil samples.*
Geotechnical Testing	1.0	ls	$379.35	$379	*Off-site classification testing of off-site unclassified fill, nuclear density testing of placed and compacted off-site unclassified fill (excavation backfill)*
On-Site Laboratory Facilities	13.0	mo	$92,102.98	$1,197,339	*Mobilization, rental, operation, and demobilization of temporary on-site ELAP certified radiological and chemical analysis laboratory*
Site Work					
Demolition	500.0	lf	$2.52	$1,260	*Demolition of 500 lf of chain-link fencing and two 14-ft wide gates*
Roads/Parking/Curbs/Walks	50,000.0	sf	$0.61	$30,444	*Construction of 2,500 LF of 20-ft wide x 1-ft thick aggregate haul road(s)*
Surface Water Collection and Control					
Sediment Barriers	13.0	mo	$2,735.31	$35,559	*Weekly inspection and repair of silt fencing and hay bales*
Solids Collection and Containment					
Contaminated Soil Collection	591.0	bcy	$59.70	$35,284	*Includes excavation and loading for disposal*
Liquids / Sediments / Sludge Collection and Containment					
Waste water treatment plant (WWTP) startup and performance testing	1.0	ls	$12,901.37	$12,901	*Includes startup process and testing for site water treatment plant*
Treatment Plant Operation	13.0	mo	$11,911.71	$154,852	*Operation of site water treatment equipment*
Drums / Tanks / Structures / Miscellaneous Demolition and Removal					
Decontamination - Building 24	66,290.0	sf	$0.79	$52,608	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Dismantlement - Building 24	78,400.0	sf	$12.18	$954,994	*Mechanical structure dismantlement*
Disposal (Commercial)					
Container Handling	1.0	ls	$69,423.28	$69,423	*On-site handling of containers for building debris, impacted soils*
Transportation to Storage/Disposal Facility	44,687.0	ton	$43.57	$1,947,117	*Transportation of waste to approved disposal facilities. Transportation of building structural materials to approved recycling facilities.*
Disposal Fees and Taxes	44,687.0	ton	$14.13	$631,510	*Fees/taxes for disposal of waste at approved disposal facilities. Market value of recycled building structural materials.*
Site Restoration					
Earthwork	591.0	cy	$44.34	$26,206	*Includes purchase, delivery, spreading, and compaction of off-site unclassified fill. Includes purchase, delivery and spreading of off-site topsoil.*
Permanent Features	500.0	lf	$32.09	$16,047	*Replacing 500lf of chain-link fencing; includes (2) 14ft wide gates*
Revegetation and Planting	1.3	acre	$5,735.56	$7,628	*Seeding, fertilizing and mulching of 1.33 acres post construction*
Demobilization					
Removal of Temporary Facilities	1.0	ls	$43,916.69	$43,917	*Demobilization of the following temporary facilities: office trailers, storage facilities, personnel decontamination facility, construction equipment/vehicle decontamination facility, break trailer, portable toilets, USACE office trailer, guard trailer, site water treatment system, security fencing, project signs, erosion control*
Final Decontamination	1.0	ls	$127,848.29	$127,848	*Remove media and decontaminate WWTP equipment; Decontamination of construction equipment prior to removal from the site*
Demobilize Construction Equipment	38.0	ea	$571.74	$21,726	*38 loads / pieces on flatbed transport*
Submittals	1.0	ls	$31,175.02	$31,175	*Draft, ITR, agency review, response and final submittal of Construction Documentation Report*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 2
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
General Requirements					
Supervision and Management	13.0	mo	$17,775.98	$231,088	*Program Manager, Project Manager, Site Superintendent, Clerk/Typist/Receptionist, vehicles, travel and per diem - utilization same as for overall remedial action*
Adminstration Job Office	13.0	mo	$4,705.23	$61,168	*Clerk, Computer Technicia, and Office Supplies - utilization same as for overall remedial action*
Engineering, Surveying, and Quality Control	13.0	mo	$40,205.15	$522,667	*Civil Engineer, Surveyors, Waste Manager, Quality Control Manager, Data Acquisition Manager, vehicles, travel and per diem - utilization same as for overall remedial action*
First Aid, Fire Protection, Traffic Control and Security	13.0	mo	$11,733.18	$152,531	*Water truck with driver, security guard - utilization same as for overall remedial action*
Health & Safety	13.0	mo	$53,702.68	$698,135	*Safety & Health Manager, Radiation Safety Officer, Site Safety & Health Officer, Health & Safety Training, Health & Safety Medical Exams, Personal Protective Equipment, vehicles, travel and per diem - utilization same as for overall remedial action*
Temporary Construction Facilities - Ownership	13.0	mo	$5,658.45	$73,560	*Monthly rental of the following temporary facilities: office trailers, storage facilities, personnel decontamination facility, break trailer, portable toilets, USACE office trailer, guard trailer*
Temporary Construction Facilities - Operation	13.0	mo	$2,207.92	$28,703	*Janitor/cleaning service and haul road maintenance*
Project Utilities	13.0	mo	$2,643.32	$34,363	*Monthly site telephone, electrical, water, and internet useage charges*
Supervision & Administration (S&A) Construction Management					
USACE Labor & Contracts	31.0	mo	$48,400.75	$1,500,423	*$125,000 labor cost per month during remediation*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 2
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
SITE-WIDE ALTERNATIVE 2 OPERATION AND MAINTENANCE FSCE (FY20-2) (discount 3.21%)					
Mobilization and Preparatory Work					
Submittals/Implementation Plans					
Site Safety & Health Plan	1.0	ls	$21,644.33	$21,644	*Draft, ITR, agency review, response and final*
Performance and Compliance Monitoring	1.0	ls	$28,597.36	$28,597	*Draft, ITR, agency review, response and final*
Institutional Controls					
Land Use Control Implementation Plan	1.0	ls	$21,482.08	$21,482	*Draft, ITR, agency review, response and final*
Annual Site Inspection	1.0	ls	$140,462.82	$140,463	*Annual site inspections (120 years)to confirm that the land use controls remain in place*
Security Fencing	1.0	ls	$37,252.60	$37,253	*Replace 100lf of site security fencing every 5 years, years 5 - 120*
Warning Signs	1.0	ls	$7,478.33	$7,478	*Replace 10 warning signs every 5 years, years 5 - 120*
Monitoring, Sampling, Testing, and Analysis					
Radiation Monitoring	1.0	ls	$6,781.64	$6,782	*Radiation technician w/instrumentation monitoring well replacements every 5 years, year 5-115; monitoring well decommissioning at the end of year 120*
Monitoring Wells					
Replace 2 monitoring wells	1.0	ls	$84,683.14	$84,683	*Replace 2 monitoring wells every 5 years, years 5 - 115*
Decommission all monitoring wells	1.0	ls	$428.15	$428	*Decommission 16 shallow and 10 deep monitoring wells at end of year 120*
Sampling Surface Water / Groundwater	1.0	ls	$262,820.15	$262,820	*Sample five (5) seep locations annually for 120 years. Sample 16 shallow and 10 deep monitoring wells as follows: semi-annually for first 3 years, annually years 4 - 30, every 5 years years 35 - 120*
Laboratory Chemical Analysis	1.0	ls	$1,181,622.32	$1,181,622	*Analyze seep and monitoring well samples for volatile organic compounds*
Radioactive Waste Analysis	1.0	ls	$300,759.20	$300,759	*Analyze seep and monitoring well samples for total uranium and uranium isotopes*
Five-Year Reviews	1.0	ls	$482,112.51	$482,113	*Perform Five-Year Review every 5 years, years 5 - 120*
Disposal (Commercial)					
Drill Cuttings - Replacement Monitoring Wells	1.0	ls	$21,542.60	$21,543	*Transportation and disposal: Drill Cuttings - Monitoring Wells - Replace Two (2) Wells (Every 5 years; Years 5 - 115)*
Drill Cuttings - Decommission Monitoring Wells	1.0	ls	$346.52	$347	*Transportation and disposal: Drill Cuttings - Monitoring Wells - Decommission 16 shallow and 10 deep monitoring wells at end of year 120*
General Requirements					
Supervision and Management					
Project Manager	1.0	ls	$250,025.48	$250,025	*Project Manager 160 hours, year 1; 80 hours/year, years 2 - 30; 40 hours/year, years 31 - 120; 40 hours additional every 5 years, years 5 - 120*
Engineering, Surveying, and Quality Control					
Hydrogeologist	1.0	ls	$105,692.16	$105,692	*Hydrogeologist 80 hours, year 1; 40 hours/year, years 2 - 30; 25 hours/year, years 31 - 120; 40 hours additional every 5 years, years 5 - 120*
Health & Safety					
Site Safety & Health Officer	1.0	ls	$132,491.78	$132,492	*Site Safety & Health Officer 40 hours, year 1; 40 hours/year, years 2 - 30; 16 hours/year, years 31 - 120; 40 hours additional every 5 years, years 5 - 120*
Personnel Protective Equipment	1.0	ls	$11,519.35	$11,519	*Protective clothing, respirators, etc.*
SUPERVISION & ADMINISTRATION (S&A) CONSTRUCTION MANAGEMENT					
USACE Labor & Contracts (Year 1 - 120)	1.0	ls	$1,521,098.75	$1,521,099	*$50,000 labor cost per year during 120 year O&M period*

ATTACHMENT J-2

FEASIBILITY STUDY COMPARISON ESTIMATE

SITE-WIDE ALTERNATIVE 3 – DISMANTLEMENT AND OFF-SITE DISPOSAL OF BUILDINGS 1, 2, 3, 4/9, 5, 6, 8, 24, AND 35; COMPLETE SOIL REMOVAL TO THE SOIL PRG-GW AND OFF-SITE DISPOSAL; GROUNDWATER RECOVERY USING EXTRACTION WELLS AND A RUBBLIZED TRENCH WITH EX-SITU TREATMENT, WITH ENVIRONMENTAL MONITORING

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-wide Alternative 3
Feasibility Study Comparison Estimate Summary

SITE-WIDE ALTERNATIVE 3 REMEDIAL ACTION (FSCE FY20-2)

Feature of Work			Estimated Cost
Mobilization and Preparatory Work			$ 958,413
Monitoring, Sampling, Testing,and Analysis			$ 14,767,111
Site Work			$ 125,612
Surface Water Collection and Control			$ 247,352
Groundwater Collection and Control (Rubblized Trench, Extraction Wells)			$ 1,624,943
Solids Collection and Containment			$ 8,755,366
Liquids / Sediments / Sludges Collection and Containment			$ 1,110,029
Drums / Tanks / Structures / Miscellaneous Demolition and Removal			$ 9,270,406
Chemical Treatment (Groundwater Treatment System)			$ 911,978
Disposal (Commercial)			$ 57,719,368
Site Restoration			$ 3,624,924
Demobilization			$ 579,890
General Requirements			$ 13,934,111
		Subtotal	$ 113,629,504
Planning, Engineering, & Design / Procurement (Assume 1% of construction)			$ 1,136,295
Supervision & Administration / Construction Management			$ 6,625,000
Remedial Action Closeout			$ 1,000,000
Design & Construction		*Subtotal*	$ 122,390,799
Contingency	43.4%		$ 53,162,742
Design, Construction & Contingency		*Subtotal*	*$ 175,553,541*
Deferred Building 24 Remedial Action (Non-discounted)			$ 24,731,958
Contingency (Non-discounted)	43.4%		$ 10,742,791
Deferred Building 24 Remedial Action, Incl. Contingency (Non-discounted)			$ 35,474,749
Deferred Building 24 Remedial Action (Present Value: Year 30, i = 3.21%)			$ 9,576,363
Contingency (Present Value: Year 30, i = 3.21%)	43.4%		$ 4,159,673
Deferred Building 24 Remedial Action, Incl. Contingency (Present Value: Year 30, i = 3.21%)		*Subtotal*	*$ 13,736,036*
Site-wide Alternative 3 Remedial Action (Capital)		*Total*	*$ 189,289,577*

For Informational Purposes Only, Not a Component of Alternative 3:

Building 24 Remedial Action Concurrent With Site-wide Remedial Action			*$ 14,437,107*
Contingency	*43.4%*		*$ 6,271,029*
		Subtotal	*$ 20,708,135*
Real Estate Estimated Fair Market Value			*$ 907,000*
Real Estate Contingency	*10%*		*$ 90,700*
Building 24 Remedial Action Concurrent with Site-Wide Remedial Action (Non-discounted)		*Total*	*$ 21,705,835*

SITE-WIDE ALTERNATIVE 3 OPERATION AND MAINTENANCE (FSCE FY20-2) (Non-discounted)

Feature of Work			Estimated Cost
Mobilization and Preparatory Work ($/year, average)			$ 11,827
Monitoring, Sampling, Testing, and Analysis ($/year, average)			$ 67,462
Groundwater Collection and Control (Rubblized Trench, Extraction Wells)($/year, average)			$ 22,823
Drums / Tanks / Structures / Miscellaneous Demolition and Removal ($/year, average)			$ 2,039
Chemical Treatment (Groundwater Treatment System)($/year, average)			$ 326,362
Disposal (Other Than Commercial)($/year, average)			$ 208,752
Disposal (Commercial)($/year, average)			$ 19,600
Demobilization ($/year, average)			$ 2,040
General Requirements ($/year, average)			$ 38,636
			$ 699,542
Planning, Engineering, & Design / Procurement (Assume 1% of construction)($/year, average)			$ 6,995
Supervision & Administration / Construction Management ($/year, average)			$ 50,000
			$ 756,537
Contingency ($/year, average)	10.6%		$ 79,999
Annual Operation & Maintenance Cost ($/year, average)			$ 836,536
Operation & Maintenance Period (years)			30
Site-wide Alternative 3 Operation & Maintenance (Non-discounted)		*Total*	*$ 25,096,083*

SITE-WIDE ALTERNATIVE 3 OPERATION AND MAINTENANCE (FSCE FY20-2) (Discounted)

Feature of Work			Estimated Cost
Mobilization and Preparatory Work (Present Value: 30 Years, i = 3.21%)			$ 286,906
Monitoring, Sampling, Testing, and Analysis (Present Value: 30 Years, i = 3.21%)			$ 1,636,093
Groundwater Collection and Control (Rubblized Trench, Extraction Wells) (Present Value: 30 Years, i = 3.21%)			$ 433,438
Drums / Tanks / Structures / Miscellaneous Demolition and Removal (Present Value: 30 Years, i = 3.21%)			$ 23,683
Chemical Treatment (Groundwater Treatment System) (Present Value: 30 Years, i = 3.21%)			$ 6,224,069
Disposal (Other Than Commercial) (Present Value: 30 Years, i = 3.21%)			$ 3,981,120
Disposal (Commercial) (Present Value: 30 Years, i = 3.21%)			$ 272,927
Demobilization (Present Value: 30 Years, i = 3.21%)			$ 32,272
General Requirements (Present Value: 30 Years, i = 3.21%)			$ 728,030
			$ 13,618,538
Planning, Engineering, & Design / Procurement (Assume 1% of construction)			$ 136,185
Supervision & Administration / Construction Management (Present Value: 120 Years, i = 3.21%)			$ 953,553
			$ 14,708,276
Contingency	10.6%		$ 1,554,130
Site-wide Alternative 3 Operation & Maintenance (Discounted)		*Total*	*$ 16,262,406*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 3
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
SITE-WIDE ALTERNATIVE 3 REMEDIAL ACTION FSCE (FY20-2)					
Mobilization and Preparatory Work					
Mobilize Construction Equipment					
Vehicle loads (small to large)	38.0	ea	$1,476.59	$56,110	*38 loads / pieces on flatbed transport*
Submittals / Implementation Plans					
Spill Control Plan	1.0	ea	$13,871.16	$13,871	*Draft, ITR, agency review, response and final*
Erosion and Sedimentation Control Plan	1.0	ea	$21,826.11	$21,826	*Draft, ITR, agency review, response and final*
Environmental Protection Plan	1.0	ea	$21,826.11	$21,826	*Draft, ITR, agency review, response and final*
Site Safety and Health Plan (SSHP)	1.0	ea	$38,017.67	$38,018	*Draft, ITR, agency review, response and final*
Air Monitoring Plan	1.0	ea	$23,106.12	$23,106	*Draft, ITR, agency review, response and final*
General Site Work Plan	1.0	ea	$49,723.07	$49,723	*Draft, ITR, agency review, response and final*
Construction Quality Control Plan	1.0	ea	$32,486.51	$32,487	*Draft, ITR, agency review, response and final*
Material Handling / Transportation / Disposal Plan	1.0	ea	$26,400.46	$26,400	*Draft, ITR, agency review, response and final*
Sampling and Analysis Plan	1.0	ea	$64,440.38	$64,440	*Draft, ITR, agency review, response and final*
Demolition Plan	1.0	ea	$28,830.50	$28,831	*Draft, ITR, agency review, response and final*
Radiation Protection Plan	1.0	ea	$41,127.27	$41,127	*Draft, ITR, agency review, response and final*
Site Restoration Plan	1.0	ea	$27,049.34	$27,049	*Draft, ITR, agency review, response and final*
Groundwater Extraction System Design (P&S)	1.0	ea	$37,752.75	$37,753	*Draft, ITR, agency review, response and final*
Setup / Construct Temporary Facilities					
Office Trailers	5.0	ea	$8,074.53	$40,373	*Trailers: (1) dbl-wide contractor, (1) dbl-wide operations, (1) health physics trailer*
Storage Facilities	2.0	ea	$1,636.57	$3,273	*(2) 40' x 8' storage containers*
Decontamination Facilities for Personnel	2.0	ea	$11,405.68	$22,811	*(2) 24' x 8' decontamination trailers, (2) 4,000 gal tanks (potable, grey)*
Decontamination Facilities for Construction Equipment / Vehicles	1,000.0	sf	$28.56	$28,558	*20 'x 50' lined asphalt construction equipment decontamination pad (includes site prep and decontamination equip)*
Lunch / Break Trailer (Craft Labor)	1.0	ea	$15,725.10	$15,725	*(1) dbl-wide crew break trailer (includes hook-ups, tables and chairs)*
Toilets	5.0	ea	$134.12	$671	*(5) portable toilets*
Government Trailers (USACE Office)	1.0	ea	$6,889.82	$6,890	*(1) single-wide trailer for USACE personnel (incl. hook-ups, furniture)*
Guard Houses	1.0	ea	$5,452.42	$5,452	*20' x 8' trailer at site entrance for security guard (incl. hook-ups, furniture)*
Truck Scales	1.0	ea	$49,890.02	$49,890	*60' x 10' 50 ton portable truck scale (incl. electric hookup)*
Wastewater Holding Tanks	1.0	ls	$172,305.77	$172,306	*Sand filtration and carbon absorption system for site water treatment*
Security Fencing	1,000.0	lf	$62.09	$62,088	*Install 1000lf of 8' chain link fencing around project site*
Signs	1.0	ls	$5,091.16	$5,091	*Project sign, safety sign, bulletin board, and (20) warning signs*
Erosion Control	5,000.0	lf	$5.55	$27,765	*Install 5,000lf of silt fencing and 1,000lf of hay bales for erosion control*
Interim Stockpile Pad	2,500.0	sf	$13.98	$34,953	*50' x 50' lined asphalt stockpile pad (includes site prep)*
Monitoring, Sampling, Testing, and Analysis					
Meteorological Monitoring	2.0	ea	$4,540.59	$9,081	*(2) meteorological stations with power*
Radiation Monitoring	1.0	ls	$3,002,010.25	$3,002,010	*Includes baseline radiological survey, radiological monitoring of building decontamination / dismantlement, impacted soils excavation, incoming/outgoing materials, monitoring well / extraction well / sump installation*
Air Monitoring and Sampling	35.0	mo	$29,465.47	$1,031,292	*Perimeter (six locations and one off-site background) and work area (two locations) air monitoring at project site*
Monitoring Wells	14.0	ea	$5,746.35	$80,449	*Installation of 10 shallow and 4 deep monitoring wells to monitor performance of groundwater extraction system*
Sampling Surface Water / Groundwater / Liquid Waste	35.0	mo	$1,891.82	$66,214	*Sampling site surface water, excavation water, and site water treatment effluent*
Sampling Soil and Sediment	1.0	ls	$90,744.53	$90,745	*Post-excavation confirmatory soil sampling, off-site unclassified fill and topsoil sampling*
Sampling Radioactive Contaminated Media	1.0	ls	$570,897.99	$570,898	*Sampling impacted soils, building contents and building debris for waste acceptance criteria analysis*
Laboratory Chemical Analysis	1.0	ls	$391,190.26	$391,190	*Off-site quality assurance chemical analysis of one sample in ten for: site surface water, excavation water, site water treament effluent, impacted soils waste acceptance, and off-site unclassified fill and topsoil*
Radioactive Waste Analysis	1.0	ls	$1,287,363.33	$1,287,363	*Off-site radiological analysis of perimeter and work area air monitoring samples. Off-site quality assurance radiological analysis of one sample in ten for: site surface water, excavation water, site water treatment effluent, post-excavation confirmatory soil samples, impacted soils for waste acceptance, offsite unclassified fill and topsoil samples.*
Geotechnical Testing	1.0	ls	$108,503.57	$108,504	*Off-site classification testing of off-site unclassified fill, nuclear density testing of placed and compacted off-site unclassified fill (excavation backfill)*
On-Site Laboratory Facilities	35.0	mo	$232,230.18	$8,128,056	*Mobilization, rental, operation, and demobilization of temporary on-site ELAP certified radiological and chemical analysis laboratory*
Concrete Inspection and Testing	1.0	ea	$1,309.61	$1,310	*Inspection during concrete placement for Temporary Groundwater Treatment Facility Building; concrete cylinder compressive strength testing*
Site Work					
Demolition	500.0	lf	$6.51	$3,254	*Demolition of 500 lf of chain-link fencing and two 14-ft wide gates*
Clearing and Grubbing	23.2	acre	$1,885.04	$43,733	*Clearing and grubbing 23.2 acres of brush, stumps and light trees*
Roads/Parking/Curbs/Walks	50,000.0	sf	$1.57	$78,625	*Construction of 2,500 LF of 20-ft wide x 1-ft thick aggregate haul road(s)*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 3
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
Surface Water Collection and Control					
Sediment Barriers	35.0	mo	$7,067.20	$247,352	*Weekly inspection and repair of silt fencing and hay bales*
Groundwater Collection and Control					
Extraction Wells	10.0	ea	$41,826.38	$418,264	*Installation of 7 shallow and 3 deep extraction wells near the southern property border*
Subsurface Drainage / Collection	1.0	ea	$1,206,679.52	$1,206,680	*Installation of 600-ft long, 24-ft deep, 10-ft wide blast-fractured rubblized trench located near the southern property boundary*
Solids Collection and Containment					
Contaminated Soil Collection	57,409.0	BCY	$152.51	$8,755,366	*Excavation, on-site hauling, stockpiling and loading for disposal*
Liquids / Sediments / Sludge Collection and Containment					
Waste water treatment plant (WWTP) startup and performance testing	1.0	ls	$33,319.15	$33,319	*Includes startup process and testing for site water treatment plant*
Treatment Plant Operation	35.0	mo	$30,763.13	$1,076,710	*Operation of site water treatment plant*
Drums / Tanks / Structures / Miscellaneous Demolition and Removal					
Decontamination					
Decontamination - Building 1	12,480.0	sf	$2.05	$25,586	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 2	79,710.0	sf	$2.05	$163,356	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 3	61,140.0	sf	$2.05	$125,271	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 4/9	48,240.0	sf	$2.05	$98,862	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 5	4,500.0	sf	$2.04	$9,195	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 6	14,180.0	sf	$2.05	$29,043	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 8	28,300.0	sf	$2.05	$57,968	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 35	5,660.0	sf	$2.05	$11,594	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Dismantlement					
Dismantlement - Building 1	8,800.0	sf	$37.25	$327,840	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 2	68,900.0	sf	$33.56	$2,312,021	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 3	67,400.0	sf	$32.25	$2,173,521	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 4/9	47,400.0	sf	$34.91	$1,654,709	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 5	3,800.0	sf	$36.32	$138,030	*Removal of misc. equipment and mechanical structure dismantlement*
Dismantlement - Building 6	15,100.0	sf	$45.86	$692,413	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 8	27,900.0	sf	$46.72	$1,303,476	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 35	3,280.0	sf	$44.98	$147,522	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Chemical Treatment					
Construct Groundwater Treatment Facility	1.0	ea	$911,978.32	$911,978	*Construction of groundwater treatment system housed in a 4,000 SF pre-engineered steel building, slab on grade*
Disposal (Commercial)					
Container Handling	1.0	ls	$1,092,020.57	$1,092,021	*On-site handling of Containers for building debris, impacted soils, decon pad and interim stockpile pad material*
Transportation to Storage/Disposal Facility	279,805.0	ton	$139.93	$39,152,824	*Transportation of waste to approved disposal facilities. Transportation of building structural materials to approved recycling facilities.*
Disposal Fees and Taxes	279,805.0	ton	$62.45	$17,474,523	*Fees/taxes for disposal of waste at approved disposal facilities. Market value of recycled building structural materials.*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 3
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
Site Restoration					
Earthwork	57,409.0	cy	$56.44	$3,240,213	*Includes purchase, delivery, spreading, and compaction of off-site unclassified fill. Includes purchase, delivery and spreading of off-site topsoil.*
Permanent Features	500.0	lf	$82.88	$41,442	*Replacing 500lf of chain-link fencing; includes (2) 14ft wide gates*
Revegetation and Planting	23.2	acre	$14,796.03	$343,268	*Seeding, fertilizing and mulching of 23.2 acres post construction*
Demobilization					
Removal of Temporary Facilities					
Office Trailers	5.0	ea	$2,197.57	$10,988	*Trailers: (1) dbl-wide contractor, (1) dbl-wide operations, (1) health physics trailer*
Storage Facilities	2.0	ea	$1,636.57	$3,273	*(2) 40' x 8' storage containers*
Decontamination Facilities for Personnel	2.0	ea	$13,418.23	$26,836	*(2) 24' x 8' decontamination trailers, (2) 4,000 gal tanks (potable, grey) - trailers and tanks will be decontaminated prior to removal from the site*
Decontamination Facilities for Construction Equipment / Vehicles	80.0	lcy	$77.31	$6,185	*Removal of 20 'x 50' lined asphalt construction equipment decontamination pad*
Lunch / Break Trailer (Craft Labor)	1.0	ea	$4,317.43	$4,317	*Removal of (1) dbl-wide crew break trailer*
Toilets	5.0	ea	$134.12	$671	*Removal of (5) portable toilets*
Government Trailers (USACE Office)	1.0	ea	$2,353.01	$2,353	*Removal of single-wide trailer for USACE personnel*
Guard Houses	1.0	ea	$2,140.31	$2,140	*Removal of 20' x 8' trailer at site entrance for security guard*
Truck Scales	1.0	ea	$7,672.74	$7,673	*Removal of 60' x 10' 50 ton portable truck scale - scale will be decontaminated prior to removal from site*
Wastewater Holding Tanks - Wastewater Treatment Plant (WWTP)	1.0	ls	$29,335.63	$29,336	*Removal of sand filtration and carbon absorption system for site water treatment*
Erosion Control	1.0	ls	$10,369.94	$10,370	*Removal of all erosion control measures*
Interim Stockpile Pad	120.0	lcy	$77.31	$9,277	*Excavation and removal of 50' x 50' lined asphalt stockpile pad*
Final Decontamination					
Remove Media and Decontaminate WWTP Equipment	1.0	ls	$37,807.72	$37,808	*Remove, transport and dispose of site water treatment media. Tanks and equipment will be decontaminated prior to removal from site*
Decontaminate Construction Equipment	29.0	ea	$10,081.86	$292,374	*Decontamination of construction equipment prior to removal from the site*
Demobilize Construction Equipment					
Vehicle loads (small to large)	38.0	ea	$1,476.59	$56,110	*38 loads / pieces on flatbed transport*
Submittals					
Construction Documentation Report	1.0	ea	$80,178.27	$80,178	*Draft, ITR, agency review, response and final*
General Requirements					
Supervision and Management					
Program Manager	35.0	mo	$5,324.29	$186,350	*Program Manager dedicated 25% to project, located at home office*
Project Manager	35.0	mo	$9,453.29	$330,865	*Project Manager dedicated 50% to project, located at home office, visits project site every other month for two days each trip*
Site Superintendent	35.0	mo	$17,847.83	$624,674	*Site Superintendent dedicated 100% to project, located at project site, one weekend trip home each month*
Vehicles, Travel and Per Diem	35.0	mo	$13,278.88	$464,761	*Vehicles, travel, and per diem for Project Manager and Site Superintendent*
Administration Job Office					
Clerk/Typist/Receptionist	35.0	mo	$7,241.30	$253,446	*Clerk/Typist/Receptionist dedicated 100% to project, located at project site, local hire*
Computer Technician	35.0	mo	$4,829.72	$169,040	*Computer Technician dedicated 50% to project, located at project site, local hire*
Office Supplies	35.0	mo	$78.58	$2,750	*Ten reams of copier/printer paper per month*
Engineering, Surveying, and Quality Control					
Civil Engineer	35.0	mo	$17,595.13	$615,829	*Civil Engineer dedicated 100% to project, located at project site, local hire*
Surveyors	35.0	mo	$7,261.12	$254,139	*Survey crew consisting of Surveyor III and Surveyor I, working average of 25% on project, includes survey instruments and truck*
Waste Manager	35.0	mo	$17,084.28	$597,950	*Waste Manager dedicated 100% to project, located at project site, local hire*
Quality Control Manager	35.0	mo	$17,001.78	$595,062	*Quality Control Manager dedicated 100% to project, located at project site, one weekend trip home each month*
Data Acquisition Manager	35.0	mo	$25,357.09	$887,498	*Data Acquisition Manager dedicated 100% to project, located at project site, one weekend trip home each month*
Vehicles, Travel and Per Diem	35.0	mo	$19,524.39	$683,354	*Vehicles, travel, and per diem for Quality Control Manager and Data Acquisition Manager*
First Aid, Fire Protection, Traffic Control and Security					
Water Truck and Driver	35.0	mo	$25,157.90	$880,527	*3,000 gallon water truck and truck driver operated 40 hours/week*
Guard	35.0	mo	$5,138.88	$179,861	*Guard at entrance gate 40 hours/week, local hire*
Health & Safety					
Safety & Health Manager	35.0	mo	$8,152.46	$285,336	*Safety & Health Manager dedicated 50% to project, located at home office, visits project site every other month for two days each trip*
Radiation Safety Officer	35.0	mo	$28,715.70	$1,005,049	*Radiation Safety Officer dedicated 100% to project, located at project site, one weekend trip home each month*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 3
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
Site Safety & Health Officer	35.0	mo	$19,547.63	$684,167	*Site Safety & Health Officer dedicated 100% to project, located at project site, one weekend trip home each month*
Health & Safety Training	3.0	yr	$56,712.44	$170,137	*Radiation safety and site-specific safety training for all site workers*
Health & Safety Medical Exams	1.0	ls	$135,536.79	$135,537	*Entry and exit medial physicals/drug screening for all site workers*
Personal Protective Equipmnt	1.0	ls	$2,935,845.49	$2,935,845	*Protective clothing, respirators, supplied air, etc.*
Vehicles, Travel and Per Diem	35.0	mo	$29,779.91	$1,042,297	*Vehicles, travel, and per diem for Safety & Health Manager, Radiation Safety Officer, and Site Safety & Health Officer*
Temporary Construction Facilities - Ownership					
Office Trailers	35.0	mo	$2,370.85	$82,980	*Monthly rental: (1) dbl-wide contractor trailer, (1) dbl-wide operations trailer, (1) health physics trailer*
Warehouse and Storage Trailers	35.0	mo	$292.63	$10,242	*Monthly rental: (2) 40' x 8' storage containers*
Guard House	35.0	mo	$261.47	$9,152	*Monthly rental: 20' x 8' trailer at site entrance for security guard*
Portable Toilets	35.0	mo	$134.12	$4,694	*Monthly rental: (5) portable toilets*
Personnel Decontamination Facilities	35.0	mo	$10,131.95	$354,618	*Monthly rental: (2) 24' x 8' decontamination trailers, (2) 4,000 gal tanks (potable,*
Break Trailers	35.0	mo	$948.34	$33,192	*Monthly rental: (1) dbl-wide crew break trailer*
Government Trailers	35.0	mo	$474.17	$16,596	*Monthly rental: (1) single-wide trailer for USACE personnel*
Temporary Construction Facilities - Operation					
Janitors and Cleaning Services	35.0	mo	$4,631.82	$162,114	*Weekly cleaning 11 trailers*
Haul Road Maintenance	35.0	mo	$1,060.44	$37,115	*Provide,spread and compact 25 LCY of gravel/month to maintain haul road*
Project Utilities					
Telephone	35.0	mo	$4,305.50	$150,692	*Monthly site telephone usage charge*
Electrical	35.0	mo	$1,403.91	$49,137	*Monthly site electrical usage charge*
Water	35.0	mo	$270.70	$9,475	*Monthly site water usage charge*
Internet	35.0	mo	$846.55	$29,629	*Monthly site internet usage charge*
Supervision & Administration (S&A) Construction Management					
USACE Labor & Contracts	53.0	mo	$125,000.00	$6,625,000	*$125,000 labor cost per month during remediation*
FISCAL / FINANCIAL CLOSEOUT ACTIVITIES					
USACE Labor & Contracts	2.0	yr	$500,000.00	$1,000,000	*$500,000 labor cost per year for two year closeout period at end of RA*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 3
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
Deferred Building 24 Remedial Action (Present Value) - Performed as a stand-alone project in Year 30 (discount 3.21%)					
Mobilization and Preparatory Work					
Mobilize Construction Equipment	38.0	ea	$571.74	$21,726	*38 loads / pieces on flatbed transport*
Submittals / Implementation Plans	1.0	ls	$150,508.78	$150,509	*Draft, ITR, agency review, response and final submittals of the following plans: Spill Control, Erosion and Sedimentation Control, Environmental Protection, Site safety and Health, Air Monitoring, General Site Work, Construction Quality Control, Material Handling/Transportation/Disposal, Sampling and Analysis, Demolition, Radiation Protection, Site Restoration*
Setup / Construct Temporary Facilities	1.0	ls	$184,250.20	$184,250	*Mobilization and setup of the following temporary facilities: office trailers, storage facilities, personnel decontamination facility, construction equipment/vehicle decontamination facility, break trailer, portable toilets, USACE office trailer, guard trailer, site water treatment system, security fencing, project signs, erosion control*
Monitoring, Sampling, Testing, and Analysis					
Meteorological Monitoring	1.0	ls	$3,516.28	$3,516	*(2) meteorological stations with power*
Radiation Monitoring	1.0	ls	$170,047.54	$170,048	*Includes baseline radiological survey, radiological monitoring of building decontamination / dismantlement, impacted soils excavation, and incoming/outgoing materials*
Air Monitoring and Sampling	13.0	mo	$12,152.54	$157,983	*Perimeter (six locations and one off-site background) and work area (three locations) air monitoring at project site*
Sampling Surface Water / Groundwater / Liquid Waste	13.0	mo	$730.57	$9,497	*Sampling site surface water, excavation water, and site water treatment effluent*
Sampling Soil and Sediment	1.0	ls	$2,107.77	$2,108	*Post-excavation confirmatory soil sampling, off-site unclassified fill and topsoil sampling*
Sampling Radioactive Contaminated Media	1.0	ls	$35,306.42	$35,306	*Sampling impacted soils, building contents and building debris for waste acceptance criteria analysis*
Laboratory Chemical Analysis	1.0	ls	$34,925.13	$34,925	*Off-site chemical analysis of samples for: site surface water, excavation water, site water treament effluent, impacted soils waste acceptance, and off-site unclassified fill and topsoil*
Radioactive Waste Analysis	1.0	ls	$105,637.71	$105,638	*Off-site radiological analysis of perimeter and work area air monitoring samples. Off-site radiological analysis of samples for: site surface water, excavation water, site water treatment effluent, post-excavation confirmatory soil samples, impacted soils for waste acceptance, offsite unclassified fill and topsoil samples.*
Geotechnical Testing	1.0	ls	$379.35	$379	*Off-site classification testing of off-site unclassified fill, nuclear density testing of placed and compacted off-site unclassified fill (excavation backfill)*
On-Site Laboratory Facilities	13.0	mo	$92,102.98	$1,197,339	*Mobilization, rental, operation, and demobilization of temporary on-site ELAP certified radiological and chemical analysis laboratory*
Site Work					
Demolition	500.0	lf	$2.52	$1,260	*Demolition of 500 lf of chain-link fencing and two 14-ft wide gates*
Roads/Parking/Curbs/Walks	50,000.0	sf	$0.61	$30,444	*Construction of 2,500 LF of 20-ft wide x 1-ft thick aggregate haul road(s)*
Surface Water Collection and Control					
Sediment Barriers	13.0	mo	$2,735.31	$35,559	*Weekly inspection and repair of silt fencing and hay bales*
Solids Collection and Containment					
Contaminated Soil Collection	591.0	bcy	$59.70	$35,284	*Includes excavation and loading for disposal*
Liquids / Sediments / Sludge Collection and Containment					
Waste water treatment plant (WWTP) startup and performance testing	1.0	ls	$12,901.37	$12,901	*Includes startup process and testing for site water treatment plant*
Treatment Plant Operation	13.0	mo	$11,911.71	$154,852	*Operation of site water treatment equipment*
Drums / Tanks / Structures / Miscellaneous Demolition and Removal					
Decontamination - Building 24	66,290.0	sf	$0.79	$52,608	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Dismantlement - Building 24	78,400.0	sf	$12.18	$954,994	*Mechanical structure dismantlement*
Disposal (Commercial)					
Container Handling	1.0	ls	$69,423.28	$69,423	*On-site handling of containers for building debris, impacted soils*
Transportation to Storage/Disposal Facility	44,687.0	ton	$43.57	$1,947,117	*Transportation of waste to approved disposal facilities. Transportation of building structural materials to approved recycling facilities.*
Disposal Fees and Taxes	44,687.0	ton	$14.13	$631,510	*Fees/taxes for disposal of waste at approved disposal facilities. Market value of recycled building structural materials.*
Site Restoration					
Earthwork	591.0	cy	$44.34	$26,206	*Includes purchase, delivery, spreading, and compaction of off-site unclassified fill. Includes purchase, delivery and spreading of off-site topsoil.*
Permanent Features	500.0	lf	$32.09	$16,047	*Replacing 500lf of chain-link fencing; includes (2) 14ft wide gates*
Revegetation and Planting	1.3	acre	$5,735.56	$7,628	*Seeding, fertilizing and mulching of 1.33 acres post construction*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 3
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
Demobilization					
Removal of Temporary Facilities	1.0	ls	$43,916.69	$43,917	*Demobilization of the following temporary facilities: office trailers, storage facilities, personnel decontamination facility, construction equipment/vehicle decontamination facility, break trailer, portable toilets, USACE office trailer, guard trailer, site water treatment system, security fencing, project signs, erosion control*
Final Decontamination	1.0	ls	$127,848.29	$127,848	*Remove media and decontaminate WWTP equipment; Decontamination of construction equipment prior to removal from the site*
Demobilize Construction Equipment	38.0	ea	$571.74	$21,726	*38 loads / pieces on flatbed transport*
Submittals	1.0	ls	$31,175.02	$31,175	*Draft, ITR, agency review, response and final submittal of Construction Documentation Report*
General Requirements					
Supervision and Management	13.0	mo	$17,775.98	$231,088	*Program Manager, Project Manager, Site Superintendent, Clerk/Typist/Receptionist, vehicles, travel and per diem - utilization same as for overall remedial action*
Adminstration Job Office	13.0	mo	$4,705.23	$61,168	*Clerk, Computer Technicia, and Office Supplies - utilization same as for overall remedial action*
Engineering, Surveying, and Quality Control	13.0	mo	$40,205.15	$522,667	*Civil Engineer, Surveyors, Waste Manager, Quality Control Manager, Data Acquisition Manager, vehicles, travel and per diem - utilization same as for overall remedial action*
First Aid, Fire Protection, Traffic Control and Security	13.0	mo	$11,733.18	$152,531	*Water truck with driver, security guard - utilization same as for overall remedial action*
Health & Safety	13.0	mo	$53,702.68	$698,135	*Safety & Health Manager, Radiation Safety Officer, Site Safety & Health Officer, Health & Safety Training, Health & Safety Medical Exams, Personal Protective Equipment, vehicles, travel and per diem - utilization same as for overall remedial action*
Temporary Construction Facilities - Ownership	13.0	mo	$5,658.45	$73,560	*Monthly rental of the following temporary facilities: office trailers, storage facilities, personnel decontamination facility, break trailer, portable toilets, USACE office trailer, guard trailer*
Temporary Construction Facilities - Operation	13.0	mo	$2,207.92	$28,703	*Janitor/cleaning service and haul road maintenance*
Project Utilities	13.0	mo	$2,643.32	$34,363	*Monthly site telephone, electrical, water, and internet useage charges*
Supervision & Administration (S&A) Construction Management					
USACE Labor & Contracts	31.0	mo	$48,400.75	$1,500,423	*$125,000 labor cost per month during remediation*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 3
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
SITE-WIDE ALTERNATIVE 3 OPERATION AND MAINTENANCE FSCE (FY20-2) (Present Value, discount 3.21%)					
Mobilization and Preparatory Work					
Mobilize Construction Equipment					
Vehicle loads (small to large)	6.0	ea	$337.28	$2,024	*6 loads / pieces on flatbed transport*
Submittals/Implementation Plans					
Site Safety & Health Plan	1.0	ls	$21,644.33	$21,644	*Draft, ITR, agency review, response and final*
Performance and Compliance Monitoring Plan	1.0	ls	$28,597.36	$28,597	*Draft, ITR, agency review, response and final*
Institutional Controls					
Land Use Control Implementation Plan	1.0	ls	$21,482.08	$21,482	*Draft, ITR, agency review, response and final*
Annual Site Inspection	1.0	ls	$88,053.90	$88,054	*Annual site inspections (30 years) to confirm that the land use controls remain in place*
Security Fencing	1.0	ls	$20,907.40	$20,907	*Replace 100lf of site security fencing every 5 years, years 5 - 25*
Warning Signs	1.0	ls	$4,197.09	$4,197	*Replace 10 warning signs every 5 years, years 5 - 25*
Monitoring, Sampling, Testing, and Analysis					
Radiation Monitoring	1.0	ls	$64,241.07	$64,241	*Radiation technician w/instrumentation monitoring well replacements/decommissioning; groundwater extraction pump replacements; extraction well replacement; extraction wells/sumps decommissioning*
Monitoring Wells					
Replace 2 monitoring wells	1.0	ls	$58,178.72	$58,179	*Replace 2 monitoring wells every 5 years, years 5 - 25*
Decommission all monitoring wells	1.0	ls	$11,155.84	$11,156	*Decommission 26 shallow and 14 deep monitoring wells at end of year 30*
Sampling Surface Water / Groundwater	1.0	ls	$189,959.43	$189,959	*Sample five (5) seep locations annually for 130 years. Sample 26 shallow and 14 deep monitoring wells, 5 trench extraction sumps, and treatment system influent and effluent as follows: semi-annually for first 3 years, annually years 4 & 5, every 5 years years 10 - 30*
Laboratory Chemical Analysis	1.0	ls	$626,141.59	$626,142	*Analyze seep, monitoring well, trench extraction sump, and treatment system influent/effluent samples for volatile organic compounds*
Radioactive Waste Analysis	1.0	ls	$384,187.09	$384,187	*Analyze seep, monitoring well, trench extraction sumo, and treatment system influent/effluent samples for total uranium and uranium isotopes*
Five-Year Reviews	1.0	ls	$302,229.48	$302,229	*Perform Five-Year Review every 5 years, years 5 - 30*
Groundwater Collection and Control					
Extraction Wells	1.0	ls	$433,438.19	$433,438	*Replace all groundwater extraction pumps every 5 years, years 5 - 25; replace two (2) groundwater extraction wells every 5 years, years 5 - 25; decommission seven (7) shallow and three (3) extraction wells and five (5) extraction sumps at end of year 30*
Drums/Tanks/ Structures/Miscellaneous Demolition and Removal					
Structure Removal	1.0	ls	$23,683.37	$23,683	*Demolish Groundwater Treatment Facility at end of year 30.*
Chemical Treatment					
Groundwater Treatment Facility	1.0	ls	$6,224,068.97	$6,224,069	*Operation & maintenance of Groundwater Treatment Facility, years 1-30*
Disposal (Other than Commercial)					
Groundwater Treatment Facility Effluent	1.0	ls	$3,981,120.23	$3,981,120	*Groundwater Treatment Facility effluent discharged to the industrial sewer line/City of Lockport POTW, years 1-30*
Disposal (Commercial)					
Groundwater Treatment Facility Spent Ion Resin	1.0	ls	$89,273.02	$89,273	*Annual change-out of 25 CF of resin per each of five (5) 2-bed co-current demineralizers, years 1-30.*
Drill Cuttings - Monitoring Wells	1.0	ls	$14,876.15	$14,876	*Replace two (2) monitoring wells every 5 years, years 5-25; decommission 26 shallow and 14 deep monitoring wells at the end of year 30*
Drill Cuttings - Extraction Wells/Sumps	1.0	ls	$14,849.44	$14,849	*Replace two (2) extraction wells every 5 years, years 5-25; decommission seven (7) shallow and three (3) deep extraction wells, and five (5) extraction trench sumps at the end of year 30*
Groundwater Treatment Facility Building Contents and Building Structural Materials	1.0	ls	$153,928.13	$153,928	*Demolish Groundwater Treatment Facility at the end of year 30*
Demobilization					
Final Decontamination	1.0	ls	$21,806.35	$21,806	*Decontaminate drilling equipment every 5 years, years 5-25*
Demobilize Construction Equipment	1.0	ls	$2,023.66	$2,024	*6 loads / pieces on flatbed transport at end of year 30*
Submittals	1.0	ls	$8,442.20	$8,442	*Construction DocumentationReport at end of year 30*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG®

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 3
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
General Requirements					
Supervision and Management					
Project Manager	1.0	ls	$199,471.10	$199,471	*Project Manager 80 hours/year, years 1-30; 80 hours additional, every 5 years, years 5 - 25; 120 hours additional, year 30*
Engineering, Surveying, and Quality Control					
Hydrogeologist	1.0	ls	$228,387.11	$228,387	*Hydrogeologist 120 hours/year, years 1-30; 120 hours additional, every 5 years, years 5 - 25; 120 hours additional, year 30; PPE*
Health & Safety					
Site Safety & Health Officer	1.0	ls	$300,171.45	$300,171	*Site Safety & Health Officer 120 hours/year, years 1-30; 80 hours additional, every 5 years, years 5 - 25; 120 hours additional, year 30; PPE*
SUPERVISION & ADMINISTRATION (S&A) CONSTRUCTION MANAGEMENT					
USACE Labor & Contracts (Year 1 - 30)	1.0	ls	$953,552.50	$953,553	*$50,000 labor cost per year during 30 year O&M period*

ATTACHMENT J-3

FEASIBILITY STUDY COMPARISON ESTIMATE

SITE-WIDE ALTERNATIVE 4 – DECONTAMINATION OF BUILDING 1; DISMANTLEMENT AND OFF-SITE DISPOSAL OF BUILDINGS 2, 3, 4/9, 5, 6, 8, AND 24; COMPLETE SOIL REMOVAL TO THE SOIL PRG-CW AND OFF-SITE DISPOSAL; MONITORED NATURAL ATTENUATION WITH ENVIRONMENTAL MONITORING

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-wide Alternative 4
Feasibility Study Comparison Estimate Summary

SITE-WIDE ALTERNATIVE 4 REMEDIAL ACTION (FSCE FY20-2)

Feature of Work			Estimated Cost
Mobilization and Preparatory Work			$ 920,660
Monitoring, Sampling, Testing,and Analysis			$ 9,702,554
Site Work			$ 87,833
Surface Water Collection and Control			$ 176,629
Solids Collection and Containment			$ 762,069
Liquids / Sediments / Sludges Collection and Containment			$ 802,399
Drums / Tanks / Structures / Miscellaneous Demolition and Removal			$ 8,828,308
Disposal (Commercial)			$ 25,354,914
Site Restoration			$ 408,431
Demobilization			$ 579,890
General Requirements			$ 10,266,334
		Subtotal	$ 57,890,020
Planning, Engineering, & Design / Procurement (Assume 1% of construction)			$ 578,900
Supervision & Administration / Construction Management			$ 5,375,000
Remedial Action Closeout			$ 1,000,000
Design & Construction		*Subtotal*	$ 64,843,920
Contingency	40.7%		$ 26,366,189
Design, Construction & Contingency		*Subtotal*	$ 91,210,109
Deferred Building 24 Remedial Action (Non-discounted)			$ 24,242,261
Contingency (Non-discounted)	40.7%		$ 9,857,147
Deferred Building 24 Remedial Action, Incl. Contingency (Non-discounted)			$ 34,099,408
Deferred Building 24 Remedial Action (Present Value: Year 30, i = 3.21%)			$ 9,386,749
Contingency (Present Value: Year 30, i = 3.21%)	40.7%		$ 3,816,746
Deferred Building 24 Remedial Action, Incl. Contingency (Present Value: Year 30, i = 3.21%)		*Subtotal*	$ 13,203,495
Site-wide Alternative 4 Remedial Action (Capital)		*Total*	*$ 104,413,605*
For Informational Purposes Only, Not a Component of Alternative 4:			
Building 24 Remedial Action Concurrent With Site-wide Remedial Action			*$ 14,437,107*
Contingency	*40.7%*		*$ 5,870,273*
		Subtotal	*$ 20,307,380*
Real Estate Estimated Fair Market Value			*$ 907,000*
Real Estate Contingency	*10%*		*$ 90,700*
Building 24 Remedial Action Concurrent with Site-Wide Remedial Action (Non-discounted)		*Total*	*$ 21,305,080*

SITE-WIDE ALTERNATIVE 4 OPERATION & MAINTENANCE (FSCE FY20-2) (Non-discounted)

Feature of Work			Estimated Cost
Mobilization and Preparatory Work ($/year, average)			$ 6,431
Monitoring, Sampling, Testing,and Analysis ($/year, average)			$ 44,963
Disposal (Commercial)($/year, average)			$ 776
General Requirements ($/year, average)			$ 10,939
		Subtotal	$ 63,109
Planning, Engineering, & Design / Procurement (Assume 1% of construction)($/year, average)			$ 631
Supervision & Administration / Construction Management ($/year, average)			$ 50,000
		Subtotal	$ 113,740
Contingency ($/year, average)	8.8%		$ 9,969
Annual Operation & Maintenance Cost ($/year, average)			$ 123,709
Operation & Maintenance Period (years)			660
Site-wide Alternative 4 Operation & Maintenance (Non-discounted)		*Total*	*$ 81,647,713*

SITE-WIDE ALTERNATIVE 4 OPERATION & MAINTENANCE (FSCE FY20-2) (Discounted)

Feature of Work			Estimated Cost
Mobilization and Preparatory Work (Present Value: 660 Years, i = 3.21%)			$ 361,357
Monitoring, Sampling, Testing,and Analysis (Present Value: 660 Years, i = 3.21%)			$ 2,347,352
Disposal (Commercial) (Present Value: 660 Years, i = 3.21%)			$ 22,023
General Requirements (Present Value: 660 Years, i = 3.21%)			$ 507,119
		Subtotal	$ 3,237,850
Planning, Engineering, & Design / Procurement (Assume 1% of construction)			$ 32,379
Supervision & Administration / Construction Management (Present Value: 660 Years, i = 3.21%)			$ 1,556,078
		Subtotal	$ 4,826,306
Contingency	8.8%		$ 423,001
Site-wide Alternative 4 Operation & Maintenance (Discounted)		*Total*	*$ 5,249,307*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 4
Feasibility Study Comparison Estimate

SITE-WIDE ALTERNATIVE 4 REMEDIAL ACTION FSCE (FY20-2)

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
Mobilization and Preparatory Work					
Mobilize Construction Equipment					
Vehicle loads (small to large)	38.0	ea	$1,476.59	$56,110	*38 loads / pieces on flatbed transport*
Submittals / Implementation Plans					
Spill Control Plan	1.0	ea	$13,871.16	$13,871	*Draft, ITR, agency review, response and final*
Erosion and Sedimentation Control Plan	1.0	ea	$21,826.11	$21,826	*Draft, ITR, agency review, response and final*
Environmental Protection Plan	1.0	ea	$21,826.11	$21,826	*Draft, ITR, agency review, response and final*
Site Safety and Health Plan (SSHP)	1.0	ea	$38,017.67	$38,018	*Draft, ITR, agency review, response and final*
Air Monitoring Plan	1.0	ea	$23,106.12	$23,106	*Draft, ITR, agency review, response and final*
General Site Work Plan	1.0	ea	$49,723.07	$49,723	*Draft, ITR, agency review, response and final*
Construction Quality Control Plan	1.0	ea	$32,486.51	$32,487	*Draft, ITR, agency review, response and final*
Material Handling / Transportation / Disposal Plan	1.0	ea	$26,400.46	$26,400	*Draft, ITR, agency review, response and final*
Sampling and Analysis Plan	1.0	ea	$64,440.38	$64,440	*Draft, ITR, agency review, response and final*
Demolition Plan	1.0	ea	$28,830.50	$28,831	*Draft, ITR, agency review, response and final*
Radiation Protection Plan	1.0	ea	$41,127.27	$41,127	*Draft, ITR, agency review, response and final*
Site Restoration Plan	1.0	ea	$27,049.34	$27,049	*Draft, ITR, agency review, response and final*
Setup / Construct Temporary Facilities					
Office Trailers	5.0	ea	$8,074.53	$40,373	*Trailers: (1) dbl-wide contractor, (1) dbl-wide operations, (1) health physics trailer*
Storage Facilities	2.0	ea	$1,636.57	$3,273	*(2) 40' x 8' storage containers*
Decontamination Facilities for Personnel	2.0	ea	$11,405.68	$22,811	*(2) 24' x 8' decontamination trailers, (2) 4,000 gal tanks (potable, grey)*
Decontamination Facilities for Construction Equipment / Vehicles	1,000.0	sf	$28.56	$28,558	*20 'x 50' lined asphalt construction equipment decontamination pad (includes site prep and decontamination equip)*
Lunch / Break Trailer (Craft Labor)	1.0	ea	$15,725.10	$15,725	*(1) dbl-wide crew break trailer (includes hook-ups, tables and chairs)*
Toilets	5.0	ea	$134.12	$671	*(5) portable toilets*
Government Trailers (USACE Office)	1.0	ea	$6,889.82	$6,890	*(1) single-wide trailer for USACE personnel (incl. hook-ups, furniture)*
Guard Houses	1.0	ea	$5,452.42	$5,452	*20' x 8' trailer at site entrance for security guard (incl. hook-ups, furniture)*
Truck Scales	1.0	ea	$49,890.02	$49,890	*60' x 10' 50 ton portable truck scale (incl. electric hookup)*
Wastewater Holding Tanks	1.0	ls	$172,305.77	$172,306	*Sand filtration and carbon absorption system for site water treatment*
Security Fencing	1,000.0	lf	$62.09	$62,088	*Install 1000lf of 8' chain link fencing around project site*
Signs	1.0	ls	$5,091.16	$5,091	*Project sign, safety sign, bulletin board, and (20) warning signs*
Erosion Control	5,000.0	lf	$5.55	$27,765	*Install 5,000lf of silt fencing and 1,000lf of hay bales for erosion control*
Interim Stockpile Pad	2,500.0	sf	$13.98	$34,953	*50' x 50' lined asphalt stockpile pad (includes site prep)*
Monitoring, Sampling, Testing, and Analysis					
Meteorological Monitoring	2.0	ea	$4,540.59	$9,081	*(2) meteorological stations with power*
Radiation Monitoring	1.0	ls	$1,614,242.53	$1,614,243	*Includes baseline radiological survey, radiological monitoring of building decontamination / dismantlement, impacted soils excavation, and incoming/outgoing materials*
Air Monitoring and Sampling	25.0	mo	$29,918.29	$747,957	*Perimeter (six locations and one off-site background) and work area (two locations) air monitoring at project site*
Sampling Surface Water / Groundwater / Liquid Waste	25.0	mo	$1,889.30	$47,233	*Sampling site surface water, excavation water, and site water treatment effluent*
Sampling Soil and Sediment	1.0	ls	$33,558.09	$33,558	*Post-excavation confirmatory soil sampling, off-site unclassified fill and topsoil sampling*
Sampling Radioactive Contaminated Media	1.0	ls	$359,784.32	$359,784	*Sampling impacted soils, building contents and building debris for waste acceptance criteria analysis*
Laboratory Chemical Analysis	1.0	ls	$232,745.82	$232,746	*Off-site quality assurance chemical analysis of one sample in ten for: site surface water, excavation water, site water treament effluent, impacted soils waste acceptance, and off-site unclassified fill and topsoil*
Radioactive Waste Analysis	1.0	ls	$809,397.71	$809,398	*Off-site radiological analysis of perimeter and work area air monitoring samples. Off-site quality assurance radiological analysis of one sample in ten for: site surface water, excavation water, site water treatment effluent, post-excavation confirmatory soil samples, impacted soils for waste acceptance, offsite unclassified fill and topsoil samples.*
Geotechnical Testing	1.0	ls	$9,499.72	$9,500	*Off-site classification testing of off-site unclassified fill, nuclear density testing of placed and compacted off-site unclassified fill (excavation backfill)*
On-Site Laboratory Facilities	25.0	mo	$233,562.18	$5,839,055	*Mobilization, rental, operation, and demobilization of temporary on-site ELAP certified radiological and chemical analysis laboratory*
Site Work					
Demolition	500.0	lf	$6.51	$3,254	*Demolition of 500 lf of chain-link fencing and two 14-ft wide gates*
Clearing and Grubbing	3.2	acre	$1,849.02	$5,954	*Clearing and grubbing 3.2 acres of brush, stumps and light trees*
Roads/Parking/Curbs/Walks	50,000.0	sf	$1.57	$78,625	*Construction of 2,500 LF of 20-ft wide x 1-ft thick aggregate haul road(s)*
Surface Water Collection and Control					
Sediment Barriers	25.0	mo	$7,065.16	$176,629	*Weekly inspection and repair of silt fencing and hay bales*
Solids Collection and Containment					
Contaminated Soil Collection	4,990.0	BCY	$152.72	$762,069	*Excavation, on-site hauling, stockpiling and loading for disposal*
Liquids / Sediments / Sludge Collection and Containment					
Waste water treatment plant (WWTP) startup and performance testing	1.0	ls	$33,319.15	$33,319	*Includes startup process and testing for site water treatment plant*
Treatment Plant Operation	25.0	mo	$30,763.21	$769,080	*Operation of site water treatment plant*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 4
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
Drums / Tanks / Structures / Miscellaneous Demolition and Removal					
Decontamination					
Decontamination - Building 1	4,260.0	sf	$4.14	$17,657	*Reinforce ~700 SF of Bldg. 1 floor; 0Contaminant removal by grinding/scabbling (50% of radiologically impacted surface), metal blasting (50% of radiologically impacted surface), HEPA vacuuming (100% of radiologically impacted surface), and pressure washing (100% of radiologically impacted surface)*
Decontamination - Building 2	79,710.0	sf	$2.05	$163,356	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 3	61,140.0	sf	$2.05	$125,271	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 4/9	48,240.0	sf	$2.05	$98,862	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 5	4,500.0	sf	$2.04	$9,195	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 6	14,180.0	sf	$2.05	$29,043	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Decontamination - Building 8	28,300.0	sf	$2.05	$57,968	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Dismantlement					
Building 1	8,800.0	sf	$6.00	$52,786	*Removal of PACM, misc. equipment, and misc. debris*
Dismantlement - Building 2	68,900.0	sf	$33.56	$2,312,021	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 3	67,400.0	sf	$32.25	$2,173,521	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 4/9	47,400.0	sf	$34.91	$1,654,709	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 5	3,800.0	sf	$36.32	$138,030	*Removal of misc. equipment and mechanical structure dismantlement*
Dismantlement - Building 6	15,100.0	sf	$45.86	$692,413	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Dismantlement - Building 8	27,900.0	sf	$46.72	$1,303,476	*Removal of PACM, misc. equipment, misc. debris, and mechanical structure dismantlement*
Disposal (Commercial)					
Container Handling	1.0	ls	$603,725.14	$603,725	*On-site handling of Containers for building debris, impacted soils, decon pad and interim stockpile pad material*
Transportation to Storage/Disposal Facility	176,343.0	ton	$112.59	$19,854,428	*Transportation of waste to approved disposal facilities. Transportation of building structural materials to approved recycling facilities.*
Disposal Fees and Taxes	176,343.0	ton	$27.77	$4,896,761	*Fees/taxes for disposal of waste at approved disposal facilities. Market value of recycled building structural materials.*
Site Restoration					
Earthwork	4,990.0	cy	$64.06	$319,641	*Includes purchase, delivery, spreading, and compaction of off-site unclassified fill. Includes purchase, delivery and spreading of off-site topsoil.*
Permanent Features	500.0	lf	$82.88	$41,442	*Replacing 500lf of chain-link fencing; includes (2) 14ft wide gates*
Revegetation and Planting	3.2	acre	$14,796.03	$47,347	*Seeding, fertilizing and mulching of 3.2 acres post construction*
Demobilization					
Removal of Temporary Facilities					
Office Trailers	5.0	ea	$2,197.57	$10,988	*Trailers: (1) dbl-wide contractor, (1) dbl-wide operations, (1) health physics trailer*
Storage Facilities	2.0	ea	$1,636.57	$3,273	*(2) 40' x 8' storage containers*
Decontamination Facilities for Personnel	2.0	ea	$13,418.23	$26,836	*(2) 24' x 8' decontamination trailers, (2) 4,000 gal tanks (potable, grey) - trailers and tanks will be decontaminated prior to removal from the site*
Decontamination Facilities for Construction Equipment / Vehicles	80.0	lcy	$77.31	$6,185	*Removal of 20 'x 50' lined asphalt construction equipment decontamination pad*
Lunch / Break Trailer (Craft Labor)	1.0	ea	$4,317.43	$4,317	*Removal of (1) dbl-wide crew break trailer*
Toilets	5.0	ea	$134.12	$671	*Removal of (5) portable toilets*
Government Trailers (USACE Office)	1.0	ea	$2,353.01	$2,353	*Removal of single-wide trailer for USACE personnel*
Guard Houses	1.0	ea	$2,140.31	$2,140	*Removal of 20' x 8' trailer at site entrance for security guard*
Truck Scales	1.0	ea	$7,672.74	$7,673	*Removal of 60' x 10' 50 ton portable truck scale - scale will be decontaminated prior to removal from site*
Wastewater Holding Tanks - Wastewater Treatment Plant (WWTP)	1.0	ls	$29,335.63	$29,336	*Removal of sand filtration and carbon absorption system for site water treatment*
Erosion Control	1.0	ls	$10,369.94	$10,370	*Removal of all erosion control measures*
Interim Stockpile Pad	120.0	lcy	$77.31	$9,277	*Excavation and removal of 50' x 50' lined asphalt stockpile pad*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 4
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
Final Decontamination					
Remove Media and Decontaminate WWTP Equipment	1.0	ls	$37,807.72	$37,808	*Remove, transport and dispose of site water treatment media. Tanks and equipment will be decontaminated prior to removal from site*
Decontaminate Construction Equipment	29.0	ea	$10,081.86	$292,374	*Decontamination of construction equipment prior to removal from the site*
Demobilize Construction Equipment					
Vehicle loads (small to large)	38.0	ea	$1,476.59	$56,110	*38 loads / pieces on flatbed transport*
Submittals					
Construction Documentation Report	1.0	ea	$80,178.27	$80,178	*Draft, ITR, agency review, response and final*
General Requirements					
Supervision and Management					
Program Manager	25.0	mo	$5,320.08	$133,002	*Program Manager dedicated 25% to project, located at home office*
Project Manager	25.0	mo	$9,453.29	$236,332	*Project Manager dedicated 50% to project, located at home office, visits project site every other month for two days each trip*
Site Superintendent	25.0	mo	$17,847.83	$446,196	*Site Superintendent dedicated 100% to project, located at project site, one weekend trip home each month*
Vehicles, Travel and Per Diem	25.0	mo	$13,278.88	$331,972	*Vehicles, travel, and per diem for Project Manager and Site Superintendent*
Administration Job Office					
Clerk/Typist/Receptionist	25.0	mo	$7,241.30	$181,033	*Clerk/Typist/Receptionist dedicated 100% to project, located at project site, local hire*
Computer Technician	25.0	mo	$4,829.72	$120,743	*Computer Technician dedicated 50% to project, located at project site, local hire*
Office Supplies	25.0	mo	$78.58	$1,964	*Ten reams of copier/printer paper per month*
Engineering, Surveying, and Quality Control					
Civil Engineer	25.0	mo	$17,595.13	$439,878	*Civil Engineer dedicated 100% to project, located at project site, local hire*
Surveyors	25.0	mo	$7,255.37	$181,384	*Survey crew consisting of Surveyor III and Surveyor I, working average of 25% on project, includes survey instruments and truck*
Waste Manager	25.0	mo	$17,084.28	$427,107	*Waste Manager dedicated 100% to project, located at project site, local hire*
Quality Control Manager	25.0	mo	$17,001.78	$425,044	*Quality Control Manager dedicated 100% to project, located at project site, one weekend trip home each month*
Data Acquisition Manager	25.0	mo	$25,357.09	$633,927	*Data Acquisition Manager dedicated 100% to project, located at project site, one weekend trip home each month*
Vehicles, Travel and Per Diem	25.0	mo	$19,523.42	$488,085	*Vehicles, travel, and per diem for Quality Control Manager and Data Acquisition Manager*
First Aid, Fire Protection, Traffic Control and Security					
Water Truck and Driver	25.0	mo	$25,157.90	$628,948	*3,000 gallon water truck and truck driver operated 40 hours/week*
Guard	25.0	mo	$5,138.88	$128,472	*Guard at entrance gate 40 hours/week, local hire*
Health & Safety					
Safety & Health Manager	25.0	mo	$8,152.46	$203,811	*Safety & Health Manager dedicated 50% to project, located at home office, visits project site every other month for two days each trip*
Radiation Safety Officer	25.0	mo	$28,715.70	$717,893	*Radiation Safety Officer dedicated 100% to project, located at project site, one weekend trip home each month*
Site Safety & Health Officer	25.0	mo	$19,547.63	$488,691	*Site Safety & Health Officer dedicated 100% to project, located at project site, one weekend trip home each month*
Health & Safety Training	2.0	yr	$56,712.44	$113,425	*Radiation safety and site-specific safety training for all site workers*
Health & Safety Medical Exams	1.0	ls	$135,536.79	$135,537	*Entry and exit medial physicals/drug screening for all site workers*
Personal Protective Equipmnt	1.0	ls	$2,379,929.65	$2,379,930	*Protective clothing, respirators, supplied air, etc.*
Vehicles, Travel and Per Diem	25.0	mo	$29,779.48	$744,487	*Vehicles, travel, and per diem for Safety & Health Manager, Radiation Safety Officer, and Site Safety & Health Officer*
Temporary Construction Facilities - Ownership					
Office Trailers	25.0	mo	$2,370.85	$59,271	*Monthly rental: (1) dbl-wide contractor trailer, (1) dbl-wide operations trailer, (1) health physics trailer*
Warehouse and Storage Trailers	25.0	mo	$292.63	$7,316	*Monthly rental: (2) 40' x 8' storage containers*
Guard House	25.0	mo	$261.47	$6,537	*Monthly rental: 20' x 8' trailer at site entrance for security guard*
Portable Toilets	25.0	mo	$134.12	$3,353	*Monthly rental: (5) portable toilets*
Personnel Decontamination Facilities	25.0	mo	$10,131.95	$253,299	*Monthly rental: (2) 24' x 8' decontamination trailers, (2) 4,000 gal tanks (potable,*
Break Trailers	25.0	mo	$948.34	$23,709	*Monthly rental: (1) dbl-wide crew break trailer*
Government Trailers	25.0	mo	$474.17	$11,854	*Monthly rental: (1) single-wide trailer for USACE personnel*
Temporary Construction Facilities - Operation					
Janitors and Cleaning Services	25.0	mo	$4,631.82	$115,795	*Weekly cleaning 11 trailers*
Haul Road Maintenance	25.0	mo	$1,066.89	$26,672	*Provide,spread and compact 25 LCY of gravel/month to maintain haul road*
Project Utilities					
Telephone	25.0	mo	$4,305.50	$107,637	*Monthly site telephone usage charge*
Electrical	25.0	mo	$1,403.91	$35,098	*Monthly site electrical usage charge*
Water	25.0	mo	$270.70	$6,768	*Monthly site water usage charge*
Internet	25.0	mo	$846.55	$21,164	*Monthly site internet usage charge*
Supervision & Administration (S&A) Construction Management					
USACE Labor & Contracts	43.0	mo	$125,000.00	$5,375,000	*$125,000 labor cost per month during remediation*
FISCAL / FINANCIAL CLOSEOUT ACTIVITIES					
USACE Labor & Contracts	2.0	yr	$500,000.00	$1,000,000	*$500,000 labor cost per year for two year closeout period at end of RA*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 4
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
Deferred Building 24 Remedial Action (Present Value) - Performed as a stand-alone project in Year 30 (discount 3.21%)					
Mobilization and Preparatory Work					
Mobilize Construction Equipment	38.0	ea	$571.74	$21,726	*38 loads / pieces on flatbed transport*
Submittals / Implementation Plans	1.0	ls	$150,508.78	$150,509	*Draft, ITR, agency review, response and final submittals of the following plans: Spill Control, Erosion and Sedimentation Control, Environmental Protection, Site safety and Health, Air Monitoring, General Site Work, Construction Quality Control, Material Handling/Transportation/Disposal, Sampling and Analysis, Demolition, Radiation Protection, Site Restoration*
Setup / Construct Temporary Facilities	1.0	ls	$184,250.20	$184,250	*Mobilization and setup of the following temporary facilities: office trailers, storage facilities, personnel decontamination facility, construction equipment/vehicle decontamination facility, break trailer, portable toilets, USACE office trailer, guard trailer, site water treatment system, security fencing, project signs, erosion control*
Monitoring, Sampling, Testing, and Analysis					
Meteorological Monitoring	1.0	ls	$3,516.28	$3,516	*(2) meteorological stations with power*
Radiation Monitoring	1.0	ls	$165,577.65	$165,578	*Includes baseline radiological survey, radiological monitoring of building decontamination / dismantlement, impacted soils excavation, and incoming/outgoing materials*
Air Monitoring and Sampling	13.0	mo	$12,152.54	$157,983	*Perimeter (six locations and one off-site background) and work area (three locations) air monitoring at project site*
Sampling Surface Water / Groundwater / Liquid Waste	13.0	mo	$730.57	$9,497	*Sampling site surface water, excavation water, and site water treatment effluent*
Sampling Soil and Sediment	1.0	ls	$2,073.98	$2,074	*Post-excavation confirmatory soil sampling, off-site unclassified fill and topsoil sampling*
Sampling Radioactive Contaminated Media	1.0	ls	$34,518.97	$34,519	*Sampling impacted soils, building contents and building debris for waste acceptance criteria analysis*
Laboratory Chemical Analysis	1.0	ls	$34,714.99	$34,715	*Off-site chemical analysis of samples for: site surface water, excavation water, site water treament effluent, impacted soils waste acceptance, and off-site unclassified fill and topsoil*
Radioactive Waste Analysis	1.0	ls	$104,702.84	$104,703	*Off-site radiological analysis of perimeter and work area air monitoring samples. Off-site radiological analysis of samples for: site surface water, excavation water, site water treatment effluent, post-excavation confirmatory soil samples, impacted soils for waste acceptance, offsite unclassified fill and topsoil samples.*
Geotechnical Testing	1.0	ls	$132.12	$132	*Off-site classification testing of off-site unclassified fill, nuclear density testing of placed and compacted off-site unclassified fill (excavation backfill)*
On-Site Laboratory Facilities	13.0	mo	$92,102.98	$1,197,339	*Mobilization, rental, operation, and demobilization of temporary on-site ELAP certified radiological and chemical analysis laboratory*
Site Work					
Demolition	500.0	lf	$2.52	$1,260	*Demolition of 500 lf of chain-link fencing and two 14-ft wide gates*
Roads/Parking/Curbs/Walks	50,000.0	sf	$0.61	$30,444	*Construction of 2,500 LF of 20-ft wide x 1-ft thick aggregate haul road(s)*
Surface Water Collection and Control					
Sediment Barriers	13.0	mo	$2,735.31	$35,559	*Weekly inspection and repair of silt fencing and hay bales*
Solids Collection and Containment					
Contaminated Soil Collection	10.0	bcy	$58.81	$588	*Includes excavation and loading for disposal*
Liquids / Sediments / Sludge Collection and Containment					
Waste water treatment plant (WWTP) startup and performance testing	1.0	ls	$12,901.37	$12,901	*Includes startup process and testing for site water treatment plant*
Treatment Plant Operation	13.0	mo	$11,911.71	$154,852	*Operation of site water treatment equipment*
Drums / Tanks / Structures / Miscellaneous Demolition and Removal					
Decontamination - Building 24	66,290.0	sf	$0.79	$52,608	*Limited contaminant removal by grinding/scabbling (5% of total bldg area), metal blasting (5% of total bldg area) and HEPA vacuuming (25% of total bldg area)*
Dismantlement - Building 24	78,400.0	sf	$12.18	$954,994	*Mechanical structure dismantlement*
Disposal (Commercial)					
Container Handling	1.0	ls	$67,273.00	$67,273	*On-site handling of containers for building debris, impacted soils*
Transportation to Storage/Disposal Facility	43,668.0	ton	$42.78	$1,867,938	*Transportation of waste to approved disposal facilities. Transportation of building structural materials to approved recycling facilities.*
Disposal Fees and Taxes	43,668.0	ton	$13.22	$577,120	*Fees/taxes for disposal of waste at approved disposal facilities. Market value of recycled building structural materials.*
Site Restoration					
Earthwork	10.0	cy	$1,643.30	$16,433	*Includes purchase, delivery, spreading, and compaction of off-site unclassified fill. Includes purchase, delivery and spreading of off-site topsoil.*
Permanent Features	500.0	lf	$32.09	$16,047	*Replacing 500lf of chain-link fencing; includes (2) 14ft wide gates*
Revegetation and Planting	1.3	acre	$5,735.56	$7,628	*Seeding, fertilizing and mulching of 1.3 acres post construction*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 4
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
Demobilization					
Removal of Temporary Facilities	1.0	ls	$43,916.69	$43,917	*Demobilization of the following temporary facilities: office trailers, storage facilities, personnel decontamination facility, construction equipment/vehicle decontamination facility, break trailer, portable toilets, USACE office trailer, guard trailer, site water treatment system, security fencing, project signs, erosion control*
Final Decontamination	1.0	ls	$127,848.29	$127,848	*Remove media and decontaminate WWTP equipment; Decontamination of construction equipment prior to removal from the site*
Demobilize Construction Equipment	38.0	ea	$571.74	$21,726	*38 loads / pieces on flatbed transport*
Submittals	1.0	ls	$31,175.02	$31,175	*Draft, ITR, agency review, response and final submittal of Construction Documentation Report*
General Requirements					
Supervision and Management	13.0	mo	$17,775.98	$231,088	*Program Manager, Project Manager, Site Superintendent, Clerk/Typist/Receptionist, vehicles, travel and per diem - utilization same as for overall remedial action*
Adminstration Job Office	13.0	mo	$4,705.23	$61,168	*Clerk, Computer Technicia, and Office Supplies - utilization same as for overall remedial action*
Engineering, Surveying, and Quality Control	13.0	mo	$40,205.15	$522,667	*Civil Engineer, Surveyors, Waste Manager, Quality Control Manager, Data Acquisition Manager, vehicles, travel and per diem - utilization same as for overall remedial action*
First Aid, Fire Protection, Traffic Control and Security	13.0	mo	$11,733.18	$152,531	*Water truck with driver, security guard - utilization same as for overall remedial action*
Health & Safety	13.0	mo	$53,491.76	$695,393	*Safety & Health Manager, Radiation Safety Officer, Site Safety & Health Officer, Health & Safety Training, Health & Safety Medical Exams, Personal Protective Equipment, vehicles, travel and per diem - utilization same as for overall remedial action*
Temporary Construction Facilities - Ownership	13.0	mo	$5,658.45	$73,560	*Monthly rental of the following temporary facilities: office trailers, storage facilities, personnel decontamination facility, break trailer, portable toilets, USACE office trailer, guard trailer*
Temporary Construction Facilities - Operation	13.0	mo	$2,207.92	$28,703	*Janitor/cleaning service and haul road maintenance*
Project Utilities	13.0	mo	$2,643.32	$34,363	*Monthly site telephone, electrical, water, and internet useage charges*
Supervision & Administration (S&A) Construction Management					
USACE Labor & Contracts	31.0	mo	$48,400.75	$1,500,423	*$125,000 labor cost per month during remediation*

US Army Corps of Engineers
Buffalo District
BUILDING STRONG

GUTERL STEEL FUSRAP SITE
Site-Wide Alternative 4
Feasibility Study Comparison Estimate

Cost Estimate Item / Activity	Quantity	Unit of Measure	Unit cost	Total	Notes
SITE-WIDE ALTERNATIVE 4 OPERATION AND MAINTENANCE FSCE (FY20-2) (discount 3.21%)					
Mobilization and Preparatory Work					
Submittals/Implementation Plans					
Site Safety & Health Plan	1.0	ls	$21,644.33	$21,644	*Draft, ITR, agency review, response and final*
Performance and Compliance Monitoring	1.0	ls	$28,597.36	$28,597	*Draft, ITR, agency review, response and final*
Institutional Controls					
Land Use Control Implementation Plan	1.0	ls	$21,482.08	$21,482	*Draft, ITR, agency review, response and final*
Annual Site Inspection	1.0	ls	$143,692.87	$143,693	*Annual site inspections (660 years) to confirm that the land use controls remain in place*
Security Fencing	1.0	ls	$38,259.91	$38,260	*Replace 100lf of site security fencing every 5 years, years 5 - 655*
Warning Signs	1.0	ls	$7,680.55	$7,681	*Replace 10 warning signs every 5 years, years 5 - 655*
Monitoring, Sampling, Testing, and Analysis					
Radiation Monitoring	1.0	ls	$6,911.28	$6,911	*Radiation technician w/instrumentation monitoring well replacements every 5 years, year 5-655; monitoring well decommissioning at the end of year 660*
Monitoring Wells					
Replace 2 monitoring wells	1.0	ls	$86,972.97	$86,973	*Replace 2 monitoring wells every 5 years, years 5 - 655*
Decommission all monitoring wells	1.0	ls	$0.02	$0	*Decommission 16 shallow and 10 deep monitoring wells at end of year 660*
Sampling Surface Water / Groundwater	1.0	ls	$265,248.73	$265,249	*Sample five (5) seep locations annually for 660 years. Sample 16 shallow and 10 deep monitoring wells as follows: semi-annually for first 3 years, annually years 4 - 30, every 5 years years 35 - 660*
Laboratory Chemical Analysis	1.0	ls	$1,190,819.05	$1,190,819	*Analyze seep and monitoring well samples for volatile organic compounds*
Radioactive Waste Analysis	1.0	ls	$304,200.62	$304,201	*Analyze seep and monitoring well samples for total uranium and uranium isotopes*
Five-Year Reviews	1.0	ls	$493,198.88	$493,199	*Perform Five-Year Review every 5 years, years 5 - 660*
Disposal (Commercial)					
Drill Cuttings - Replacement Monitoring Wells	1.0	ls	$22,125.11	$22,125	*Transportation and disposal: Drill Cuttings - Monitoring Wells - Replace Two (2) Wells (Every 5 years; Years 5 - 655)*
Drill Cuttings - Decommission Monitoring Wells	1.0	ls	$0.02	$0	*Transportation and disposal: Drill Cuttings - Monitoring Wells - Decommission 16 shallow and 10 deep monitoring wells end of year 660*
General Requirements					
Supervision and Management					
Project Manager	1.0	ls	$253,653.66	$253,654	*Project Manager 160 hours, year 1; 80 hours/year, years 2 - 30; 40 hours/year, years 31 - 660; 40 hours additional every 5 years, years 5 - 660*
Engineering, Surveying, and Quality Control					
Hydrogeologist	1.0	ls	$107,477.62	$107,478	*Hydrogeologist 80 hours, year 1; 40 hours/year, years 2 - 30; 24 hours/year, years 31 - 660; 40 hours additional every 5 years, years 5 - 660*
Health & Safety					
Site Safety & Health Officer	1.0	ls	$134,347.72	$134,348	*Site Safety & Health Officer 40 hours, year 1; 40 hours/year, years 2 - 30; 16 hours/year, years 31 - 660; 40 hours additional every 5 years, years 5 - 660*
Personnel Protective Equipment	1.0	ls	$11,639.84	$11,640	*Protective clothing, respirators, etc.*
SUPERVISION & ADMINISTRATION (S&A) CONSTRUCTION MANAGEMENT					
USACE Labor & Contracts (Year 1 - 120)	1.0	ls	$1,556,077.60	$1,556,078	*$50,000 labor cost per year during 660 year O&M period*

APPENDIX K

ARAR Evaluation

Applicable or Relevant and Appropriate Requirements for the Guterl Site

[This page is intentionally left blank]

TABLE OF CONTENTS

ACRONYMS, ABBREVIATIONS AND UNITS OF MEASURE 3
1.0 INTRODUCTION AND BACKGROUND 4
1.1 Historical Use of the Guterl Site 5
1.2 Extent of FUSRAP Contamination in Soils, Buildings, and Groundwater 6
1.3 Remedial Action Objectives 6
1.4 Preliminary Remediation Goals 7
1.5 Remedial Alternatives for the Guterl Site 7
1.6 Appendix Organization and Content 9
2.0 PROCESS FOR IDENTIFYING APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS 9
3.0 EVALUATION OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS 11
3.1 10 CFR 20, Subpart E– Radiological Criteria for License Termination 12
3.1.1 10 CFR 20, Subpart E, Section 1402: Radiological Criteria for Unrestricted Use 13
3.1.1.1 Published Regulation 13
3.1.1.2 Evaluation and Conclusion 13
3.1.2 10 CFR 20, Subpart E, Section 1403: Radiological Criteria for Restricted Use 13
3.1.2.1 Published Regulation 13
3.1.2.2 Evaluation and Conclusion 14
3.2 40 CFR 141, Subpart G, Section 66 (40 CFR 141.66(e)): National Primary Drinking Water Standards; MCLs for Radionuclides; MCL for Uranium 14
3.2.1.1 Published Regulation 14
3.2.1.2 Evaluation and Conclusion 14
4.0 REGULATIONS EVALUATED BUT DETERMINED NOT TO BE APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS 16
4.1 10 CFR 40: Domestic Licensing of Source Material 17
4.2 40 CFR 192, Subparts A and B: Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings 17
4.3 40 CFR 61: National Emission Standards for Hazardous Air Pollutants 18
4.4 40 CFR 191: Subparts A, B, and C: Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level, and Transuranic Wastes 20
4.5 10 CFR 61: Licensing Requirements for Land Disposal of Radioactive Waste 20
4.6 6 NYCRR 360: Solid Waste Management Facility Regulations 20
4.7 6 NYCRR Part 370: Hazardous Waste Management System: General 21
4.8 6 NYCRR Part 371: Identification and Listing of Hazardous Wastes 21
4.9 6 NYCRR Part 372: Hazardous Waste Manifest System and Related Standards for Generators, Transporters, and Facilities 21
4.10 6 NYCRR Subpart 373-1: Hazardous Waste Treatment, Storage, and Disposal Facility Permitting Requirements 22
4.11 6 NYCRR Subpart 373-2: Final Status Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities 22

4.12 6 NYCRR Subpart 373-3: Interim Status Standards for Owners and Operators of Hazardous Waste Facilities 22
4.13 6 NYCRR Part 375: Inactive Hazardous Waste Disposal Site Remedial Program....23
4.14 6 NYCRR Part 376: Land Disposal Restrictions....23
4.15 6 NYCRR 380: Prevention and Control of Environmental Pollution by Radioactive Materials 23
5.0 REFERENCES 25

TABLE

Table 1 Relevant and Appropriate Analysis for the Guterl Specialty Steel Site, Lockport, New York

ACRONYMS, ABBREVIATIONS AND UNITS OF MEASURE

µg/L	micrograms per liter
AEC	Atomic Energy Commission
ALARA	as low as reasonably achievable
ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	constituent of concern
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
FS	feasibility study
FUSRAP	Formerly Utilized Sites Remedial Action Program
LUCs	land use controls
MCL	maximum contaminant level
MNA	monitored natural attenuation
mrem/yr	millirem per year
NCP	National Contingency Plan
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NRC	Nuclear Regulatory Commission
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
pCi/g	picocuries per gram
$pCi/m^2/sec$	picocuries per square meter per second
PRG	Preliminary Remediation Goal
PRG-CW	Preliminary Remediation Goal- Construction Worker basis
PRG-GW	Preliminary Remediation Goal- Groundwater Protection basis
RAO	remedial action objective
RI	remedial investigation
TBC	to be considered
TEDE	total effective dose equivalent
UMTRCA	Uranium Mill Tailings Radiation Control Act
USACE	United States Army Corps of Engineers

1.0 INTRODUCTION AND BACKGROUND

In 1997, Congress designated the United States Army Corps of Engineers (USACE) as the lead federal agency for implementing the Formerly Utilized Sites Remedial Action Program (FUSRAP) according to protocols set forth in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, applying the standard criteria set forth in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The U.S. Department of Energy (DOE) designated the former Guterl Specialty Steel Corporation Site for inclusion in FUSRAP; and the USACE-Buffalo District is the lead district for the Guterl Site, responsible for conducting a remedial investigation/feasibility study (RI/FS) at the site pursuant to CERCLA and the NCP.

The Guterl FUSRAP Site is located in the City of Lockport, Niagara County, New York, approximately 32 kilometers (km) [20 miles (mi)] northeast of Buffalo, New York. The Guterl Site is grouped into two areas:

- The 24.5 hectare (ha) [60.6 acre (ac)] property currently owned and operated by ATI Specialty Materials (formerly Allegheny Ludlum Corporation) and a 3.5 ha (8.6 ac) inactive hazardous waste disposal area owned by ATI Specialty Materials, located in the northwest corner of the site
- The 3.6 ha (9 ac) excised property (known as the Excised Area), owned by Guterl Specialty Steel and located in the southeast corner of the site.

From 1948 to 1952, the Guterl Site was used by Simonds Saw and Steel (Simonds) to process uranium metal and, to a much smaller extent, thorium metal for the New York Operations Office of the Atomic Energy Commission. Guterl Specialty Steel Corporation acquired the property in 1978. In 1982, the Guterl Specialty Steel Corporation filed for Chapter 11 bankruptcy protection in the U.S. Bankruptcy Court for the Western District of Pennsylvania (this was changed to a Chapter 7 bankruptcy in 1990). In 1984, using industrial development bonds received through the Niagara County Industrial Development Agency, the Allegheny Ludlum Corporation purchased the Guterl Specialty Steel Corporation assets at an auction (U.S. Bankruptcy Court, 1984). The purchase included all of the Guterl Specialty Steel Corporation property, with the exception of nine acres of land, later known as the Excised Area, and equipment utilized during Atomic Energy Commission-related operations at the Guterl Site. As a result, the Excised Area and equipment therein remains under ownership of Guterl Specialty Steel Corporation (a Chapter 7 bankrupt corporation). In 1996, the Allegheny Ludlum Corporation merged with Teledyne Incorporated to form Allegheny Technologies Incorporated (ATI). The Guterl Site, with the exception of the Excised Area, is currently owned and operated by ATI under the name ATI Specialty Materials.

ATI Specialty Materials operates an active specialty materials manufacturing facility in the southwest portion of the 24.5 hectare (ha) [60.6 acre (ac)] ATI property. The 3.5 ha (8.6 ac) inactive hazardous waste disposal area is no longer operated as a waste disposal area (since 1981). The 3.6 ha (9 ac) Excised Area, which contains the buildings once used to roll uranium metal, is abandoned with chain link security fence surrounding the dormant buildings.

There are 14 buildings located on the Guterl Site: 9 abandoned buildings in the Excised Area (Buildings 1, 2, 3, 4/9, 5, 6, 8 and 35) and 5 buildings owned by ATI Specialty Materials (Buildings 14, 17, 24, 37, and 47). Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) activities at the Guterl Site have transitioned from the site remedial investigation (RI) activities to the feasibility study (FS) evaluation of potential remediation alternatives to address FUSRAP-related constituents of concern (COCs) in soil, groundwater, and on building surfaces.

The purpose of this appendix is to identify potential Applicable or Relevant and Appropriate Requirements (ARARs) for the Guterl Site.

Section 121 (d) "*Degree of cleanup*" of CERCLA directs that any remedial action selected shall attain a degree of cleanup of hazardous substances, pollutants, and contaminants released into the environment, or control of further release, that at a minimum assures the protection of human health and the environment. Such remedial actions shall also be relevant and appropriate under the circumstances *presented by the release* or threatened release of such substance, pollutant, or contaminant. With respect to any hazardous substance, pollutant or contaminant *that will remain on-site* the remedy selected shall attain a standard, requirement, criteria or limitation under any federal environmental law *or* any promulgated standard, requirement, criteria, or limitation under a state environmental or facility siting law that is more stringent than the federal standard, and has been identified by the state in a timely manner, which is legally applicable to the hazardous substance or pollutant or contaminant concerned *or* is relevant and appropriate under the *circumstances of the release* or threatened release of such hazardous substance, pollutant, or contaminant. The statute puts the emphasis on the degree of cleanup, or in other words, how clean is clean enough if a hazardous substance, pollutant, or contaminant remains at the site.

The United States Environmental Protection Agency (U.S. EPA) articulated its interpretation of this section of CERCLA in the NCP and defined these standards as ARARs at 40 Code of Federal Regulations (CFR) 300.5. Applicable requirements means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable. Relevant and appropriate requirements means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not *applicable* to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards that are identified in a timely manner and are more stringent than federal requirements may be relevant and appropriate.

1.1 Historical Use of the Guterl Site

Records indicate that Simonds processed between 25 million and 35 million pounds of natural uranium metal (i.e., processed uranium metal without enrichment supplied as metal ingots) and approximately 30,000 to 40,000 pounds of thorium between 1948 and 1956 (ORISE, 1999).

Previous investigations have established that more than 99 percent of all material processed by Simonds was natural uranium; i.e., uranium that has not been enriched or depleted and with uranium isotopic ratios consistent with naturally occurring abundances (NIOSH, 2005). However, there is evidence to support that during the latter portions of the contract work small quantities of depleted and enriched uranium (up to 2.5 percent) were processed at the Guterl Site. Of the thorium that was processed, ^{228}Th and ^{232}Th were present in equal fractions.

Atomic Energy Commission (AEC)-related operations at the Guterl Site were mostly limited to buildings located within the Excised Area (Buildings 1, 2, 3, 4/9, 5, 6, 8 and 35). The majority of AEC support operations involved the processing of uranium metal through the 16-inch mills in Buildings 6 and 8; thorium was also processed, to a lesser extent, during the latter part of the contract period. On average, the AEC materials were processed one week per month over the period of 1948 through 1956.

AEC support operations outside of the Excised Area included building 17 and the southwest portion of building 24. Building 17 was used as a former metallurgy laboratory and is currently owned by ATI Specialty Materials. The southwest portion of building 24 was constructed in 1941 and was used for AEC support operations. A small (13.72 meter x 15.24 meter [45 feet × 50 feet]) addition was built in 1951 onto the north end of the original 1941 structure. The addition of what is currently the southeast portion of the building was completed in 1959; this addition "squared off" the 1941-1951 footprint, extending building 24 from building 8 to the north end of the 1951 addition. A final northern addition was completed in 1966 that matched the full width of the then-existing building. Building 24 is an active warehouse facility for ATI Specialty Materials.

1.2 Extent of FUSRAP Contamination in Soils, Buildings, and Groundwater

The constituents of concern (COCs) for which soil cleanup goals will be developed in the FS are ^{232}Th (and associated short-lived daughter products ^{228}Ra and ^{228}Th, which are assumed to be in equilibrium with ^{232}Th), total uranium (including ^{234}U, ^{235}U, and ^{238}U), and ^{238}U as a surrogate for the total uranium derived concentration levels. The COCs for building materials are the same as those listed above for soil. The COC for groundwater is total uranium (including ^{234}U, ^{235}U, and ^{238}U).

1.3 Remedial Action Objectives

A remedial action objective (RAO) is a specific goal that remedial alternatives must fulfill to be protective of human health and the environment. Remedial action objectives provide the basis for selecting remedial technologies and developing and evaluating remedial alternatives.

The RAOs for the Guterl Site are:

- Prevent exposure to uranium and ^{232}Th in soil and buildings; and uranium in groundwater; such that a construction worker does not receive a total effective dose exceeding 25 millirem/year (mrem/yr) above background from all pathways.
- Comply with the Maximum Contaminant Level (MCL) of 30 micrograms per liter (µg/L) in groundwater that is a potential source of drinking water.

1.4 Preliminary Remediation Goals

Preliminary remediation goals (PRGs) for soil were developed based on two endpoints:

(1) Protection of direct soil exposures to the critical group (a construction worker) for the reasonable future land use (industrial).
(2) Protection of groundwater (i.e., removal of enough of the uranium soil source term to allow attenuation of uranium groundwater concentrations to the U.S. EPA MCL for protection of drinking water).

The two sets of soil PRGs, and soil background concentrations for each COC, are provided in Table 3-1, and discussed in detail in the following two sections.

The construction worker PRG, designated as soil PRG-CW, was developed to meet the 25 mrem/year dose limit (as per 10 CFR 20 Section 20.1402), considering all exposure pathways. The soil PRG-CW is defined as 23 pCi/g for ^{238}U and 6.6 pCi/g for ^{232}Th. The isotope ^{238}U will be used as a surrogate for the total uranium soil PRG-CW because it can be directly measured in the field during remediation efforts.

The modeling calculation of the groundwater protection PRG for soil, designated as soil PRG-GW, indicate a soil PRG-GW of 11 milligrams per kilogram (mg/kg) total uranium (equivalent to 3.66 pCi/g ^{238}U) is predicted to be protective of groundwater. Based on the results of the groundwater flow model, uranium will attenuate to meet the MCL (30 µg/L) throughout the majority of the site within 120 years, respectively.

1.5 Remedial Alternatives for the Guterl Site

The USACE identified four site-wide remedial action alternatives for detailed analysis to address FUSRAP-related COCs in soil, groundwater, and on building surfaces at the Guterl Site.

Site-Wide Alternative 1—No Action.

Under this alternative, no action would be taken for buildings, soil, or groundwater/seeps impacted at the site. Since no actions are taken under this alternative to address risk, it is not considered protective of human health and the environment. However, the no-action alternative is carried over as a baseline for comparison to the other alternatives, as required by the NCP [40 CFR §300.430(e)(6)]. The groundwater model developed for this FS predicts it will take more than 1,000 years to reach the MCL.

Site-Wide Alternative 2—Dismantlement and Off-Site Disposal of Buildings 1, 2, 3, 4/9, 5, 6, 8, 24 and 35; Complete Soil Removal to Soil PRG-Groundwater and Off-Site Disposal; Monitored Natural Attenuation with Environmental Monitoring and Land Use Controls (LUCs).

Under this alternative Buildings 1, 2, 3, 4/9, 5, 6, 8, 24 and 35 would be dismantled. The dismantlement of building 24 and the remediation of underlying soils will be conducted at the time of the site-wide remedial action with property owner permission to dismantle the building. If building 24 is not available or authorized for dismantlement at the time of the site-wide remedial action, the inaccessible contamination and building 24 will remain until it becomes

available under a change of site conditions. Soils impacted above the Soil PRG-GW (11 milligrams per kilogram [mg/kg] total uranium [equivalent to 3.66 pCi/g ^{238}U] and 6.6 pCi/g for ^{232}Th), a soil cleanup level developed to protect continued impacts to groundwater above the MCL for uranium, would be removed. Building materials and impacted soils would then be disposed off-site. Uranium in groundwater would be addressed through monitored natural attenuation (MNA). The groundwater model developed predicts that the concentrations in the groundwater below the site will achieve the MCL in approximately 120 years. LUCs would be put in place for groundwater, primarily through long-term deed restrictions, until MCLs are achieved. Environmental monitoring would be used to document the performance of this alternative, which includes collection of groundwater and seep samples.

<u>Site-Wide Alternative 3</u>—Dismantlement and Off-Site Disposal of Buildings 1, 2, 3, 4/9, 5, 6, 8, 24, and 35; Complete Soil Removal to the Soil PRG-GW and Off-Site Disposal; Groundwater Recovery Using Vertical Wells and a Rubblized Trench with *Ex Situ* Treatment, Environmental Monitoring, and LUCs

Under this alternative, Buildings 1, 2, 3, 4/9, 5, 6, 8, 24 and 35 would be dismantled, and limited decontamination of the buildings/contents would be performed. The dismantlement of building 24 and the remediation of underlying soils will be conducted at the time of the site-wide remedial action with property owner permission to dismantle the building. If building 24 is not available or authorized for dismantlement at the time of the site-wide remedial action, the inaccessible contamination and building 24 will remain until it becomes available under a change of site conditions. Soils impacted above the Soil PRG-GW (11 milligrams per kilogram [mg/kg] total uranium and 6.6 pCi/g for ^{232}Th) would be removed. Building materials and impacted soils would then be disposed off-site. Uranium in groundwater would be addressed through groundwater recovery using a series of vertical wells and a rubblized trench along the southeastern property boundary combined with *ex situ* treatment and off-site disposal. The groundwater model predicts it will take approximately 30 years for the uranium concentrations in groundwater to achieve the MCL. Land use controls would be put in place for groundwater, primarily through short-term deed restrictions, until MCLs are achieved. Environmental monitoring would be used to document the performance of this alternative, which includes collection of groundwater and seep samples.

<u>Site-Wide Alternative 4</u>— Decontamination of Building 1; Dismantlement and Off-Site Disposal of Buildings 2, 3, 4/9, 5, 6, 8, and 24; Complete Soil Removal to the Soil PRG-CW and Off-Site Disposal; Monitored Natural Attenuation with Environmental Monitoring and Land Use Controls

Under this alternative, building 1, which has limited portions of the structure impacted, will be decontaminated. Soils underlying building 1 are not impact above the PRG-CW. Buildings 2, 3, 4/9, 5, 6, 8, and 24 would be dismantled, and limited decontamination of the buildings/contents would be performed. The dismantlement of building 24 and the remediation of underlying soils will be conducted at the time of the site-wide remedial action with property owner permission to dismantle the building. If building 24 is not available or authorized for dismantlement at the time of the site-wide remedial action, the inaccessible contamination and building 24 will remain until it becomes available under a change of site conditions. Soils impacted above the Soil PRG-CW (23 pCi/g for ^{238}U and 6.6 pCi/g for ^{232}Th), a soil cleanup level developed to be protective of

the construction worker, would be removed. Building materials and impacted soils would then be disposed off-site. Uranium in groundwater would be addressed through MNA. The groundwater model developed for this FS predicts that the groundwater concentrations in the groundwater below the site will achieve the MCL in approximately 660 years. LUCs would be put in place for groundwater, primarily through deed restrictions, until MCLs are achieved. Environmental monitoring would be used to document the performance of this alternative, which includes collection of groundwater and seep samples.

1.6 Appendix Organization and Content

This appendix is composed of the following sections:

- Section 1.0 describes the history and contents of the Guterl Site, risks posed by FUSRAP-related COCs at the Guterl Site, as well as remedial action objectives and remedial alternatives for the Guterl Site.
- Section 2.0 presents an overview of the process for identifying ARARs, per CERCLA.
- Section 3.0 discusses the ARARs identified for the Guterl Site.
- Section 4.0 discusses the regulations that were determined not to be ARARs.
- Section 5.0 lists all of the references cited within this appendix.

2.0 PROCESS FOR IDENTIFYING APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

This section describes the general process used to identify and evaluate ARARs. It presents a brief overview of how ARARs support the CERCLA remedy selection process and describes the factors that must be considered during development of ARARs.

Applicable or Relevant and Appropriate Requirements are developed in accordance with the process set forth in the NCP [Subpart E, Section 300.400(g)]. These requirements are identified in the RI, refined and developed during the FS, limited during the stage of the CERCLA remedy selection process, and finalized in the record of decision (ROD). When identifying ARARs, CERCLA Section 121 (d) "*Degree of cleanup*" directs that any remedial action selected shall attain a degree of cleanup of hazardous substances, pollutants and contaminants released into the environment, or control of further release, that at a minimum assures the protection of human health and the environment.

Regulatory language interpreting and implementing the statutory directive within the NCP [40 CFR 300.400(g)], provides that the lead agency (USACE) and support agencies (e.g., New York State Department of Environmental Conservation [NYSDEC]) shall identify applicable requirements. These requirements shall be based on an objective determination of whether the requirement specifically addresses a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. If it is determined that a requirement is not applicable to a specific release, the requirement may still be relevant and appropriate to the circumstances of the release. As will be discussed below, that determination is made in accordance with 40 CFR 300.400(g)(2). Under 40 CFR 300.430(e), USACE has the

ultimate responsibility to identify what requirements are ARARs for potential remedial alternatives.

The general process to develop ARARs for the Guterl Site begins with a review of the specific language used to describe the concept of ARARs in Section 121(d) of CERCLA and the NCP provisions in 40 CFR § 300.5. To be considered an ARAR, a requirement must consist of a "standard, requirement, criteria, or limitation" that has been formally promulgated as a statute or regulation under a federal environmental law, or a state environmental or facility siting law [CERCLA § 121(d)(2)(A)]. Thus, non-promulgated requirements are not ARARs. In addition, Section 121(d)(2)(A) of CERCLA states that ARARs apply "with respect to any hazardous substance, pollutant or contaminant that will remain onsite." Regulations that relate to activities associated with the implementation of a remedial action, such as U, S. Department of Transportation requirements governing the shipment of radioactive waste and Occupational Safety and Health Act requirements that address worker health and safety are considered technical requirements that would be complied with during execution of the remedial action but are not related to the degree of cleanup and therefore not ARARs.

Only the substantive requirements within a regulation can be considered an ARAR; administrative and procedural requirements do not qualify. In accordance with the NCP, disposal actions need to comply only with *substantive* requirements (55 *FR* 8758, March 8, 1990). Examples of administrative/procedural requirements include administrative approvals, inspections, permits, consultations, definitions, and reporting requirements. Administrative/procedural requirements also include methodologies or procedures applicable only to the regulatory agency.

The next step in identifying ARARs is to determine whether a requirement is legally applicable. Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards identified in a timely manner and that are more stringent than federal requirements may be applicable [CERCLA (§ 121(d)) and NCP (40 CFR 300.5)]. A requirement is applicable if all of the jurisdictional prerequisites of the law or rule are satisfied. These jurisdictional prerequisites are:

- Specified by the statute or regulation and subject to the authority of such statute or regulation.
- The types of substances or activities listed as falling under the authority of the statute or regulation.
- The time period for which the statute or regulation is in effect.
- The type of activities the statute or regulation requires, limits, or prohibits.

If it is determined that a requirement is not legally applicable to a specific release, the requirement may instead be relevant and appropriate to the circumstances of the release. Determining whether a rule is relevant and appropriate is a two-step process that involves determining whether the rule is relevant, and, if so, whether it is also appropriate. A requirement

is relevant if it addresses problems or situations sufficiently similar to the circumstances of the remedial action contemplated. It is appropriate if its use is well suited to the site.

In evaluating relevance and appropriateness, the factors listed below [from 40 CFR 300.400(g)(2)] are examined, where pertinent, to determine whether a requirement addresses problems or situations sufficiently similar to the circumstances of the release or remedial action contemplated, and whether its use is well suited to the site, and therefore is both relevant and appropriate.

(i) The purpose of the requirement and the purpose of the CERCLA action.
(ii) The medium regulated or affected by the requirement and the medium contaminated or affected at the CERCLA site.
(iii) The substances regulated by the requirement and the substances found at the CERCLA site.
(iv) The actions or activities regulated by the requirement and the remedial action contemplated at the CERCLA site.
(v) Any variances, waivers, or exemptions of the requirement and their availability for the circumstances at the CERCLA site.
(vi) The type of place regulated and the type of place affected by the release or action.
(vii) The type and size of structure or facility regulated and the type and size of structure or facility affected by the release or contemplated by the CERCLA action.
(viii) Any consideration of use or potential use of affected resources in the requirement and the use or potential use of the affected resource at the CERCLA site.

A determination of relevance and appropriateness may be applied to only portions of a requirement, so that only parts of a requirement need be met for compliance, whereas a determination of applicability is made for the requirement as a whole, so that the entire requirement must be met for compliance.

In addition to ARARs, USACE and support agencies may identify other advisories, criteria, or guidance to be considered (TBC) for a particular release. The TBC category consists of advisories, criteria, or guidance that were developed by the U.S. EPA, other federal agencies, or states that may be useful in developing CERCLA remedies. The TBCs will be considered as guidance or justification for a standard used in the remediation if no other standard is available for a situation to help determine the necessary level of cleanup for protection of health or the environment. This may occur if no ARAR is available for a particular constituent of concern, or if there are multiple constituents of concern and/or pathways not considered when establishing the standards in the ARAR.

3.0 EVALUATION OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

The regulations presented in this section are Title 10 of the CFR, Part 20, Subpart E and 40 CFR 141, which have been inserted directly from the published regulations and have not been altered in any way. These regulation were evaluated in detail to determine if they are applicable or

relevant and appropriate requirements that address COCs in soil, on building surfaces, and in groundwater at the Guterl Site.

The regulations, and their specific sections, identified as ARARs for the Guterl Site include:

- 10 CFR 20, Subpart E: Standards for Protection Against Radiation; Radiological Criteria for License Termination
  - 10 CFR 20.1402: Radiological Criteria for Unrestricted Use

- 40 CFR 141, Subpart G: National Primary Drinking Water Regulations; Maximum Contaminant Levels (MCLs) and Maximum Residual Disinfectant Levels
  - 40 CFR 141.66(e): Maximum Contaminant Levels (MCLs) for Radionuclides; MCL for Uranium

3.1 10 CFR 20, Subpart E– Radiological Criteria for License Termination

10 CFR 20, Subpart E is applicable to Nuclear Regulatory Commission (NRC)-licensed facilities where NRC is the successor to the AEC for licensing of nuclear materials and facilities. 10 CFR 20, Subpart E applies to any facility licensed by the NRC to manage special nuclear, source, or byproduct radionuclide material undergoing decontamination and remediation for release of the property for reuse. The regulation was promulgated by the NRC to ensure consistent standards for determining the extent to which lands must be remediated at facilities before remediation can be considered complete, and the NRC license terminated. The Guterl Site does not have a current NRC license; therefore, this requirement is not applicable at the site but may be relevant and appropriate.

The NRC regulates byproduct, special nuclear, and source material pursuant to the authorization of the Atomic Energy Act of 1954. As an integral part of its statutory role, NRC promulgated 10 CFR 20 specifically to provide "*Standards for Protection against Radiation*." Subpart E "*Radiological Criteria for License Termination*" provides cleanup requirements for NRC licensees and serves as the primary remediation standard for non-DOE organizations in the U.S.

The criteria in this 10 CFR 20, Subpart E apply to the decommissioning of facilities licensed under Parts 30, 40, 50, 52, 60, 61, 63, 70, and 72 of 10 CFR, and release of part of a facility or site for unrestricted use in accordance with 10 CFR Section 50.83, as well as other facilities subject to the Commission's jurisdiction under the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, as amended. For high-level and low-level waste disposal facilities (10 CFR Parts 60, 61, and 63), the criteria apply only to ancillary surface facilities that support radioactive waste disposal activities. The criteria do not apply to uranium and thorium recovery facilities already subject to Appendix A of 10 CFR Part 40, or to uranium solution extraction facilities.

Two subsections of this regulation were evaluated for relevance and appropriateness to remediation of the site:

- 10 CFR 20 Section 20.1402: Radiological Criteria for License Termination: radiological criteria under unrestricted conditions

- 10 CFR 20 Section 20.1403: Radiological Criteria for License Termination: radiological criteria under restricted conditions

A detailed relevant and appropriate analysis (i.e., evaluation against the eight factors in 40 CFR 300.400[g][2]) of CFR 20.1402 and 10 CFR 20.1403 criteria are presented in Table 1.

3.1.1 10 CFR 20, Subpart E, Section 1402: Radiological Criteria for Unrestricted Use

3.1.1.1 Published Regulation

Under 10 CFR 20.1402 of this regulation, a facility will be considered acceptable for unrestricted use if:

> *… the residual radioactivity that is distinguishable from background radiation results in a TEDE to an average member of the critical group that does not exceed 25 mrem (0.25 mSv) per year, including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA). Determination of the levels which are ALARA must take into account consideration of any detriments, such as deaths from transportation accidents, expected to potentially result from decontamination and waste disposal.*

The critical group is defined in 10 CFR 20.1003 as "the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances." The critical group has been defined as a construction worker for the Guterl Site.

3.1.1.2 Evaluation and Conclusion

The subsection of this regulation is not applicable to the Guterl Site because the site was not licensed by the NRC.

10 CFR 20.1402 establishes radiation dose limits to an average member of the critical group for all radionuclides from all possible pathways of exposure that would be acceptable for unrestricted use. These standards are relevant and appropriate to the COCs (thorium and uranium) and contaminated media (soil, building surfaces, and groundwater) being addressed at the Guterl Site. The dose limits are also relevant and appropriate for remedial alternatives being proposed in this FS.

3.1.2 10 CFR 20, Subpart E, Section 1403: Radiological Criteria for Restricted Use

3.1.2.1 Published Regulation

Substantive portions of 10 CFR 20.1403 of this regulation state that a facility will be considered acceptable for license termination under restricted conditions if:

> *(a) The licensee can demonstrate that further reductions in residual radioactivity necessary to comply with the provisions of § 20.1402 would result in net human or environmental harm or were not being made because the residual levels associated with restricted conditions are ALARA. Determination of the levels which are*

ALARA must take into account consideration of any detriments, such as traffic accidents, expected to potentially result from decontamination and waste disposal;

(b) The licensee has made provisions for legally enforceable institutional controls that provide reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 25 mrem (0.25 mSv) per year;" and

" (e) Residual radioactivity at the site has been reduced so that if the institutional controls were no longer in effect, there is reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group is as low as reasonably achievable and would not exceed either--

(1) 100 mrem (1 mSv) per year…

An alternative criterion is acceptable if it is protective of public health and the environment and the dose from all man-made sources combined, except medical, would be no more than 100 mrem per year. The alternative criterion also must include land use controls and achieve ALARA levels.

3.1.2.2 Evaluation and Conclusion

The subsection of this regulation is not applicable to the Guterl Site because the site was not licensed by the NRC.

10 CFR 20.1403 establishes radiation dose limits to an average member of the critical group for all radionuclides from all possible pathways of exposure that would be acceptable for restricted use. These standards are relevant and appropriate to the COCs and contaminated media being addressed at the Guterl Site. However, they are not relevant and appropriate for remedial alternatives being proposed in this FS, since all remedial alternatives (with the exception of Alternative 1—No Action) will ultimately achieve dose limits for unrestricted use by a construction worker. In other words, there are no restricted use alternatives for a construction worker being proposed for the Guterl Site in this FS.

3.2 40 CFR 141, Subpart G, Section 66 (40 CFR 141.66(e)): National Primary Drinking Water Standards; MCLs for Radionuclides; MCL for Uranium

3.2.1.1 Published Regulation

"MCL for uranium. The maximum contaminant level for uranium is 30 μg/L."

3.2.1.2 Evaluation and Conclusion

The national primary drinking water regulations apply to "*public water systems*." A "public water system" is defined in 40 CFR 141.2 as:

…a system for the provision to the public of water for human consumption through pipes or, after August 5, 1998, other constructed conveyances, <u>if such</u>

system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year.

As discussed in Section 2.1.8 of this FS, surface water in the adjacent Erie Canal has served (on an emergency basis by the City of Lockport) as a drinking water source. This emergency intake in the Erie Canal does have at least 15 service connections. Therefore, surface water in the Erie Canal, adjacent to the Guterl Site may be considered a public water system.

A "public water system" is either a "community water system" or "non-community water system." As defined in 40 CFR 141.2:

A "community water system means a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents."

A "non-community water system means a public water system that is not a community water system."

Although surface water in the Erie Canal, adjacent to the Guterl Site, does service at least 15 connections, it is only used on an emergency basis by the City of Lockport and not year-round by local residents. Therefore, surface water in the Erie Canal may be considered a "non-community public water system".

A non-community water system is either a "transient non-community water system (TWS)" or a "non-transient non-community water system (NTNCWS)." As defined in 40 CFR 141.2:

A "transient non-community water system or TWS means a non-community water system that does not regularly serve at least 25 of the same persons over six months per year."

A "non-transient non-community water system or NTNCWS means a public water system that is not a community water system and that regularly serves at least 25 of the same persons over 6 months per year."

Surface water in the Erie Canal is only used for drinking water purposes on an emergency basis (i.e., does not regularly serve at least 25 of the same persons over six months per year). Therefore, surface water in the Erie Canal may be considered a "transient non-community public water system."

Although groundwater underlying the Guterl Site intermittently discharges (via seeps) to surface waters of the adjacent Erie Canal, a worst-case mass balance calculation of uranium in groundwater (Appendix D) indicates that uranium in groundwater underlying the Guterl Site will not cause an uranium MCL exceedance in surface waters of the Erie Canal at any time between present and the next 1,000 years. Therefore, surface water is not a media of concern at the Guterl Site and the national primary drinking water regulations are not considered an ARAR for surface water in the Erie Canal for the protection of this transient, non-community public water system.

Groundwater underlying the Guterl Site is of sufficient quality and quantity to be considered potable for drinking water purposes. Since no functioning groundwater wells were identified within a half-mile radius of the Guterl Site (Appendix C) and groundwater at and near the site does not meet the criteria of a public water system (as defined above), the national primary drinking water regulation is not applicable to groundwater at the Guterl Site.

Since uranium is the FUSRAP-related COC in groundwater at the Guterl Site and the national primary drinking water regulation contains substantive criteria (i.e. MCL) pertaining to the hazardous substance, pollutant, or contaminant (i.e., uranium), the MCL is relevant and appropriate to groundwater underlying the Guterl Site.

4.0 REGULATIONS EVALUATED BUT DETERMINED NOT TO BE APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

A general discussion of several other regulations that did not meet the criteria to qualify as ARARs, summarized below, is presented in Subsections 4.1 through 4.15.

- 10 CFR 40: Domestic Licensing of Source Material
- 40 CFR 192, Subparts A and B: Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings
- 40 CFR 61: National Emissions Standards for Hazardous Air Pollutants
    - Subpart H: National Emission Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities;
    - Subpart I: National Emission Standards for Radionuclide Emissions from Federal Facilities other than NRC Licensees and Not Covered by Subpart H; and
    - Subpart Q: National Emission Standards for Radon from Department of Energy Facilities.
- 40 CFR 191, Subparts A, B, and C: Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level, and Transuranic Wastes.
- 10 CFR 61: Licensing Requirements for Land Disposal of Radioactive Waste
- 6 NYCRR Part 360: Solid Waste Management Facility Regulations
- 6 NYCRR Part 370: Hazardous waste Management System: General
- 6 NYCRR Part 371: Identification and Listing of Hazardous Waste
- 6 NYCRR Part 372: Hazardous Waste Manifest System and Related Standards for Generators, Transporters, and Facilities
- 6 NYCRR Subpart 373-1: Hazardous Waste Treatment, Storage, and Disposal Facility Permitting Requirements
- 6 NYCRR Subpart 373-2: Final Status Standards for Owners and Operators of Hazardous Waste Facilities
- 6 NYCRR Subpart 373-3: Interim Status Standards for Owners and Operators of Hazardous Waste Facilities
- 6 NYCRR Part 375: Inactive Hazardous Waste Disposal Site Remedial Program
- 6 NYCRR Part 376: Land Disposal Restrictions

- 6 NYCRR Part 380: Prevention and Control of Environmental Pollution by Radioactive Materials

4.1 10 CFR 40: Domestic Licensing of Source Material

The regulations in this part establish procedures and criteria for the issuance of licenses to receive title to, receive, possess, use, transfer, or deliver source and byproduct materials, as defined in this part, and establish and provide for the terms and conditions upon which the NRC will issue such licenses. These regulations also provide for the disposal of byproduct material and for the long-term care and custody of byproduct material and residual radioactive material.

The specific purpose of 10 CFR 40 Appendix A (Criteria Relating to the Operation of Uranium Mills and the Disposition of Tailings or Waste Produced by the Extraction or Concentration of Source Material from Ores Processed Primarily for Their Source Material Content) is to provide standards for long-term management and disposal of 11e.(2) byproduct material or residual radioactive material, consisting of mill tailings and other waste, from active mill processing facilities or inactive facilities subject to NRC licensing requirements, in a manner that is protective of human health and the environment.

After reviewing the contents of the regulation, USACE determined it does not meet the definition of an ARAR (as that term is defined in CERCLA or the NCP) because it does not contain substantive criteria pertaining to the hazardous substances, pollutants, and contaminants, or the circumstances of their release at the site. On-site disposal has not been retained as a technology/process option for the site. However, any of the substantive requirements of the regulation that may apply to other matters (off-site activities) will be complied with during the course of the CERCLA action.

4.2 40 CFR 192, Subparts A and B: Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings

Under the Uranium Mill Tailings Radiation Control Act (UMTRCA), the U.S. EPA was directed to develop "standards of general application…for the protection of the human health, safety, and the environment from radiological and nonradiological hazards associated with (uranium mill tailings)" for both the inactive and active processing sites, 42 U.S.C. 2022 and 772 F.2d 617. These standards of general application were promulgated in 40 CFR 192.

The DOE was directed to provide for the decontamination of all inactive processing sites designated in Title I of UMTRCA, and those that may be added in accordance with UMTRCA and with U.S. EPA standards 42 U.S.C. 7918(a)(1). However, these standards are not legally applicable to the Guterl Site because the site is not among the 24 Title I Remedial Action Program sites, as defined in Section 102 (Designation of Processing Sites) of the UMTRCA, as amended (42 United States Code [USC] 88). These standards also are not applicable under UMTRCA Title II because necessary criteria are not met for them to be applicable: (1) uranium ore processing was not performed and residues are not present at the site, and (2) the site is not an NRC-licensed facility, and the DOE and USACE are not licensees.

The requirements specified in 40 CFR 192 are not considered relevant to the Guterl Site because: (1) no AEC uranium ores containing ^{226}Ra are known to have been used or processed at the Guterl Site; (2) the natural decay of the uranium and thorium metals is not likely to have generated significant quantities of ^{226}Ra or ^{222}Rn; and (3) ^{226}Ra was found not to contribute

significantly to risk or dose. Since other radionuclides are known to be present, 40 CFR 192 is not appropriate for the remedial alternatives being considered for the Guterl Site.

4.3 40 CFR 61: National Emission Standards for Hazardous Air Pollutants

The Clean Air Act (CAA) requires the U.S. EPA to develop and enforce regulations to protect the general public from exposure to airborne contaminants that are known to be hazardous to human health. National Emission Standards for Hazardous Air Pollutants (NESHAPS) are point-source standards promulgated under Title III of CAA for substances identified by U.S. EPA as hazardous air pollutants (HAPs). HAPs are designated as hazardous substances under CERCLA 101(14). The U.S. EPA promulgated NESHAPS under 40 CFR 61. The NESHAPS are intended to address air pollutants for which National Ambient Air Quality Standards do not exist, but that may cause or contribute to an increase in mortality, irreversible illness, or incapacitating but reversible illness. 40 CFR 61 applies to emissions of particular pollutants from specific stationary sources and requires the application of technology-based emissions standards referred to as Maximum Achievable Control Technology.

40 CFR 61 consists of several subparts, including the following:

- Subpart A: General Provisions
- Subpart B: National Emission Standards for Radon Emissions from Underground Uranium Mines
- Subpart C: National Emission Standard for Beryllium
- Subpart D: National Emission Standard for Beryllium Rocket Motor Firing
- Subpart E: National Emission Standard for Mercury
- Subpart F: National Emission Standards for Vinyl Chloride
- Subpart G: Reserved
- Subpart H: National Emission Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities
- Subpart I: National Emission Standards for Radionuclide Emissions from Federal Facilities other than NRC Licensees and Not Covered by Subpart H
- Subpart J: National Emission Standard for Equipment Leaks (Fugitive Emission Sources) of Benzene
- Subpart K: National Emission Standards for Radionuclide Emissions from Elemental Phosphorus Plants
- Subpart L: National Emission Standard for Benzene Emissions from Coke By-Product Recovery Plants
- Subpart M: National Emission Standard for Asbestos
- Subpart N: National Emission Standard for Inorganic Arsenic Emissions from Glass Manufacturing Plants
- Subpart O: National Emission Standard for Inorganic Arsenic Emissions from Primary Copper Smelters

- Subpart P: National Emission Standard for Inorganic Arsenic Emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities
- Subpart Q: National Emission Standards for Radon Emissions From Department of Energy Facilities
- Subpart R: National Emission Standards for Radon Emissions from Phosphogypsum Stacks
- Subpart S: Reserved
- Subpart T: National Emission Standards for Radon Emissions from the Disposal of Uranium Mill Tailings
- Subpart U: Reserved
- Subpart V: National Emission Standard for Equipment Leaks (Fugitive Emission Sources)
- Subpart W: National Emission Standards for Radon Emissions from Operating Mill Tailings
- Subpart X: Reserved
- Subpart Y: National Emission Standard for Benzene Emissions from Benzene Storage Vessels
- Subparts Z and AA-Reserved
- Subpart BB: National Emission Standard for Benzene Emissions from Benzene Transfer Operations
- Subparts CC to EE-Reserved
- Subpart FF: National Emission Standard for Benzene Waste Operations

Among these subparts, Subpart H (National Emission Standards for Emissions of Radionuclides other than Radon from Department of Energy Facilities), Subpart I (National Emission Standards for Radionuclide Emissions from Federal Facilities other than NRC Licensees and Not Covered by Subpart H), Subpart Q (National Emission Standards for Radon Emissions from Department of Energy Facilities), and Subpart T (National Emission Standards for Radon Emissions from the Disposal of Uranium Mill Tailings) were evaluated as potential ARARs.

Subparts H, I and Q are not applicable since the Guterl Site is not a federally owned facility. Subpart T is not applicable since the Guterl Site is not a Title 1 UMTRCA site.

Also, these subparts are not considered relevant and appropriate as they do not address situations sufficiently similar to the circumstances of the release or remedial action and are not well suited to the site. Specifically, the Guterl Site does not and will not contain a “facility” similar in nature to those that Subparts H, I and Q regulate. Additionally Subparts H, I, W, and T regulate sites that will emit radon or something other than radon-222 or radon-220 and such emissions are not anticipated to occur on the Guterl Site.

4.4 40 CFR 191: Subparts A, B, and C: Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level, and Transuranic Wastes

The U.S. EPA promulgated 40 CFR 191 as a general environmental regulation for the management and disposal of spent nuclear fuel and high-level and transuranic (TRU) waste. This regulation consists of three subparts: Subpart A, Environmental Standards for Management and Storage; Subpart B, Environmental Standards for Disposal; and Subpart C, Environmental Standards for Groundwater Protection.

The requirements in 40 CFR 191.01 (Subpart A), 40 CFR 191.11 (Subpart B), and 40 CFR 191.21 (Subpart C) define "applicability" for their respective subparts and, therefore, are generally administrative/procedural in nature; however, they are useful in determining the applicability of the regulation to the Guterl Site. These requirements specify that 40 CFR 191 applies to radiation doses or releases of radioactive materials resulting from the management (except for transportation) and storage of spent nuclear fuel, high-level, or TRU radioactive waste at NRC and DOE facilities. Because they apply to "spent nuclear fuel, high-level, or TRU radioactive waste," the requirements of 40 CFR 191 are not applicable to the milling operations that were performed at the Guterl Site. The contaminated soils and building surfaces at the Guterl Site are not spent nuclear fuel and are not comprised of the radionuclides, which make up high-level waste or TRU waste. In addition, the site is not regulated by the NRC or an agreement state (New York) and is not currently operated by DOE. Therefore, the substantive criteria developed for high-level waste, TRU waste, and spent fuel under 40 CFR 191, are not applicable to the contaminated media at the site.

4.5 10 CFR 61: Licensing Requirements for Land Disposal of Radioactive Waste

The NRC regulates byproduct, special nuclear, and source material pursuant to the authorization of the Atomic Energy Act of 1954. As an integral part of its statutory role, NRC has promulgated 10 CFR 61 specifically to provide "Licensing Requirements for Land Disposal of Radioactive Waste."

As stated in 10 CFR 61.1, this regulation establishes (for land disposal of radioactive waste) the procedures, criteria, and terms and conditions upon which the NRC issues licenses for the disposal of radioactive waste containing byproduct, source, and special nuclear material received from *other persons* (i.e., licensed or un-licensed facilities). Low-level radioactive waste is radioactive waste not classified as high-level radioactive waste, transuranic (TRU) waste, spent nuclear fuel, or byproduct material, as defined in Section 11e.(2) of the Atomic Energy Act (uranium or thorium tailings and waste).

This regulation is not considered to be relevant and appropriate for the Guterl Site since no remedial alternative being proposed includes on-site disposal.

4.6 6 NYCRR 360: Solid Waste Management Facility Regulations

The regulations in 6 NYCRR 360 regulate solid waste management facilities located partially or wholly within the New York State. This regulation applies to all solid waste other than low-level radioactive waste and naturally-occurring and accelerator-produced radioactive materials waste, and disposal activities involving those wastes.

After reviewing the contents of the regulation, USACE determined it does not meet the definition of an ARAR, as that term is defined in CERCLA or the NCP, because it does not contain substantive criteria pertaining to the hazardous substances or pollutants and contaminants or the circumstances of their release at the site. However, any substantive requirements of the regulation that may apply to other matters will be complied with during the course of the CERCLA action.

4.7 6 NYCRR Part 370: Hazardous Waste Management System: General

The regulations in 6 NYCRR 370 provide definitions of terms and general standards applicable to Parts 370 through 374, and 376. The regulation also sets forth the regulations that the department will use in making information it receives available to the public and sets forth the requirements that generators; transporters; or owners or operators of treatment, storage, or disposal facilities must follow to assert claims of business confidentiality with respect to information that is submitted to the department under Parts 370 through 374 and 376.

After reviewing the contents of the regulation USACE determined it does not meet the definition of an ARAR, as that term is defined in CERCLA or the NCP, because it does not contain substantive criteria pertaining to the hazardous substances or pollutants and contaminants or the circumstances of their release at the site. Instead, the regulation pertains to hazardous waste. Constituents of concern related to FUSRAP are not hazardous waste. However, any of the substantive requirements of the regulation that may apply to other matters will be complied with during the course of the CERCLA action.

4.8 6 NYCRR Part 371: Identification and Listing of Hazardous Wastes

The regulations in 6 NYCRR 371 establish the procedures for identifying those solid wastes which are subject to regulation as hazardous wastes under Parts 370 through 373, and 376. However, even though a given material is defined as a hazardous waste under this part, it may be exempt from one or more of the substantive provisions of those parts, as specified in each respectively.

After reviewing the contents of the regulation, USACE determined it does not meet the definition of an ARAR, as that term is defined in CERCLA or the NCP, because it does not contain substantive criteria pertaining to the hazardous substances or pollutants and contaminants or the circumstances of their release at the site. Instead, the regulation pertains to hazardous waste. The FUSRAP-related COCs are not hazardous waste. However, any of the substantive requirements of the regulation that may apply will be complied with during the course of the CERCLA action.

4.9 6 NYCRR Part 372: Hazardous Waste Manifest System and Related Standards for Generators, Transporters, and Facilities

The regulations in 6 NYCRR 372 establish standards for generators and transporters of hazardous waste and standards for generators, transporters, and treatment, storage or disposal facilities relating to the use of the manifest system and its record keeping requirements. The manifest document shall accompany all shipments of hazardous waste while in transit unless specifically exempted under this part. The manifest document will serve as a multipurpose instrument to be used as a tracking, auditing, and enforcement device.

After reviewing the contents of the regulation, USACE determined it does not meet the definition of an ARAR, as that term is defined in CERCLA or the NCP, because it does not contain substantive criteria pertaining to the hazardous substances or pollutants and contaminants or the circumstances of their release at the site. However, any of the substantive requirements of the regulation that may apply to other matters will be complied with during the course of the CERCLA action.

4.10 6 NYCRR Subpart 373-1: Hazardous Waste Treatment, Storage, and Disposal Facility Permitting Requirements

The regulations in 6 NYCRR 373-1 regulate hazardous waste management facilities located partially or wholly within New York State.

After reviewing the contents of the regulation, USACE determined it does not meet the definition of an ARAR, as that term is defined in CERCLA or the NCP, because it does not contain substantive criteria pertaining to the hazardous substances or pollutants and contaminants or the circumstances of their release at the site. Instead it is procedural in nature. However, any of the substantive requirements of the regulation that may apply to other matters will be complied with during the course of the CERCLA action.

4.11 6 NYCRR Subpart 373-2: Final Status Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities

The regulations in 6 NYCRR 373-2 establish minimum state standards which define the acceptable management of hazardous waste. The standards in this subpart apply to owners and operators of all facilities which treat, store, or dispose of hazardous waste, except as specifically provided otherwise in this part or Part 371.

After reviewing the contents of the regulation, USACE determined it does not meet the definition of an ARAR, as that term is defined in CERCLA or the NCP, because it does not contain substantive criteria pertaining to the hazardous substances or pollutants and contaminants or the circumstances of their release at the site. However, any of the substantive requirements of the regulation that may apply to other matters will be complied with during the course of the CERCLA action.

4.12 6 NYCRR Subpart 373-3: Interim Status Standards for Owners and Operators of Hazardous Waste Facilities

The regulations in 6 NYCRR 373-3 establish minimum statewide standards that define the acceptable management of hazardous waste during the period of interim status and until certification of final closure or, if the facility is subject to post-closure requirements, until post-closure responsibilities are fulfilled.

After reviewing the contents of the regulation, USACE determined it does not meet the definition of an ARAR, as that term is defined in CERCLA or the NCP, because it does not contain substantive criteria pertaining to the hazardous substances or pollutants and contaminants or the circumstances of their release at the site. Instead, the regulation pertains to hazardous waste. FUSRAP-related COCs are not hazardous waste. However, any of the substantive

requirements of the regulation that may apply to other matters will be complied with during the course of the CERCLA action.

4.13 6 NYCRR Part 375: Inactive Hazardous Waste Disposal Site Remedial Program

The regulations in 6 NYCRR 375 establish the development and implementation of remedial programs for inactive hazardous waste disposal sites, specifically under Subpart 375-2, including, but not limited to, sites listed in the registry which are either on the national priorities list (NPL) or are being addressed by the Department of Defense or the Department of Energy.

After reviewing the contents of the regulation, USACE determined it does not meet the definition of an ARAR, as that term is defined in CERCLA or the NCP, because it does not contain substantive criteria pertaining to the hazardous substances or pollutants and contaminants or the circumstances of their release at the site. Instead, the regulation pertains to hazardous waste. The FUSRAP-related COCs are not hazardous waste. However, any of the substantive requirements of the regulation that may apply to other matters will be complied with during the course of the CERCLA action.

4.14 6 NYCRR Part 376: Land Disposal Restrictions

The regulations in 6 NYCRR 376 identify hazardous wastes that are restricted from land disposal and define those limited circumstances under which an otherwise prohibited waste may be land disposed. Except as specifically provided otherwise in this part or Part 371, the requirements of this part apply to persons who generate or transport hazardous waste and owners and operators of hazardous waste treatment, storage, and disposal facilities.

Since there are no remedial alternatives where the material is capped in place, there will be no generation and placement of hazardous wastes so land disposal restrictions would not be applicable. Under alternatives that include excavation and off-site disposal, land disposal restrictions would not pertain to the on-site actions. It will be the responsibility of the off-site disposal facility to satisfy land disposal restrictions if they are applicable to the waste sent to them. Only under an alternative where the hazardous waste is generated (e.g., by excavation), and then placed into an on-site land disposal unit, would land disposal restrictions be considered potential ARARs.

After reviewing the contents of the regulation, USACE determined it does not meet the definition of an ARAR, as that term is defined in CERCLA or the NCP, because it does not contain substantive criteria pertaining to the hazardous substances or pollutants and contaminants or the circumstances of their release at the site. Instead it is procedural in nature. However, any of the substantive requirements of regulation that may apply to other matters will be complied with during the course of the CERCLA action.

4.15 6 NYCRR 380: Prevention and Control of Environmental Pollution by Radioactive Materials

The regulations in 6 NYCRR 380 establish standards to protect against ionizing radiation resulting from the disposal and discharge of radioactive material to the environment. The purpose of the requirements in this regulation is to control the disposal and discharge of radioactive material to the environment so that the total dose to an individual member of the

public (including doses resulting from licensed and unlicensed radioactive material and from radiation sources other than background radiation) does not exceed the standards for protection against radiation prescribed in Subpart 380-5.

After reviewing the contents of the regulation, USACE determined it does not meet the definition of an ARAR, (as that term is defined in CERCLA or the NCP, because it does not contain substantive criteria pertaining to the hazardous substances, pollutants, and contaminants, or the circumstances of their release at the site. None of the proposed alternatives for the Guterl Site involve the disposal of material at the site.

5.0 REFERENCES

10 CFR (Code of Federal Regulations) 20. *Standards for Protection Against Radiation*.

10 CFR 40 Appendix A. *Criteria Relating to the Operation of Uranium Mills and the Disposition of Tailings or Waste Produced by the Extraction or Concentration of Source Material from Ores Processed Primarily for Their Source Material Content.*

10 CFR 61. *Licensing Requirements for Land Disposal of Radioactive Waste.*

40 CFR 61. *National Emission Standards for Hazardous Air Pollutants.*

40 CFR 192. *Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings*.

40 CFR 300. *National Oil and Hazardous Substances Pollution Contingency Plan.*

Fdsys (Federal Digital System) 2010. Code of Federal Regulations (Annual Edition), http://www.gpo.gov/fdsys (accessed October 11, 2011)

55 Federal Register 8758. *Final National Contingency Plan.*

6 NYCRR 380. *Rules and Regulations for Prevention and Control of Environmental Pollution by Radioactive Materials*.

42 United States Code Chapter 88. *Uranium Mill Tailings Radiation Control*.

42 United States Code Chapter 2014. *Definitions.*

42 United States Code Chapter 2022. *Health and Environmental Standards for Uranium Mill Tailings*.

42 United States Code Chapter 7918. *Remedial Action and Mineral Recovery Activities.*

United States Army Corps of Engineers (USACE), 2001. Preliminary Assessment/Site Inspection (PA/SI) – Former Guterl Specialty Steel Corporation, Lockport, New York. U.S. Army Corps of Engineers, Buffalo District. April.

USACE, 2005b. Summary of Historical Analytical Data for the Guterl Steel FUSRAP Site, Lockport, New York. USACE, Buffalo District. June.

USACE, 2006. Data Gap Analysis Report for the former Guterl Specialty Steel Corporation. Final. Prepared by Earth Tech for USACE, Buffalo District. March.

USACE, 2010. Remedial Investigation Report, Guterl Specialty Steel Site, Lockport, New York. Prepared by Earth Tech/AECOM Inc. for USACE Buffalo District. July.

USACE, 2012a. Final Data Gap Analysis Report, Former Guterl Specialty Steel Corporation, Lockport, New York. Prepared by Shaw Environmental & Infrastructure, Inc. March.

USACE, 2012b. Final Technical Memorandum, Data Gap Investigation to Support the Feasibility Study, Former Guterl Specialty Steel Corporation, Lockport, New York. Prepared by Shaw Environmental & Infrastructure, Inc. October.

USACE, 2013. Final Supplemental Sampling Technical Memorandum, Former Guterl Specialty Steel Corporation, Lockport, New York. Prepared by Shaw Environmental & Infrastructure, Inc. July.

U.S. EPA (United States Environmental Protection Agency) 1988a. *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA. Interim Final.* U.S. EPA/540/G-89/004. OSWER Directive 9355.3-01. October 1988.

U.S. EPA 1988b. *CERCLA Compliance with Other Laws Manual: Interim Final*. Office of Emergency and Remedial Response, Washington D.C. U.S. EPA/540/G-89/006. August 1988.

U.S. EPA 1993. Background Information Document for Amendments to 40 CFR Part 191, Environmental Standards for the Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Waste, U.S. EPA 402-R-93-073, U.S. EPA Office of Radiation and indoor Air, Washington, DC 30260. November 1993.

TABLES

[This page is intentionally left blank]

TABLE 1
Relevant and Appropriate Analysis for the Guterl Specialty Steel Site, Lockport, New York

	(i) The purpose of the requirement and the purpose of the CERCLA action.	(ii) The medium regulated or affected by the requirement and the medium contaminated or affected at the CERCLA site.	(iii) The substances regulated by the requirement and the substances found at the CERCLA site.	(iv) The actions or activities regulated by the requirement and the remedial action contemplated at the CERCLA site.	(v) Any variances, waivers, or exemptions of the requirement and their availability for the circumstances at the CERCLA site.	(vi) The type of place regulated and the type of place affected by the release or CERCLA action.	(vii) The type and size of structure or facility regulated and the type and size of structure or facility affected by the release or contemplated by the CERCLA action.	(viii) Any consideration of use or potential use of affected resources in the requirement and the use or potential use of the affected resource at the CERCLA site.
10 CFR 20 Subpart E - (20.1402) Radiological Criteria for License Termination: radiological criteria for unrestricted use	Criterion states a site will be considered acceptable for site closure by unlimited use/unrestricted exposure if the residual radioactivity that is distinguishable from background radiation results in a total effective dose equivalent (TEDE) to an average member of the critical group that does not exceed 25 mrem (0.25 mSv) per year, including that from groundwater sources of drinking water, and that the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA). Determination of the levels which are ALARA must take into account consideration of any detriments, such as deaths from transportation accidents, expected to potentially result from decontamination and waste disposal.	Addresses soil, buildings, and groundwater. Each of these media is impacted.	10 CFR 20 establishes standards for protection against ionizing radiation resulting from activities conducted under licenses issued by the Nuclear Regulatory Commission. These regulations are issued under the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, as amended.	This subpart addresses decommissioning of facilities licensed under the Atomic Energy Act. The Former Guterl Specialty Steel Corporation was not licensed; but from 1948 to 1956, under the former ownership of Simonds, performed rolling mill operations on uranium metal and, to a much smaller extent, thorium metal.	10 CFR 20.1404 provides for alternative criteria for license termination provided that there are assurances that the public health and safety would continue to be protected; has employed to the extent practical restrictions on site use; reduces doses to ALARA levels; and has submitted a decommissioning plan indicating closure by alternative criteria. A waiver will not be requested for this site.	The regulations in this part apply to persons licensed by the Nuclear Regulatory Commission to receive, possess, use, transfer, or dispose of byproduct, source, or special nuclear material or to operate a production or utilization facility. The limits in this part do not apply to doses due to background radiation, to exposure of patients to radiation for the purpose of medical diagnosis or therapy, to exposure from individuals administered radioactive material and released under §35.75, or to exposure from voluntary participation in medical research programs. The Former Guterl Specialty Steel Corporation was not licensed; but from 1948 to 1956, under the former ownership of Simonds, performed rolling mill operations on uranium metal and, to a much smaller extent, thorium metal.	The type and size of structure or facility to be regulated under the rule is a facility licensed to receive, possess, use, transfer, or dispose of byproduct, source, or special nuclear material or to operate a production or utilization facility with wastes typically contained on-site in some manner. At closed or inactive sites, the wastes are typically transferred to a licensed disposal facility. Active facilities may contain the waste in some type of closed structure. The type of operations at the former site is similar to these actions.	This subpart is applied to a site to be considered acceptable for license termination under unrestricted conditions.

TABLE 1
Relevant and Appropriate Analysis for the Guterl Specialty Steel Site, Lockport, New York

	(i) The purpose of the requirement and the purpose of the CERCLA action.	(ii) The medium regulated or affected by the requirement and the medium contaminated or affected at the CERCLA site.	(iii) The substances regulated by the requirement and the substances found at the CERCLA site.	(iv) The actions or activities regulated by the requirement and the remedial action contemplated at the CERCLA site.	(v) Any variances, waivers, or exemptions of the requirement and their availability for the circumstances at the CERCLA site.	(vi) The type of place regulated and the type of place affected by the release or CERCLA action.	(vii) The type and size of structure or facility regulated and the type and size of structure or facility affected by the release or contemplated by the CERCLA action.	(viii) Any consideration of use or potential use of affected resources in the requirement and the use or potential use of the affected resource at the CERCLA site.
40 CFR 141.66 National Primary Drinking Water Regulations - Maximum Contaminant Levels for Radionuclides	Establishes primary drinking water maximum contaminant levels (MCLs) for radionuclides pursuant to Section 1412 of the Public Health Service Act, as amended by the Safe Drinking Water Act (Pub. L. 93-523); and related regulations applicable to public water systems. This part shall apply to each public water system.	Groundwater is of sufficient yield and quality to be considered potable.	40 CFR 141.66 regulates radionuclides in public drinking water supplies including radium, gross alpha particle activity, beta particle and photon radioactivity, tritium, strontium, and uranium. Groundwater at the site is a viable, but nonutilized, source of drinking water (i.e. not a public water system). Uranium exceeds the MCL.	Use of groundwater as a public drinking water supply is the regulated activity. Groundwater at the site is a viable, but nonutilized, source of drinking water (i.e. not a public water system). Actions under consideration at the site are to restrict the potential use of groundwater as a drinking water supply, domestic or public.	40 CFR 141.4 states that variances or exemptions from certain provisions of these regulations may be granted pursuant to Sections 1415 and 1416 of the Act and Subpart K of Part 142 of this chapter (for small system variances) by the entity with primary enforcement responsibility, except that variances or exemptions from the MCLs for total coliforms and E. coli and variances from any of the treatment technique requirements of Subpart H of this part may not be granted.	The type of site or facility regulated by 40 CFR 141 is a public water supply. Groundwater at the site is a viable, but nonutilized, source of drinking water (i.e. not a public water system).	Public water system means a system for the provision to the public of water for human consumption through pipes or, after August 5, 1998, other constructed conveyances, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Such term includes any collection, treatment, storage, and distribution facilities under control of the operator of such system, and used primarily in connection with such system; and any collection or pretreatment storage facilities not under such control, which are used primarily in connection with such system. Such term does not include any special irrigation district. A public water system is either a community water system or a noncommunity water system.	Groundwater at the site is a viable, but nonutilized, source of drinking water (i.e. not a public water system). However, groundwater is of sufficient yield and quality to be considered potable.

APPENDIX L

Environmental Monitoring Report 2016

Former Guterl Specialty Steel

Corporation FUSRAP Site

Guterl Specialty Steel Site
Environmental Monitoring Report
2016 Sampling Results

U.S. ARMY CORPS OF ENGINEERS **BUILDING STRONG ®**
Buffalo District
April 2017

Formerly Utilized Sites Remedial Action Program—Guterl Site

Site Description

The Guterl Specialty Steel Corporation Site (Guterl Site) is located in Lockport, Niagara County, New York, approximately 20 miles northeast of Buffalo, New York. The U.S. Army Corps of Engineers is investigating the site under the Formerly Utilized Sites Remedial Action Program (FUSRAP). This program was established in 1974 to identify, investigate, and if necessary, clean up or control sites throughout the United States that were contaminated as a result of the Nation's early atomic weapons and energy programs.

The 70-acre Guterl Site (Figure 1) comprises three areas:

- The 52-acre Allegheny Technologies Incorporated (ATI) (formerly Allegheny Ludlum Corporation) property. ATI Specialty Materials operates a specialty steel manufacturing facility in the southwest portion of this property.

- The 9-acre landfill area owned by ATI. This area is in the northwest corner of the site. The landfill, which ceased operations as a waste disposal area in 1981, is a Class 2 New York State Department of Environmental Conservation Inactive Hazardous Waste Disposal Site (Site No. 932032).

- The 9-acre excised area owned by Guterl Specialty Steel. This area includes nine buildings located in the southeast corner of the site that had been used during Atomic Energy Commission (AEC) operations to roll uranium metal. These buildings are abandoned, and a chain link security fence surrounds them.

Land use near the Guterl Site is mixed. It consists of private residences, light industries, and a former railroad right-of-way. The Erie Canal is south-southeast of the site.

Purpose

The purpose of groundwater monitoring at the Guterl Site is to determine the potential for movement of FUSRAP-related radiological contaminants associated with historical AEC activities. Between 1948 and 1956, the AEC's New York Operations Office managed contracts there with Simonds Saw and Steel, a previous owner of the property, to roll uranium steel billets into rods.

The Corps of Engineers samples a subset of the on-site groundwater wells annually to (1) monitor conditions at the site, (2) develop baseline data for monitoring groundwater in the event that an alternative is chosen that includes natural attenuation, and (3) develop and evaluate alternatives to address unacceptable risks. The Corps of Engineers posts annual environmental monitoring data reports for the Guterl Site under the "Environmental Monitoring" section of the project website (see page 3 footer for website).

Scope

The Corps of Engineers selects groundwater wells at the Guterl Site for sampling based on previously collected data and the potential for transport of FUSRAP-related constituents. The Corps sampled 51 groundwater wells in 2015; normally a subset of these wells (between 20 and 24) is sampled annually. This larger array of groundwater wells will be sampled every three to five years to verify the overall conditions of FUSRAP-related constituents in groundwater underlying the Guterl Site. Figure 1 shows the existing wells at the site and highlights the 24 shallow and deep groundwater wells sampled in 2016. A contracted laboratory analyzed the samples for dissolved uranium, the most mobile FUSRAP-related constituent at the Guterl Site.

The Corps of Engineers typically samples groundwater seeps discharging from the northern wall of the Erie Canal and surface water in the Erie Canal. However, due to regional drought conditions in 2016, there were no visible groundwater seeps to sample. Without this groundwater discharge to the canal, the Corps determined that Erie Canal water would not be measurably influenced that year, so surface water samples were not collected in 2016. Historical seep and surface water sample results, collected between 2011 and 2015, can be found in the *2015 Environmental Monitoring Report*.

Results and Interpretation

<u>Groundwater Results</u>

Table 1 presents the unfiltered and filtered analytical results for isotopic and total uranium in groundwater samples collected at the site between 2007 and 2016. The groundwater sample results are consistent with historical (i.e. 2007 and 2009–2015) data as shown in Table 1. Uranium in shallow groundwater continues to extend in the direction of groundwater flow, from the northwest to the southeast towards the Erie Canal (Figure 2). Uranium in deep groundwater is not as extensive as it is in the shallow groundwater plume; however, it extends in the same northwest to southeast

direction (Figure 3). Figure 4 presents filtered total uranium results in groundwater wells sampled in 2016, arranged in the direction of groundwater flow across the site. Groundwater monitoring well MW-605D is at the center of the Guterl Site; it continues to exhibit the highest total uranium concentration (271 µg/L, unfiltered) in groundwater.

For the 2015 sampling event, the results for the paired shallow well MW-602D and deep well MW-702DD were an anomaly. The result for each well contradicted previous concentration levels. This led the Corps to review lab reports and sample collection logs to determine if there had been an error in the sample collection and/or laboratory processing analysis, yet no error was apparent. The 2016 sampling event supports that 2015 was an anomaly since the 2016 sampling results from these wells were consistent with historical results before 2015.

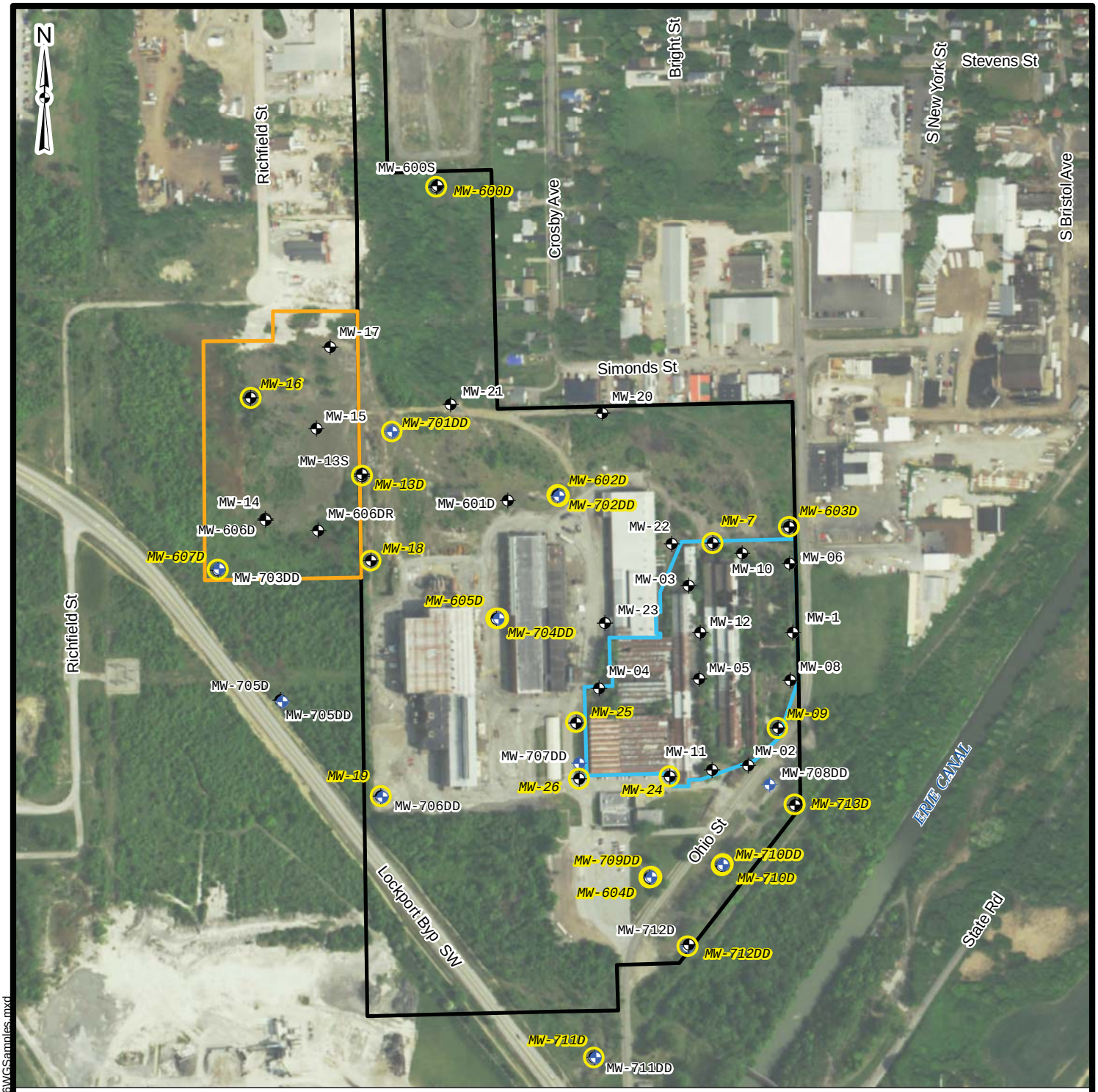
Conclusions

Uranium concentrations in groundwater at the Guterl Site are consistent overall with historical results. There is a seasonal fluctuation in the size of the groundwater plume. Depending on what time of the year the sampling occurs, the uranium concentration results vary due to the amount of groundwater present within the site. Groundwater under the site is currently not a utilized source of potable (i.e. drinking) water; therefore, there is no risk to human health above acceptable levels.

Next Steps

The U.S. Army Corps of Engineers will continue to sample groundwater, seeps, and surface water to monitor conditions and support the development of the feasibility study and proposed plan for the Guterl Site. The next round of groundwater, seeps, and surface water sampling will occur in the fall of 2017.

U.S. ARMY CORPS OF ENGINEERS, BUFFALO DISTRICT
ENVIRONMENTAL PROJECT MANAGEMENT TEAM
1776 NIAGARA STREET, BUFFALO, NEW YORK 14207
Phone: 800-833-6390 (Option 4)
Email: fusrap@usace.army.mil
Project Website: http://www.lrb.usace.army.mil/Missions/HTRW/FUSRAP/GuterlSteelSite/



Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Monitoring Well Sampled in 2016
- Guterl Excised Area Boundary
- Guterl Landfill Boundary
- ATI Specialty Materials

0 225 450 900 Feet

US Army Corps of Engineers Buffalo District

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
BUFFALO, NY

2016 GROUNDWATER SAMPLING LOCATIONS

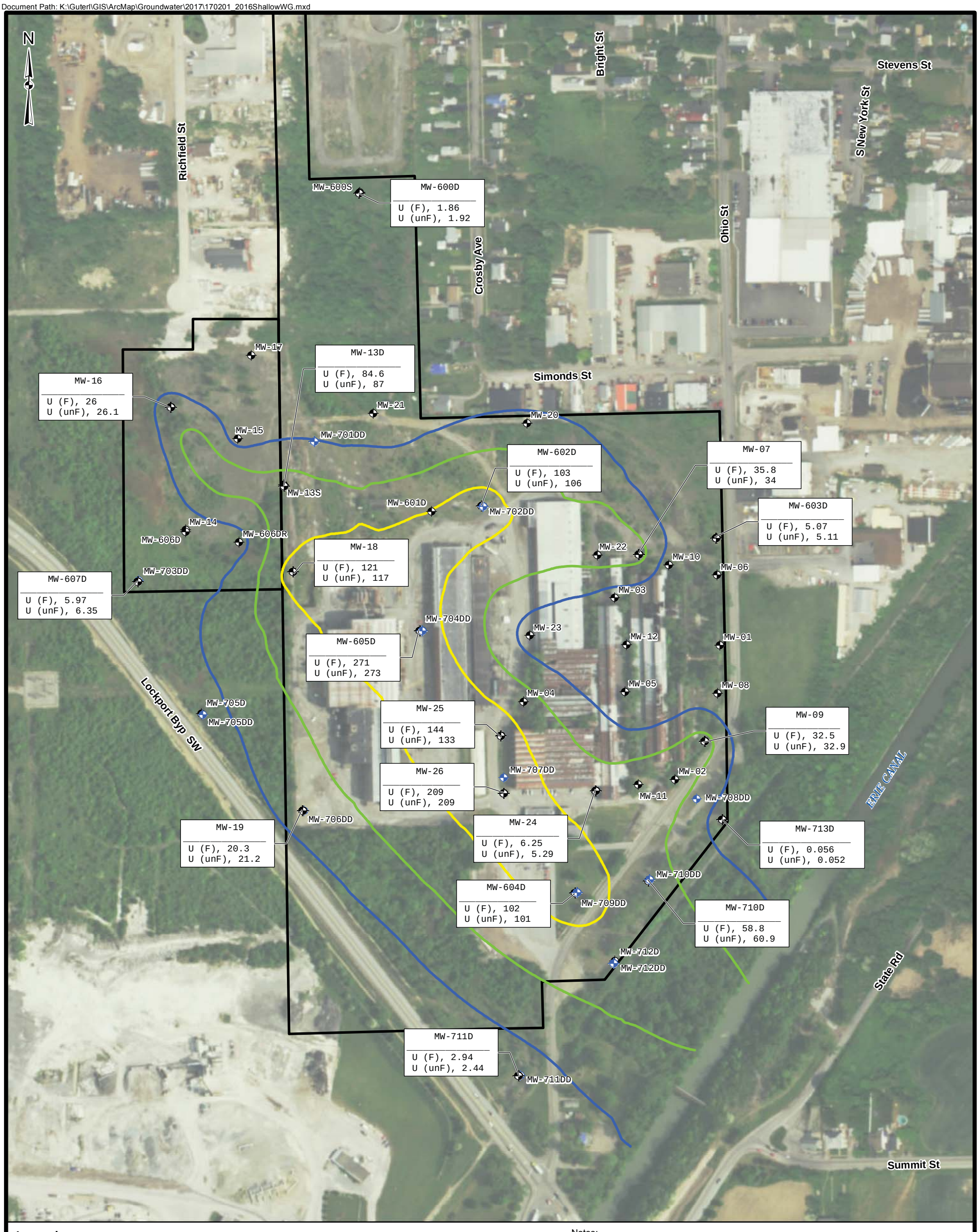
Document Name: 170201_2016WGSamples.mxd
Drawn By: H5TDESPM
Date Saved: 23 Feb 2017
Time Saved: 11:56:24 AM

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

FIGURE 1

Document Path: K:\Guterl\GIS\ArcMap\Groundwater\2017\170201_2016WGSamples.mxd

Document Path: K:\Guterl\GIS\ArcMap\Groundwater\2017\170201_2016ShallowWG.mxd



Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Site Boundary
- Extent of Groundwater Above 10 µg/l
- Extent of Groundwater Above 30 µg/l
- Extent of Groundwater Above 90 µg/l

Notes:
U (F) - Total Uranium Filtered
U (unF) - Total Uranium Unfiltered

All concentrations reported in µg/l.
µg/l - Micrograms per Liter.

Location ID: MW-25
U (unF), 133
Radionuclide; Activity

0 150 300 600 Feet

US Army Corps of Engineers
Buffalo District

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
BUFFALO, NY

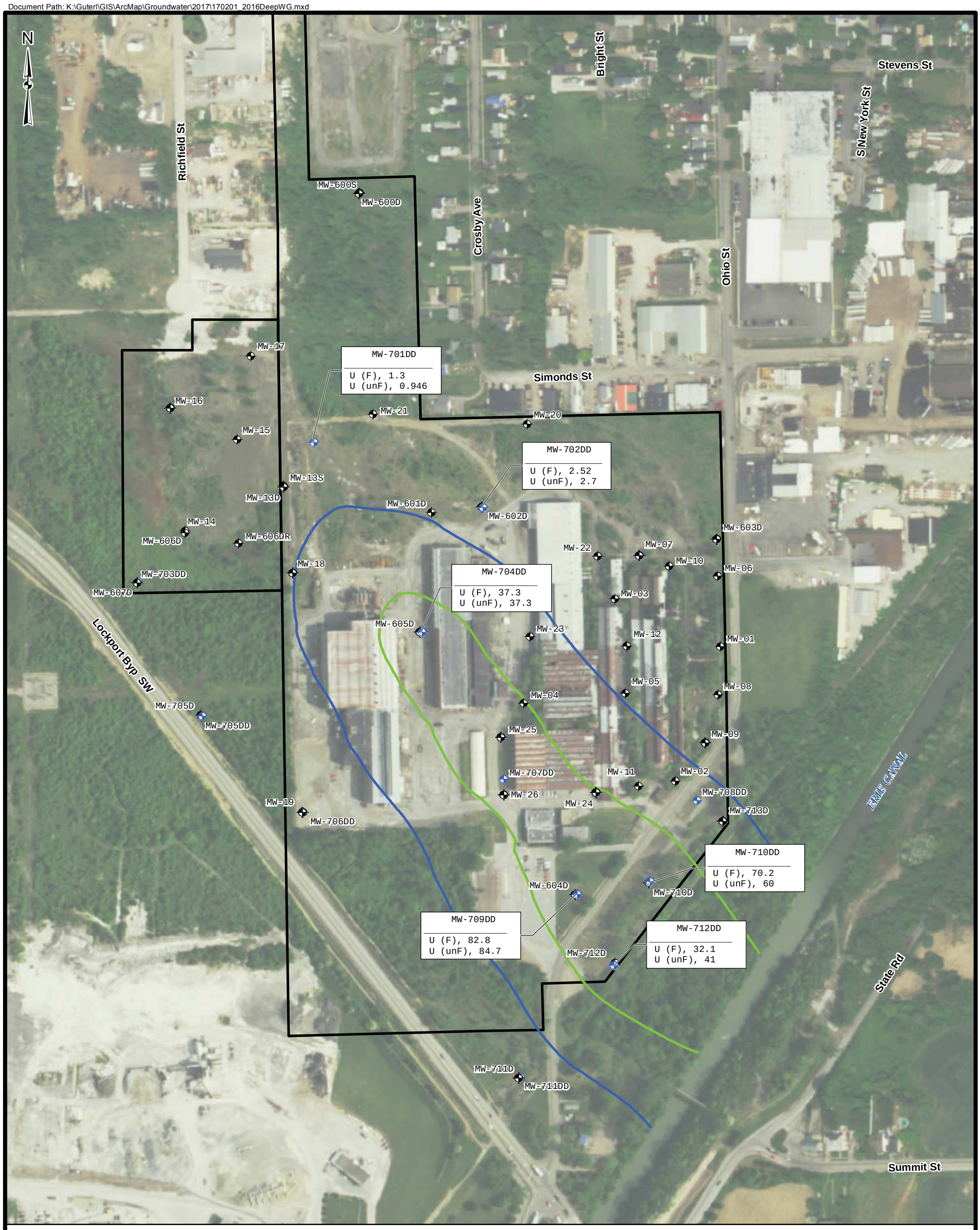
TOTAL URANIUM IN SHALLOW GROUNDWATER (SEPTEMBER 2016)

Document Name: 170201_2016ShallowWG.mxd
Drawn By: H5TDESPM
Date Saved: 06 Feb 2017
Time Saved: 2:39:39 PM

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

FIGURE 2

Document Path: K:\Guterl\GIS\ArcMap\Groundwater\2017\170201_2016DeepWG.mxd



Legend

- Deep Monitoring Well
- Shallow Monitoring Well
- Site Boundary
- Extent of Groundwater Above 10 µg/l
- Extent of Groundwater Above 30 µg/l
- Extent of Groundwater Above 90 µg/l

Notes:
U (F) - Total Uranium Filtered
U (unF) - Total Uranium Unfiltered

All concentrations reported in µg/l.
µg/l - Micrograms per Liter.

Location ID: MW-709DD
U (unF), 84.7
Radionuclide / Activity

0 150 300 600 Feet

US Army Corps of Engineers
Buffalo District

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
BUFFALO, NY

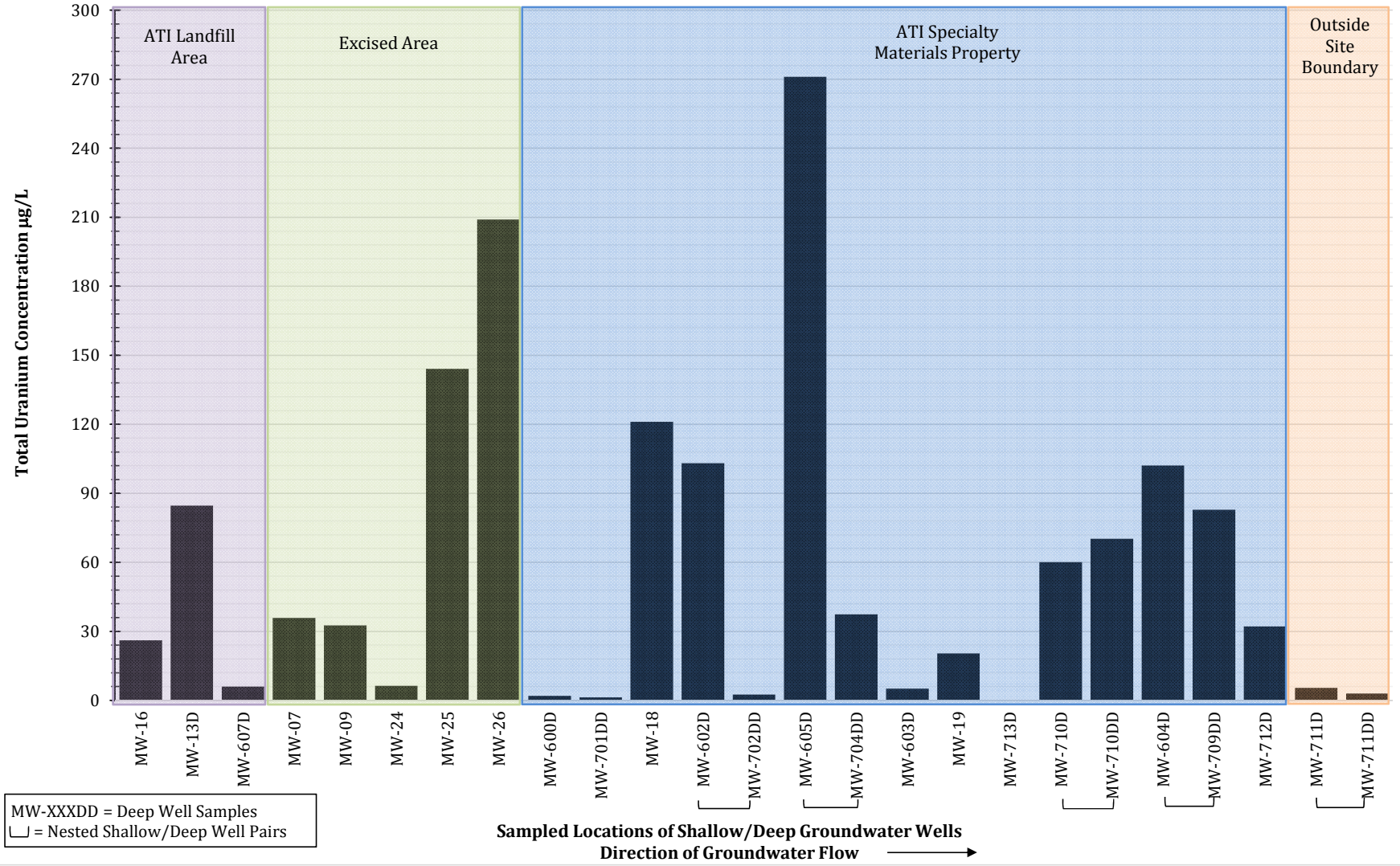
TOTAL URANIUM IN DEEP GROUNDWATER (SEPTEMBER 2016)

Document Name: 170201_2016DeepWG.mxd
Drawn By: H5TDESPM
Date Saved: 06 Feb 2017
Time Saved: 2:57:04 PM

GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

FIGURE 3

Figure 4: Total Uranium Concentrations in Filtered Groundwater Samples (September 2016)



US Army Corps of Engineers
Buffalo District
BUILDING STRONG

Table 1
Guterl Specialty Steel Corporation
Groundwater Results 2007–2016

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-01	8/2/2007		1.32	–0.00500 U	1.27
	11/14/2007		1.03	0.0460 U	0.720
	9/16/2009	3.209	2.06	0.0263 U	1.24
	9/20/2010	3.28	1.98	0.126 U	1.29
	8/23/2011	4.00 J	1.86	0.0200 U	1.22
	10/25/2012	3.44	1.11	0.100 J	1.05
	9/26/2013	3.43	1.28	0.136 J	1.04
	5/6/2014	3.85	1.24	0.0710 J	1.23
	8/4/2015	3.86	1.40	0 U	1.63
MW-01 (Filtered)	8/2/2007		1.46	0.0700 U	1.30
	11/14/2007		0.830	0.0560 U	0.930
	9/16/2009	3.10	1.70	0.221	1.18
	9/20/2010	2.93	2.16	0.245	1.75
	8/23/2011	3.50 J	1.32	–0.00800 U	1.24
	10/25/2012	3.29	1.15	–0.0150 U	0.799
	9/26/2013	3.47	1.24 J	0.0290 UJ	1.17 J
	5/6/2014	3.85	1.27	0.147 J	0.955
	8/4/2015	3.68	1.72	0.137	1.14
MW-02	8/7/2007		6.30	0.220	7.20
	11/14/2007		6.00	0.400	7.10
	9/15/2009	35.3	12.4	1.02	15.5
	9/20/2010	21.4	7.31	0.298	7.70
	8/23/2011	41.3 J	12.0	0.620	12.9
	10/25/2012	23.8	7.40	0.472	7.97
	8/6/2015	9.93	3.74	0.168 J	3.41
MW-02 (Filtered)	8/7/2007		6.10	0.300	6.50
	11/14/2007		5.85	0.330	7.10
	9/15/2009	37.05	12.5	0.728	12.2
	9/20/2010	21.8	6.90	0.900	6.77
	8/23/2011	39.7 J	9.68	0.360	10.4
	10/25/2012	24.0	7.21	0.279	7.58
	8/6/2015	10.5	3.09	0.246 J	3.98

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-03	8/9/2007		2.38	0.130 U	1.80
	11/14/2007		1.89	–0.0100 U	1.56
	9/15/2009	2.78	1.202	0.177 U	0.986
	9/20/2010	1.95	1.44	0.198 J	1.29
	8/22/2011	2.60	0.880	0.0400 U	0.920
	8/5/2015	3.84	1.50	0.0470 U	1.02
MW-03 (Filtered)	8/7/2007		2.20	0.0900	2.31
	11/14/2007		1.68	0.0680 U	1.62
	9/15/2009	2.71	1.43	0.144 U	1.64
	9/20/2010	1.86	2.02	0.473	1.38
	8/22/2011	2.50	1.06	0.0120 U	0.860
	8/5/2015	3.93	1.54	0.0550 J	1.68
MW-04	8/10/2007		17.8	0.720	16.2
	11/15/2007		17.3	0.660	15.7
	9/17/2009	30.5	15.3	0.920	13.4
	9/20/2010	39.9	13.6	1.04	13.7
	8/19/2011	48.0	14.9	0.870	14.4
	10/24/2012	39.6	15.5	0.748	13.9
	8/4/2015	38.8	12.9	0.528	12.7
MW-04 (Filtered)	8/8/2007		18.2	0.790	15.9
	11/15/2007		17.9	0.760	16.8
	9/17/2009	33.4	13.3	0.554	12.8
	9/20/2010	39.2	11.7	0.622	11.0
	8/19/2011	46.0	16.1	0.800	16.7
	10/24/2012	41.2	14.0	0.500	13.0
	8/5/2015	39.3	12.7	0.711	12.6
MW-05	8/10/2007		3.03	0.250	2.61
	11/14/2007		2.20	0.0450 U	2.09
	9/17/2009	5.16	2.08	0.180	1.56
	9/20/2010	5.95	3.62	0.546	2.64
	8/22/2011	6.10	2.36	0.0980	2.06
	8/10/2015	6.07	2.43	0.136 J	2.18
MW-05 (Filtered)	8/9/2007		3.19	0.25	2.77
	11/14/2007		2.16	0.15	1.82
	9/17/2009	5.91	2.59	0.1929	1.998
	9/20/2010	5.75	2.50	0.143	2.03
	8/22/2011	6.20	2.40	0.112	2.21
	8/10/2015	6.06	2.39	0.078 J	1.89

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-06	8/6/2007		1.55	0.0280 U	1.29
	11/14/2007		3.91	0.150	2.94
	9/15/2009	1.20	0.803	0.053 U	0.474
	9/17/2010	5.07	1.92	0.231 J	1.5
	8/12/2011	3.60	1.77	0.0340	1.16
	8/4/2015	3.77	1.86	0.0470 J	1.26
MW-06 (Filtered)	8/2/2007		1.30	0.0600 U	1.06
	11/14/2007		2.95	0.0900	2.62
	9/15/2009	0.820 U	0.308 U	0.104 U	0.317
	9/17/2010	4.87	2.81	0.380 J	2.10
	8/12/2011	3.60	1.57	0.107	1.04
	8/4/2015	3.77	1.18	0.103 J	1.01
MW-07	9/15/2009	1.27	0.271 U	0.267 U	0.487
	9/17/2010	75.8	13.2	1.09	13.6
	8/12/2011	33.4	11.8	0.670	12.1
	10/23/2012	37.4	12.9	0.620	12.3
	9/26/2013	9.07	3.67	0.0790 J	2.90
	5/6/2014	2.84	0.716	0.0780 J	0.684
	8/4/2015	33.4	10.8	0.195 J	10.2
	9/21/2016	34.0			
MW-07 (Filtered)	9/15/2009	1.24	0.777	0.187 U	0.331
	9/17/2010	33.9	11.2	0.693	10.9
	8/12/2011	32.4	10.5	0.540	10.6
	10/23/2012	36.6	12.4	0.612	12.3
	9/26/2013	9.95	3.49	0.0960 J	3.74
	5/6/2014	2.75	1.06	–0.00900 U	0.908
	8/4/2015	29.3	9.86	0.457	10.4
	9/21/2016	35.8			
MW-08	8/20/2007		0.510	0 U	0.260
	11/14/2007		0.410	0 U	0.260
	9/16/2009	0.966 U	0.754	0.0376 U	0.309 U
	9/20/2010	1.00 U	0.790	0.120 U	0.480
	8/8/2011	1.10 J	0.370 J	–0.0060 UJ	0.240 J
	8/5/2015	1.09	0.682 J	0.0380 U	0.409 J
MW-08 (Filtered)	8/20/2007		0.390	–0.00500 U	0.180
	11/14/2007		0.230	0.0450 U	0.084 U
	9/16/2009	0.809 U	0.667	0.0373 U	0.111 U
	9/20/2010	1.00 U	1.19	0.348 J	0.718
	8/8/2011	1.10 J	0.400	0.0220 U	0.340
	8/5/2015	1.08	0.481	0.0650 J	0.499

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-09	8/7/2007		4.20	0.270	4.99
	11/14/2007		4.22	0.230	4.50
	9/16/2009	18.9	6.42	0.436	6.80
	9/20/2010	19.5	8.48	1.30	8.66
	8/8/2011	21.8 J	6.07	0.320	6.48
	10/25/2012	41.0	11.3	0.427	13.7
	9/26/2013	111	34.1	1.86	35.9
	5/6/2014	46.0	13.3	0.572	15.1
	8/5/2015	47.0	14.1	0.751	15.6
	9/22/2016	32.9			
MW-09 (Filtered)	8/7/2007		4.74	0.160	5.17
	11/14/2007		4.03	0.220	4.11
	9/16/2009	18.02	6.86	0.677	8.38
	9/20/2010	20.8	7.44	0.617	6.85
	8/8/2011	21.1 J	6.26	0.280	6.70
	10/25/2012	41.1	12.5	0.745	13.8
	9/26/2013	117	33.0	1.35	36.4
	5/6/2014	48.7	13.0	1.00	15.2
	8/5/2015	47.5	13.9	0.592	15.5
	9/22/2016	32.5			
MW-10	9/15/2009	0.965 U	0.596	0.0394 U	0.491
	9/17/2010	1.21	1.25	0.208 J	0.700
	8/12/2011	1.60	0.580	0.0290	0.410
	8/6/2015	1.48	0.660	0.0700 J	0.587
MW-10 (Filtered)	9/15/2009	1.0029	0.198	0.0889 U	0.360
	9/17/2010	1.17	1.38	0.29 0J	1.40
	8/12/2011	1.50	0.650	0.0110 U	0.530
	8/6/2015	1.34	0.482	0.0770 J	0.600
MW-11	8/20/2007		1.82	0.130	1.90
	11/14/2007		6.80	0.380	5.91
	9/15/2009	2.61	1.36	0.270	1.27
	9/20/2010	20.9	4.50	0.359	4.80
	8/8/2011	17.7 J	4.13	0.260	4.56
	10/25/2012	32.1	10.1	0.521	10.6
	8/6/2015	15.6	4.95	0.214 J	4.89

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-11 (Filtered)	8/20/2007		1.65	0.100	1.41
	11/14/2007		5.32	0.330	5.28
	9/15/2009	6.39	2.22	0.184 U	2.34
	9/20/2010	22.1	8.62	1.19	7.77
	8/8/2011	14.5 J	4.75	0.220	4.65
	10/25/2012	33.0	10.8	0.741	12.0
	8/6/2015	13.3	4.10	0.327 J	5.13
MW-12	9/15/2009	1.310	0.700	0.0682 U	0.4215
	9/20/2010	1.68	1.35	0.0980	1.02
	8/22/2011	3.90	1.49	0.136	1.43
	8/6/2015	2.43	0.857	0.123 J	0.885
MW-12 (Filtered)	9/15/2009	0.729 U	0.614	0.0123 U	0.482
	9/20/2010	1.91	0.990	0.261 J	0.782
	8/22/2011	3.80	1.06	0.140	1.36
	8/6/2015	2.38	0.877	0 U	0.877
MW-13D	8/6/2007		19.6	0.820	21.0
	11/16/2007		20.3	1.00	22.4
	9/23/2009	101.5	30.5	1.83	32.4
	9/14/2010	72.6	27.2	0.546	29.0
	8/11/2011	79.8	23.9	1.13	24.6
	10/25/2012	109	35.2	1.86	35.5
	9/25/2013	80.0	26.1	1.45	26.2
	5/7/2014	103	32.9	1.09	33.5
	8/10/2015	88.8	29.4	1.66	29.3
	9/21/2016	87.0			
MW-13D (Filtered)	8/6/2007		21.4	0.980	20.9
	11/16/2007		20.4	1.05	22.3
	9/23/2009	105.7	34.3	1.91	35.6
	9/14/2010	69.1	19.6	0.328 J	20.9
	8/11/2011	80.2	22.6	1.13	23.6
	10/25/2012	107	35.2	1.47	36.1
	9/25/2013	80.5	22.8	1.52	23.9
	5/7/2014	98.5	25.6	1.46	27.2
	8/10/2015	85.5	24.6	1.47	30.7
	9/21/2016	84.6			
MW-14	8/1/2007		0.920	0.100	0.900
	11/12/2007		1.52	0.0210 U	1.08
	9/23/2009	6.39	2.47	0.2291	2.94
	9/14/2010	7.01	2.02	0.157 U	1.73
	8/16/2011	8.00	2.49	0.170	2.08
	8/10/2015	10.4	3.17	0.113 J	3.70

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-14 (Filtered)	8/1/2007		0.870	0.0360 U	0.800
	11/12/2007		0.930	0.0480 U	1.17
	9/23/2009	6.10	2.44	0.2501	2.83
	9/14/2010	7.29	2.36	0.226 J	2.20
	8/16/2011	8.00	2.49	–0.0380 U	2.09
	8/10/2015	9.24	3.50	0.116 J	3.11
MW-15	8/14/2007		0.170	0.0600 U	0.110 U
	11/13/2007		4.13	0.340	4.58
	9/22/2009	0.843 U	1.03	0.140 U	0.387
	9/14/2010	1.00 U	0.688 J	0.174 J	0.459
	8/16/2011	2.00	0.370	0.0220 U	0.610
	8/6/2015	3.98	0.965	0.193 J	1.27
MW-15 (Filtered)	8/14/2007		0.120 U	–0.00500 U	0.08200 U
	11/13/2007		5.70	0.330	7.20
	9/22/2009	1.089	0.400	0.0872 U	0.633
	9/14/2010	1.39	0.812	0.0360 U	0.643
	8/16/2011	1.50	0.480	0.00300 U	0.580
	8/6/2015	4.26	1.27	0.0510 U	1.53
MW-16	8/1/2007		5.55	0.310	6.30
	11/12/2007		8.60	0.430	9.60
	9/22/2009	29.8	11.4	0.701	10.3
	9/14/2010	21.9	3.04	0.198	3.57
	8/19/2011	29.3	8.80	0.440	9.70
	10/22/2012	27.1	8.54	0.382	9.42
	9/25/2013	35.7	11.3	0.556	11.1
	5/6/2014	25.3	7.20	0.268	8.00
	8/6/2015	28.2	7.75	0.448 B	8.37
	9/21/2016	26.1			
MW-16 (Filtered)	8/1/2007		5.59	0.390	6.40
	11/12/2007		9.00	0.330	9.70
	9/22/2009	32.007	11.0	0.905	11.6
	9/14/2010	26.7	7.03	0.586	8.18
	8/19/2011	27.7	8.90	0.450	10.2
	10/22/2012	28.1	9.19	0.318	9.86
	9/25/2013	36.4	10.0	0.995	11.6
	5/6/2014	26.0	7.95	0.589	8.02
	8/6/2015	28.0	9.61	0.692	9.45
	9/21/2016	26.0			

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-17	7/31/2007		0.660	0.0710	0.640
	11/12/2007		0.610	0.0160 U	0.570
	9/22/2009	6.21	2.55	0.319	2.43
	9/14/2010	7.70	2.65	0.300	2.48
	8/16/2011	8.50	2.27	0.180	1.82
	8/10/2015	6.68	2.25	0.184 J	2.42
MW-17 (Filtered)	7/31/2007		0.780	0.100 U	0.930
	11/12/2007		0.480	0.0490 U	0.540
	9/22/2009	6.86	2.09	0.136 U	2.06
	9/14/2010	7.16	2.43	0.257 J	2.31
	8/16/2011	8.30	2.39	0.161	2.30
	8/10/2015	6.91	2.16	0.159 J	2.75
MW-18	8/15/2007		42.0	2.20	43.2
	11/15/2007		40.4	1.61	39.2
	9/21/2009	150	51.1	5.11	51.4
	9/15/2010	126	35.3	0.373	45.0
	8/5/2011	123 J	38.8	1.72	39.6
	10/25/2012	146	48.0	2.56	49.0
	9/24/2013	155	45.4	2.43	50.0
	5/7/2014	102	27.9	1.42	29.1
	8/10/2015	127	43.9	1.86	45.4
	9/22/2016	117			
MW-18 (Filtered)	8/15/2007		42.6	1.66	41.4
	11/15/2007		41.4	2.08	44.3
	9/21/2009	122	50.5	3.07	49.8
	9/15/2010	125	37.0	0.973	40.9
	8/5/2011	125 J	37.7	1.79	36.6
	10/25/2012	149	47.3	2.87	46.8
	9/24/2013	150	46.1	1.91	47.4
	5/7/2014	117	35.7	2.00	35.9
	8/10/2015	134	42.7	1.89	44.2
	9/22/2016	121			
MW-19	8/6/2007		2.22	0.100 U	2.18
	11/15/2007		2.34	0.120	2.31
	9/18/2009	11.9	5.88	0.149 U	5.04
	9/15/2010	19.9	6.33	0.241 U	6.01
	8/4/2011	16.4 J	4.52	0.270	4.77
	10/22/2012	18.9	6.30	0.270	6.36
	9/24/2013	18.6	5.39	0.301	5.89
	5/6/2014	25.8	7.79	0.311	7.64
	8/4/2015	17.4	5.79	0.361	5.43
	9/22/2016	21.2			

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-19 (Filtered)	8/6/2007		2.45	0.0610 U	1.90
	11/15/2007		2.19	0.0900 U	2.27
	9/18/2009	12.3	5.09	0.266 U	4.37
	9/15/2010	19.8	5.41	0.163 U	5.40
	8/4/2011	12.9 J	4.34	0.192	4.27
	10/22/2012	18.8	6.03	0.377	6.03
	9/24/2013	18.3	5.69	0.201	6.21
	5/6/2014	24.7	7.38	0.570	8.20
	8/4/2015	18.1	5.83	0.286	6.34
	9/22/2016	20.3			
MW-20	8/1/2007		3.36	0.220	3.67
	11/13/2007		3.84	0.170	3.86
	9/21/2009	13.1	4.84	0.240	4.64
	9/15/2010	12.2	4.36	0.373	3.99
	8/18/2011	13.5	4.50	0.230	4.27
	10/23/2012	9.57	3.57	0.222	2.99
	9/25/2013	14.4	4.63	0.265	5.14
	5/7/2014	17.1	4.86	0.242	5.09
	8/4/2015	13.0	4.74	0.204	4.39
MW-20 (Filtered)	8/1/2007		3.64	0.140	3.78
	11/13/2007		3.59	0.190	3.50
	9/21/2009	12.2	5.04	0.205 U	4.82
	9/15/2010	13.7	4.08	0.160	3.96
	8/18/2011	13.3	3.89	0.240	3.82
	10/23/2012	9.98	3.13	0.176	3.67
	9/25/2013	14.7	4.51	0.312	4.51
	5/7/2014	16.9	5.52	0.361	5.78
	8/4/2015	12.4	4.08	0.198	3.86
MW-21	8/14/2007		1.91	0.0700 U	1.65
	11/13/2007		2.00	0.0200 U	2.34
	9/22/2009	2.52	1.45	0.0804 U	1.05
	9/15/2010	4.46	1.730	0.694	1.51
	8/18/2011	3.10	0.730	0.058	0.790
	10/25/2012	5.40	1.80	0.0920	1.93
	9/25/2013	1.91	0.497 J	0.03700 UJ	0.420 J
	5/6/2014	3.13	0.926	0.104 J	0.861
	8/10/2015	2.42	0.897	0.0530 U	0.638

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-21 (Filtered)	8/14/2007		1.69	0.0460 U	1.32
	11/13/2007		1.97	0.120	1.75
	9/22/2009	3.52	1.20	0.256	1.22
	9/15/2010	3.57	2.02	0.269	1.49
	8/18/2011	3.20	1.03	0.0370 U	0.930
	10/25/2012	5.20	1.65	0.139	1.91
	9/25/2013	2.11	1.04	–0.0160 U	0.572
	5/6/2014	2.51	0.695	0.106 J	0.724
	8/10/2015	2.49	1.16	0.0700 J	0.790
MW-22	8/8/2007		23.3	1.24	22.7
	11/15/2007		4.85	0.260	4.98
	9/16/2009	76.3	31.7	2.43 U	29.2
	9/17/2010	9.09	3.19	0.229	2.47
	8/5/2011	73.6 J	24.3	1.03	24.8
	10/23/2012	12.9	4.31	0.294	3.99
	8/4/2015	83.2	25.2	1.11	26.1
MW-22 (Filtered)	8/8/2007		21.5	1.00	21.8
	11/15/2007		4.49	0.190	4.10
	9/16/2009	82.0	28.4	2.04	21.8
	9/17/2010	8.72	2.69	0.218 J	2.82
	8/5/2011	65.1 J	21.6	1.05	21.2
	10/23/2012	12.3	4.38	0.251	4.45
	8/4/2015	73.2	24.5	1.37	24.7
MW-23	8/10/2007		2.06	0.0440 U	1.97
	11/15/2007		3.18	0.0900 U	3.50
	9/17/2009	6.91	3.26	0.212 U	2.41
	9/20/2010	7.29	3.89	0.316 J	4.81
	8/4/2011	6.70 J	1.79	0.114	1.73
	10/24/2012	8.72	2.88	0.108	3.07
	9/26/2013	5.58	1.49 J	0.0280 UJ	1.22 J
	5/6/2014	5.55	1.99	0.0660 U	2.15
	8/5/2015	7.38	2.72	0.158 J	2.35
MW-23 (Filtered)	8/10/2007		2.71	0.160	2.34
	11/15/2007		3.79	0.0760 U	3.36
	9/17/2009	5.85	2.71	0.4117	3.30
	9/20/2010	8.51	2.63	0.198 J	2.63
	8/4/2011	6.30 J	1.74	0.136	1.64
	10/24/2012	8.46	2.46	0.162	2.64
	9/26/2013	5.10	1.51	0.116 J	1.68
	5/6/2014	5.18	1.65	0.228	1.65
	8/5/2015	6.12	2.07	0.0940 J	2.15

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-24	8/8/2007		0.280	0.0250 U	0.260
	11/15/2007		2.18	0.130	1.83
	9/17/2009	2.75	9.53	5.99	4.28
	9/21/2010	24.6	8.75	0.895	10.2
	8/4/2011	39.8 J	13.1	0.430	12.6
	10/24/2012	8.02	2.78	0.107	2.75
	8/5/2015	9.65	3.47	0.112 J	3.35
	9/22/2016	5.29			
MW-24 (Filtered)	8/8/2007		0.370	0 U	0.260
	11/15/2007		3.45	0.16	3.37
	9/17/2009	6.92	3.76	0.182 U	3.73
	9/21/2010	29.4	10.2	0.793	10.8
	8/4/2011	42.7 J	12.5	0.510	11.6
	10/24/2012	11.9	4.12	0.178	4.39
	8/5/2015	12.5	4.24	0.357	4.56
	9/22/2016	6.25			
MW-25	9/17/2009	150.5	65.7	5.18	69.72
	9/21/2010	198	52.1	2.88	55.0
	8/12/2011	175	55.7 J	3.22 J	56.4 J
	10/24/2012	166	68.8	3.21	63.4
	9/25/2013	154	51.9	2.82	49.9
	5/7/2014	166	53.0	2.79	53.4
	8/5/2015	108	42.0	2.72	37.2
	9/21/2016	133			
MW-25 (Filtered)	9/17/2009	170.2	64.5	3.65	62.2
	9/21/2010	211	53.5	3.97	55.9
	8/12/2011	171	58.5 J	3.28 J	60.5 J
	10/24/2012	162	53.0	2.25	60.9
	9/25/2013	160	66.4	4.61	60.3
	5/7/2014	170	50.3	2.63	52.3
	8/5/2015	111	44.9	2.41	45.2
	9/21/2016	144			

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-26	8/10/2007		65.8	2.65	65.6
	11/16/2007		80.0	5.30	77.9
	9/17/2009	148	61.9	4.04	62.03
	9/21/2010	162	46.6	2.08	49.3
	8/10/2011	107	34.7	1.97	35.0
	2/1/2012	145 J	39.7 J	1.62	38.3 J
	5/4/2012	145	52.7	2.36	54.4
	8/6/2012	155	49.0	2.48	47.6
	10/24/2012	243	77.3	3.86	76.9
	9/25/2013	4.95	10.3	0.150 J	2.20
	5/7/2014	219	70.4	3.94	72.7
	8/4/2015	255	93.2	6.29	93.8
	9/21/2016	209			
MW-26 (Filtered)	8/9/2007		60.0	2.79	58.7
	11/16/2007		82.0	4.17	78.0
	9/17/2009	144	66.4	2.94	65.3
	9/21/2010	160	43.7	2.22	44.3
	8/10/2011	94.6	32.1	1.62	32.7
	2/1/2012	152 J	48.4 J	2.10	48.4 J
	5/4/2012	139	54.5	2.62	55.7
	8/6/2012	147	46.6	1.87	46.3
	10/24/2012	260	69.8	3.66	70.5
	9/25/2013	4.18	8.82	0.363	2.09
	5/7/2014	223	62.8	2.93	63.0
	8/4/2015	248	76.8	3.54	82.1
	9/21/2016	209			
MW-600D	8/17/2007		1.17	0.0800 U	0.690
	11/13/2007		0.660	0 U	0.660
	9/22/2009	2.40	0.908	0.171 U	0.711
	9/15/2010	2.25	1.13	0.548	0.817
	8/22/2011	2.40	0.920	0.0320 U	0.780
	10/22/2012	1.41	0.715	0.0400	0.616
	9/24/2013	2.12	0.946	0.0570 J	0.588
	5/6/2014	2.26	1.17	0.0500 U	0.714
	8/10/2015	2.11	0.756	–0.0120 U	0.740
	9/21/2016	1.92			

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-600D (Filtered)	8/17/2007		3.78	0.170	3.30
	11/13/2007		0.860	0.0430 U	0.860
	9/22/2009	1.92	1.28	0.0349 U	0.543
	9/15/2010	2.56	1.55	0.103 U	0.801
	8/22/2011	2.50	1.28	0.0500 U	0.930
	10/22/2012	1.54	0.761	0.00600 U	0.635
	9/24/2013	1.82	0.693	0.0280 J	0.537
	5/6/2014	2.08	1.04	0.193 J	0.790
	8/10/2015	2.10	0.880	–0.0150 U	0.901
	9/21/2016	1.86			
MW-600S	9/22/2009	2.61	1.37	0 U	1.40
	8/10/2015	2.34	1.31	0.0220 U	0.725
MW-600S (Filtered)	9/22/2009	1.49	0.913	0.0751 U	0.727
	8/10/2015	2.27	1.36	0.0460 U	0.683
MW-601D	8/13/2007		5.83	0.400	5.23
	11/13/2007		7.10	0.450	7.00
	9/21/2009	2.17	0.916	0.173 U	0.840
	9/15/2010	7.81	5.52	0.486	3.10
	8/18/2011	9.60	2.54	0.104	2.66
	10/23/2012	7.30	2.66	0.0770	2.36
	8/6/2015	4.09	1.53	0.154	1.27
MW-601D (Filtered)	8/15/2007		6.30	0.240	6.5
	11/13/2007		8.00	0.480	8.4
	9/21/2009	3.43	1.53	0.121 U	1.17
	9/15/2010	9.78	3.94	0.677	2.79
	8/18/2011	10.6	2.56	0.130	2.61
	10/23/2012	8.17	2.82	0.244	2.83
	8/6/2015	4.03	1.12	0.137	1.34
MW-602D	8/15/2007		36.0	1.77	37.5
	11/15/2007		25.6	1.39	26.0
	9/21/2009	150	53.7	3.49	47.4
	9/15/2010	109	37.3	0.828	37.3
	8/11/2011	113	36.5	1.84	36.0
	10/23/2012	110	37.2	1.95	35.7
	9/25/2013	162	47.4	3.11	49.5
	5/6/2014	115	37.9	2.86	39.1
	8/5/2015	3.48	4.56	0.168 J	1.64
	9/21/2016	106			

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-602D (Filtered)	8/15/2007		39.1	2.15	39.0
	11/15/2007		27.6	1.77	29.8
	9/21/2009	133	47.7	3.85	47.0
	9/15/2010	117	34.3	0.849	37.7
	8/11/2011	112	36.9	2.08	36.8
	10/23/2012	110	36.3	1.70	36.5
	9/25/2013	153	43.8	2.76	46.4
	5/6/2014	120	33.7	2.18	35.2
	8/5/2015	3.41	4.09	0 U	1.09
	9/21/2016	103			
MW-603D	8/14/2007		4.06	0.200	3.84
	11/14/2007		5.06	0.100	4.28
	9/17/2009	4.84	2.65	0.492	2.12
	9/15/2010	4.86	2.89	0.199	2.11
	8/5/2011	11.1 J	2.86	0.107	2.76
	10/23/2012	6.58	2.51	0.115	2.23
	9/26/2013	7.68	2.25	0.152 J	2.37
	5/6/2014	8.08	2.23	0.237 J	2.37
	8/4/2015	7.55	2.17	0.117 J	2.29
	9/21/2016	5.11			
MW-603D (Filtered)	8/17/2007		1.15	0.0200 U	0.860
	11/14/2007		3.92	0.0660 U	3.42
	9/17/2009	4.88	2.47	0.290	2.33
	9/15/2010	6.40	2.79	0.261	2.74
	8/5/2011	8.20 J	3.01	0.196	2.97
	10/23/2012	6.71	2.64	0.0900	2.15
	9/26/2013	7.44	2.56	0.121 J	2.38
	5/6/2014	7.95	3.00	0.0450 U	2.79
	8/4/2015	7.32	2.11	0.270	1.93
	9/21/2016	5.07			

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-604D	8/15/2007		23.5	0.960	23.7
	11/15/2007		39.0	1.92	38.2
	9/18/2009	117	39.3	3.10	39.3
	9/15/2010	140	44.	0.778	41.2
	8/10/2011	103	37.1	1.79	37.0
	2/2/2012	76.7 J	23.1	1.05	21.9
	5/4/2012	86.5	29.2	1.28	28.8
	8/6/2012	108	35.1	1.50	35.2
	10/23/2012	112	36.1	1.65	35.4
	9/24/2013	97.2	28.4	1.27	30.6
	5/7/2014	63.6	20.4	0.699	20.5
	8/4/2015	123	34.7	1.88	42.4
	9/21/2016	101			
MW-604D (Filtered)	8/13/2007		22.8	1.55	24.7
	11/15/2007		43.2	1.81	42.3
	9/18/2009	104	43.5	3.06	43.4
	9/15/2010	121	36.2	0.617	37.2
	8/10/2011	101	31.4	1.52	30.4
	2/2/2012	76.4 J	22.0	1.28	23.1
	5/4/2012	76.4	31.0	1.52	29.9
	8/6/2012	105	34.5	1.57	33.5
	10/23/2012	111	32.2	1.71	32.6
	9/24/2013	97.9	31.3	1.55	29.9
	5/7/2014	67.9	19.9	0.519	19.6
	8/4/2015	111	35.9	2.37	40.9
	9/21/2016	102 J			
MW-605D	8/16/2007		67.0	4.90	63.0
	11/16/2007		66.9	3.23	68.2
	9/18/2009	274	100.6	5.45	100.7
	9/21/2010	248	74.1	3.09	74.8
	8/10/2011	214	67.5	3.43	65.8
	2/1/2012	299 J	87.3	3.59	91.0
	5/5/2012	265	86.2	4.09	87.8
	8/6/2012	259	85.8	3.75	82.6
	10/24/2012	270	79.7	3.59	79.1
	9/25/2013	247	88.7	4.50	84.3
	5/6/2014	292	87.4	4.67	83.7
	8/5/2015	273	92.2	5.17	95.2
	9/21/2016	273			

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-605D (Filtered)	8/13/2007		68.0	3.60	64.0
	11/16/2007		70.0	3.40	64.2
	9/18/2009	238	97.3	12.1	88.77
	9/21/2010	254	81.8	8.28	84.0
	8/10/2011	209	68.6 J	3.38 J	67.1 J
	2/1/2012	302 J	92.9	3.99	91.2
	5/5/2012	256	90.2	4.37	89.6
	8/6/2012	251	78.7	3.67	77.5
	10/24/2012	266	85.2	4.75	84.0
	9/25/2013	255	74.6	4.21	74.5
	5/6/2014	267	78.6	5.23	80.4
	8/5/2015	272	94.7	4.68	94.0
	9/21/2016	271			
MW-606D	9/23/2009	7.24	2.86	0.268	3.03
	9/14/2010	6.91	1.76	0.180 U	1.92
	8/16/2011	7.50	2.60 J	0.19 0J	2.91 J
MW-606D (Filtered)	9/23/2009	5.67	2.62	0.213	3.10
	9/14/2010	6.09	1.58	0.118 U	1.69
	8/16/2011	7.40	2.88 J	0.0680 J	2.37 J
MW-606DR	11/16/2007		2.66	0.160	2.90
	9/23/2009	9.29	3.92	0.795 U	3.66
	9/14/2010	12.8	5.77	0.824	4.56
	8/15/2011	12.8	3.37	0.230	3.73
	8/10/2015	6.20	2.38	0.220 J	2.02
MW-606DR (Filtered)	11/16/2007		2.51	0.200	2.40
	9/23/2009	15.0	5.67	0.433	5.45
	9/14/2010	14.7	4.95	0.396	4.76
	8/15/2011	12.4	4.2 J	0.170 J	4.54 J
	8/10/2015	7.61	2.45	0.0670 J	2.61
MW-607D	8/15/2007		0.0330 U	–0.00800 U	–0.0100 U
	11/13/2007		0.0230 U	–0.00500 U	0.0640
	9/23/2009	14.9	5.50	0.270	4.92
	9/14/2010	10.0	3.36	0.178 U	3.71
	8/19/2011	19.5	5.35	0.240	4.99
	10/22/2012	13.9	4.86	0.133	5.05
	9/25/2013	13.4	4.29	0.263	4.40
	5/6/2014	15.8	5.01	0.205	4.25
	8/6/2015	11.2	3.19	0.201 J	4.45
	9/21/2016	6.35			

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-607D (Filtered)	8/15/2007		0.0640 U	0.0190 U	0.0270 U
	11/13/2007		0.150	–0.00900 U	0.00900 U
	9/23/2009	17.7	6.07	0.456	6.521
	9/14/2010	10.9	4.95	0 U	3.01
	8/19/2011	12.3	3.88	0.119	4.04
	10/22/2012	12.2	3.62	0.316	4.74
	9/25/2013	13.0	3.63	0.313	3.61
	5/6/2014	14.7	4.51	0.217	4.77
	8/6/2015	12.7	3.98	0.215 J	4.45
	9/21/2016	5.97			
MW-701DD	8/19/2011	1.40	0.890	0.0410	0.390
	8/4/2015	0.633	0.158 J	–0.00900 U	0.233
	9/22/2016	0.946 J			
MW-701DD (Filtered)	8/19/2011	1.50	0.770	0.0360	0.460
	8/4/2015	1.68	0.228 J	0.0660 J	0.228
	9/22/2016	1.30 J			
MW-702DD	8/11/2011	4.50	6.65	0.103	1.84
	8/5/2015	144	52.2	2.74	51.8
	9/21/2016	2.70			
MW-702DD (Filtered)	8/11/2011	5.80	4.94	0.123	1.47
	8/5/2015	132	40.0	1.52	39.0
	9/21/2016	2.52			
MW-703DD	8/19/2011	0.280	0.0970	0.0150 U	0.070
	8/6/2015	0.248 J	0.148 J	0.0780 J	0.159 J
MW-703DD (Filtered)	8/19/2011	1.00 U	0.0230 U	0 U	0.0280 U
	8/6/2015	0.254 J	0.132 J	0.0810 J	0.0260 U
MW-704DD	8/10/2011	23.5	9.35	0.380	7.31
	2/2/2012	81.3 J	29.8	1.20	23.8
	5/5/2012	67.0	25.3	0.990	20.4
	8/6/2012	102	32.7	0.960	26.1
	10/22/2012	72.4	26.0	0.950	21.5
	8/5/2015	27.4	11.2	0.408	8.73
	9/21/2016	37.3			
MW-704DD (Filtered)	8/10/2011	26.3	10.8	0.460	8.36
	2/2/2012	80.2 J	26.3	1.15	22.6
	5/5/2012	65.8	27.8	1.15	21.1
	8/6/2012	68.1	27.6	0.810	22.3
	10/22/2012	73.4	27.9	1.20	22.6
	8/5/2015	28.8	12.7	0.659	10.2
	9/21/2016	37.3			

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-705D	8/9/2011	0.890 J	0.212	0.0180 U	0.185
	8/6/2015	1.60	1.61	0.0380 U	0.494
MW-705D (Filtered)	8/9/2011	2.80 J	0.500	0.0220 U	0.470
	8/6/2015	1.17	1.46	0.0790 J	0.284
MW-705DD	8/9/2011	1.70	0.510	0.0290	0.291
	8/6/2015	0.918	0.243	–0.009 BU	0.327
MW-705DD (Filtered)	8/9/2011	0.370	0.253	0 U	0.189
	8/6/2015	0.889	0.458	0.0190 BU	0.270
MW-706DD	8/15/2011	1.80	0.980	0.0290 U	0.480
	8/4/2015	1.05	0.758	0.0880	0.365
MW-706DD (Filtered)	8/15/2011	1.70	0.950	0.0120 U	0.420
	8/4/2015	1.20	0.782	0.182	0.232
MW-707DD	8/18/2011	34.5			
	2/1/2012	13.6 J	7.76 J	0.140	5.14
	5/4/2012	10.8	12.8	0.280	3.54
	8/7/2012	11.2	14.8	0.108	3.55
	10/23/2012	9.40	14.7	0.240	3.32
	8/4/2015	7.01	7.01	0.161 J	1.85
MW-707DD (Filtered)	8/18/2011	33.9			
	2/1/2012	14.1 J	14.5 J	0.230	4.32
	5/4/2012	10.6	12.30	0.180	3.51
	8/7/2012	8.30	9.00	0.129	2.73
	10/23/2012	8.40	12.2	0.128	2.49
	8/4/2015	1.39	6.66	0.0540 J	1.68
MW-708DD	8/11/2011	22.4	7.18	0.310	7.03
	1/31/2012	24.7 J	7.10	0.290	7.20
	5/5/2012	18.0	6.97	0.200	6.72
	8/4/2012	20.2	7.04	0.400	7.12
	10/22/2012	20.0	6.59	0.290	5.72
	9/25/2013	23.2	7.22	0.259	7.02
	5/7/2014	15.2	4.74	0.140 J	4.60
	8/6/2015	20.4	6.37	0.409 B	7.19
MW-708DD (Filtered)	8/11/2011	23.0	7.19	0.300	6.90
	1/31/2012	22.3 J	7.99	0.490	7.76
	5/5/2012	18.3	7.37	0.260	7.35
	8/4/2012	19.3	7.26	0.270	6.68
	10/22/2012	20.1	7.02	0.350	6.41
	9/25/2013	20.7	7.64	0.412	7.17
	5/7/2014	16.3	4.87 J	0.269 J	4.71 J
	8/6/2015	20.1	6.96	0.380 B	7.24

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-709DD	8/10/2011	52.8	16.8	0.710	16.0
	2/2/2012	88.3 J	25.5	1.48	26.3
	5/4/2012	80.0	27.7	1.05	28.7
	8/7/2012	82.7	28.4	1.83	28.6
	10/23/2012	85.9	27.6	1.41	27.8
	9/24/2013	33.9	13.1	0.378	12.3
	5/7/2014	74.8	23.6	1.32	24.4
	8/4/2015	72.7	22.9	0.514	23.8
	9/21/2016	84.7			
MW-709DD (Filtered)	8/10/2011	55.4	18.5	0.700	17.4
	2/2/2012	88.5 J	27.5	1.01	25.5
	5/4/2012	80.4	27.2	1.23	25.9
	8/7/2012	84.3	28.7	1.66	29.4
	10/23/2012	83.8	28.2	1.26	27.1
	9/24/2013	68.5	21.0	1.15	23.7
	5/7/2014	81.2	25.1	1.18	26.5
	8/4/2015	75.2	27.5	1.20	23.3
	9/21/2016	82.8			
MW-710D	8/15/2011	67.5	19.1 J	1.02	19.9
	1/30/2012	59.1 J	16.6	0.810	16.8
	5/4/2012	52.5	18.3	0.990	17.6
	8/7/2012	53.8	18.8	1.12	18.2
	10/22/2012	66.0	19.9	1.13	19.7
	9/26/2013	60.3	17.9	1.26	16.9
	5/6/2014	44.8	14.0	0.880	11.7
	8/6/2015	64.2	21.9	1.08	21.3
	9/21/2016	60.9			
MW-710D (Filtered)	8/15/2011	66.1	24.0 J	1.20	23.8
	1/30/2012	57.8 J	17.3	0.900	17.5
	5/4/2012	49.5	18.7	0.910	19.4
	8/7/2012	52.3	19.9	1.08	20.0
	10/22/2012	66.8	20.3	1.07	20.1
	9/26/2013	59.1	18.6	1.200	20.9
	5/6/2014	44.5	12.5	0.693	13.0
	8/6/2015	64.0	22.0	1.10	21.1
	9/21/2016	58.8			

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-710DD	8/18/2011	60.8	18.6	1.02	19.1
	1/30/2012	71.4 J	19.6	0.930	21.3
	5/4/2012	59.1	21.7	0.960	22.1
	8/7/2012	29.6	8.79	0.590	9.60
	10/22/2012	28.6	8.85	0.360	8.82
	8/6/2015	52.3	18.2	1.26	18.0
	9/21/2016	60.0			
MW-710DD (Filtered)	8/18/2011	67.0	21.0	1.38	21.3
	1/30/2012	71.9 J	20.0	1.17	20.4
	5/4/2012	56.6	19.0	1.00	19.1
	8/7/2012	28.9	9.28	0.430	9.50
	10/22/2012	28.3	9.34	0.470	9.06
	8/6/2015	46.5	15.2	0.818	14.1
	9/21/2016	70.2			
MW-711D	8/9/2011	9.00	2.78	0.0920	2.68
	10/23/2012	4.02	1.54	0.125	1.36
	9/26/2013	4.88	1.30	0.0330 U	1.49
	5/7/2014	4.95	1.38	0.181 J	1.27
	8/4/2015	5.24	2.16	0.0680 J	1.60
	9/21/2016	2.44			
MW-711D (Filtered)	8/9/2011	7.40	2.70	0.160	2.30
	10/23/2012	4.09	0.984	0.0790	1.05
	9/26/2013	4.88	1.79	0.0730 J	1.46
	5/7/2014	5.46	1.82	0.0570 U	2.04
	8/4/2015	5.42	2.24	0.096	2.26
	9/21/2016	2.94			
MW-711DD	8/15/2011	1.70 J	0.800 J	–0.0070 UJ	0.710 J
	10/23/2012	1.49	1.02	0.0390	1.03
	9/26/2013	3.88	1.53	0.110	1.20
	5/7/2014	1.72 J	0.932	0.0310 J	0.913
	8/4/2015	4.29	1.95	0.130	1.89
MW-711DD (Filtered)	8/15/2011	2.90 J	1.29	0.110 U	0.550
	10/23/2012	1.63	1.41	–0.0200 U	0.830
	9/26/2013	1.24	0.462	0.0490 U	0.481
	5/7/2014	0.955	0.216 J	0.0350 J	0.198
	8/4/2015	4.46	1.73	0.0840 J	1.48
MW-712DD	8/18/2011	38.7	13.2	0.590	12.7
	10/22/2012	28.3	9.92	0.590	10.3
	9/24/2013	13.5	4.54	0.286	4.37
	5/6/2014	10.3	3.60	0.206 J	2.99
	8/4/2015	31.4	10.4	0.568	10.4
	9/21/2016	41.0			

Location ID	Log Date	Total Uranium	Uranium-234	Uranium - 235	Uranium - 238
Units		µg/L	pCi/L	pCi/L	pCi/L
MW-712DD (Filtered)	8/18/2011	38.8	14.0	0.630	12.4
	10/22/2012	30.8	9.97	0.577	10.2
	9/24/2013	14.2	4.76 J	0.346 J	4.48 J
	5/6/2014	11.1	2.87 J	0.252 J	3.42 J
	8/4/2015	31.7	11.50	0.320	10.8
	9/21/2016	32.1			
MW-713D	8/4/2011	5.1 J	2.62	0.0610	1.26
	1/31/2012	1.00 J	0.320	0.100 U	0.230
	5/4/2012	0.330 J	0.0810	0.100 U	0.122
	8/4/2012	1.00 U	0.127	0.100 U	0.0930
	10/23/2012	1.00 U	0.0660	0.100 U	0.0810
	9/25/2013	0.309	0.0560 U	0.0300 U	–0.0730 U
	5/6/2014	0.168 J	0.0820 J	0.0520 U	0.153 J
	8/6/2015	0.261 J	0.185	0 U	0.113 J
	9/22/2016	0.052 U			
MW-713D (Filtered)	8/4/2011	4.70 J	2.67	0.0760	1.40
	1/31/2012	0.250 J	0.190	0.100 U	0.0710
	5/4/2012	1.00 U	0.103	0.100 U	0.0750
	8/4/2012	1.00 U	0.133	0.100 U	0.100 U
	10/23/2012	1.00 U	0.100 U	0.100 U	0.0200
	9/25/2013	0.0980 J	0.196	–0.00900 U	0.107 J
	5/6/2014	0.269 J	0.112 J	0.0290 U	0.0910 J
	8/6/2015	0.284 J	0.189	0.0210 U	0.0320 U
	9/22/2016	0.056 U			

Notes:

- Analysis for uranium, Method ASTM D5174 Modified.
- Analysis for isotopic uranium, Method EML U-02 Modified.
- The shaded rows identify 2016 data.
- The 2016 sampling event supports that an anomaly did occur in 2015 for shallow well MW-602D and deep well MW-702DD. The 2016 data is consistent with historical data before 2015.

pCi/L: Picocuries per liter
µg/L: micrograms per liter
U: Nondetect (Results are below the Minimum Detectable Activity/Minimum Detectable Concentration.)
J: Estimated